2010 Tar River Transit Community Transportation Service Plan (CTSP)

Prepared for:
North Carolina Department of Transportation Public Transportation Division
and Tar River Transit
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1. EXECUTIVE SUMMARY

This study reviewed the current performance and direction of Tar River Transit (TRT), which serves Edgecombe and Nash Counties including the Rocky Mount urban area, and recommends alternative strategies for all aspects of TRT service, including operations, capital investment, institutional and marketing strategies, planning, facility relocation, and staffing that will increase mobility options for passengers and improve the efficiency and effectiveness of the organization and transportation services.

Demographic Characteristics

The Study Area's population in 2008 was 146,356 residents, of which 52,682 resided in Edgecombe County and 93,674 in Nash County. Of the total population, approximately 7.5% are youth, 15.8% are seniors, 22.6% are mobility impaired, and 15.5% are below-poverty. About 11% of households have no access to a motor vehicle, while 32% only own one vehicle. The total population is expected to reach 171,381 by 2030, representing almost a 29 percent increase over 1990 levels.

Existing Transit Services

Tar River Transit is responsible for providing both fixed-route and demand-responsive transportation services within the Study Area, which encompasses both Edgecombe and Nash Counties. Currently, the fixed-route service is limited to the Rocky Mount urban area, with the demand-responsive service covering the entire Study Area. Fixed route service is available every day of the year, excluding Sundays, New Years Day, Martin Luther King, Jr. Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day. All fixed routes operate on hourly headways (weekdays and Saturdays). The buses run from 6:45 am to 6:45 pm Monday through Friday and 9:15 am to 5:45 pm on Saturdays.

The fare structure for fixed route transit is as follows:

- One-Way Transit Fare – $1.25. One-way rides may be purchased on-board buses for exact change.
- Reduced One-Way Transit Fare – $0.60. Available to Seniors (60+), Medicare cardholders, and individuals with disabilities.
- Tokens - $1.15 (each)
- Children under 42" – Free (limit three children per adult paying passenger)
- 10-Ride Tickets – $11.25, can be purchased from the City of Rocky mount Collections Office during regular business hours
- All-Day Tickets - $2.00 for full fare, $1.00 for reduced fare

- Transfers – Free. Riders must request transfer immediately upon boarding bus. All transfers must be used within one hour of receipt.

TRT offers paratransit and Dial-a-Ride Transit Service (DARTS) for all portions of the Study Area. DARTS service is offered Monday through Friday from 6:15AM until 6:15PM and on Saturday from 9:15AM until 5:15PM. All other paratransit service is Monday – Friday from 6:15PM until 5:30PM. TRT also offers Rural General Public routes for any citizen living in Nash and Edgecombe Counties. One-way fares for RGP routes are $4. RGP routes are offered 4 times a day following the same holiday schedule as the regular fixed route buses.

TRT systemwide ridership has decreased - albeit only slightly - in recent years. From 2004-05 to 2008-09, ridership has decreased by about 6.7 percent, with about 6,800 one-way passenger-trips lost each year (approximately 1.7 percent annually). In terms of individual segments, total ridership has essentially remained steady on fixed routes, while urban and rural paratransit ridership have decreased by about 9.6 percent in recent years. TRT has generally slightly increased service levels, both vehicle service hours and miles, over the past seven years. In terms of vehicle service hours, available data from 2004-05 to 2008-09 shows that they increased systemwide by about 4.6 percent, with 443 vehicle service hours added each year (approximately 1.1 percent annual growth). During the same time period, vehicle service miles increased systemwide by about 1.3 percent, with 3,802 vehicle service miles added each year (approximately 0.3 percent annual growth). Most of these increases occurred on fixed routes, as service levels for paratransit have declined in recent years.

The annual operating costs for Tar River Transit were at the following levels in FY 2008-9:

- $793,167 for urban transit service
- $1,312,796 for rural transit service

The operating cost of TRT's urban fixed-route service was mainly funded by federal funds (35 percent) and farebox revenue (31 percent). State funding and local funding contributed 17 percent each to the total revenues. In terms of urban demand-responsive service (DARTS), federal funding comprised the bulk of revenue (51 percent), followed by state assistance (42 percent), and farebox revenue (7 percent). Lastly, rural demand-responsive service revenue in FY 2008-09 mostly came from farebox and contracts (92 percent), followed by state assistance (8 percent). Systemwide, TRT's operating cost per one-way passenger trip in Fiscal Year 2008-09 was $5.68, with fixed route service performing better than rural demand-responsive service at $2.82 and $14.59 operating cost per passenger trip, respectively. The systemwide farebox recovery ratio was 12.4 percent, with the urban segment achieving farebox recovery ratio of around 30.9 percent, and the rural service 1.2 percent.

Service Recommendations

Phase I – Fixed-Route Short-Term Service Improvements (2010)

- Implement shorter and simpler route structures
- Extend the Golden East route frequency to one hour
- Introduce a new tenth fixed route, 'East Rocky Mount'

Phase I – Demand Response Service Improvements (2010)

- Add Saturday service for RGP routes

Phase II – Fixed Route Service Improvements (2011-2014)

- Extend evening service by two hours from 6:45 PM to 8:45 PM
- Increase Saturday service by INSERT HERE

Phase II – Demand Response Service Improvements (2011-2014)

- Extend evening service hours for ADA paratransit, DARTS, and RGP from 6:15 PM to 8:15 PM
- Add Saturday ADA and Paratransit service
- Initiate two way RGP services along US 64 and US 301
- Create a DARTS shared-ride feeder service
- Add Sunday DARTS service

Capital Recommendations

- Establish satellite transfer points at the following locations: Golden East Crossing Mall, Oakwood Shopping Center, and Nash General Hospital
- Initiate a Transit and Pedestrian Access Program to improve the following corridors: US 301, Sunset Ave, and Benvenue Rd
- Install more bus shelters, schedules at stops/on-board, and improved signage
- Renovate Transfer Center in downtown Rocky Mount
- Maintenance shop equipment and facility purchase

Institutional Recommendations

- Continue to work with surrounding county transit agencies to improve regional coordination
- Work with NCDOT to explore the need for enhanced inter-city bus service
- Conduct a focused marketing effort aimed at fostering awareness among the Study Area's residents regarding TRT options

Financial Recommendations

FARE STRATEGY

- TRT should strive to introduce electronic fareboxes as soon as possible, with a total changeover to the electronic transit fare payment completed by FY 2011-12.

- TRT should revise fare options, taking advantage of the new payment system. A variety of multi-ride pass options should be offered as well, including discounted monthly pass and/or stored value card as a potential replacement for the 10-ride tickets.

LOCAL, STATE, AND FEDERAL FUNDING

In order to fund ongoing operating costs, TRT will need to rely on existing local, state, and federal transit funding sources, including FTA 5307, FTA 5309 and FTA 5311 funds, NCDOT State Maintenance Assistance Program (SMAT) state funding, and the required local match. Other federal sources of previously untapped revenue include FTA 5310, FTA 5316, FTA 5317, State of Good Repair (SGR) initiative, Transit Investments for Greenhouse Gas and Energy Reduction (TIGGER) Program, Clean Fuels Grant Program, the Surface Transportation Program, and Congestion Mitigation and Air Quality (CMAQ) funds. These funds could be used to enhance and expand TRT services. The estimated additional local match needed to implement the recommendations of the CTSP will peak at $371,000 FY 2014-15 (see Table 3). This represents a __% increase from the current local match of $179,000.

PLAN BENEFITS

The CTSP will add an entirely new fixed route ('East Rocky Mount'), expand and adjust service on all other routes to increase user's convenience, provide additional transfer points systemwide, enhance existing weekend service, and perhaps most notably, extend weekday evening hours of service by an average of two hours on each individual route. Demand-response service will be expanded to offer later hours and weekend service. Finally, the improvements recommended as part of the Capital Plan, including fare option revisions (discounted monthly/weekly passes) and electronic fareboxes (electronic transit fare swipe cards), satellite transfer points, bus shelters, and other service improvements will enable TRT to become a more efficient and complete transit service provider.

Implementation Plan

Fiscal Year 2010-2011

- Implement the Phase I fixed-Route and demand-responsive service short-term improvements
- Renovate the Downtown Transfer Center
- Establish satellite transfer points at Golden East shopping mall and Oakwood shopping center
- Install bus shelters, signs, cameras, and fareboxes
- Purchase a new Orion VII Hybrid Diesel-Electric Bus
- Replace 17 vans
- Introduce electronic fareboxes
- Revise fare options

- Prepare a fleet replacement plan
- Improve marketing and information
- Begin the transit and pedestrian access program inventory

Fiscal Year 2011-2012

- Begin implementing the phase II fixed route and demand-responsive service improvements
- Continue installing bus shelters, signs, cameras, and fareboxes
- Replace seven vans
- Prepare and implement the rider involvement plan
- Continue the transit and pedestrian access program inventory

Fiscal Year 2012-2013

- Continue implementing the Phase II fixed-route and demand-responsive service improvements
- Replace six vans
- Continue the transit and pedestrian access program inventory

Fiscal Year 2013-2014

- Continue implementing the Phase II fixed-route and demand-responsive service improvements
- Purchase a new van for the US 64 service
- Replace six vans
- Conduct a feasibility study to upgrade the rural paratransit scheduling software
- Continue the transit and pedestrian access program inventory

Fiscal Year 2014-2015

- Continue implementing the Phase II fixed-route and demand-responsive service improvements
- Purchase new vans for the US 301 service

2. INTRODUCTION

PURPOSE OF STUDY

This study afforded the leaders and transportation providers in the City of Rocky Mount and Edgecombe and Nash Counties (the Study Area), North Carolina an opportunity to take an in-depth look at the public transit options currently in place, identify the optimal manner in which transit can meet the public's needs, and carefully identify where transit resources should be devoted over the plan periods.

The study reviewed the current performance and organizational direction of the Tar River Transit (TRT) and recommends alternative strategies for all aspects of TRT service, including operations, capital programming, marketing strategies, planning, facility relocation, and staffing that will increase mobility options for passengers and improve the efficiency and effectiveness of the organization and transportation services. This plan was developed through a public education and involvement process that included the general public, private and non-profit transportation providers, human service providers and targeted populations that include individuals with disabilities, low incomes, and limited-English proficiency.

STUDY VISION STATEMENT

Ultimately, the central vision of the study was to ensure that TRT develops a strategic plan that responds to the projected mobility needs of the general public and targeted populations in the Study Area, and that the plan provides direction for continuous improvement to achieve excellence in all aspects of service, delivery, and management.

STUDY GOALS

The study goals are as follows:

- To promote public transportation options that improves the quality of life of Edgecombe and Nash Counties citizens
- To provide safe and dependable transportation mobility options to the general public, low income individuals, elderly persons, and/or persons with disabilities
- To create a seamless public transportation network within the Study Area that provides service to all geographies, jurisdictions, and program areas
- To develop a defensible and cost-constrained implementation plan that utilizes results-based metrics to gauge effectiveness
- To support the full integration of federal, state, local, and private programs supporting public and human service transportation

- To improve the efficiency and effectiveness of federal, state, locally, and privately funded public transportation programs

Together, the goals support TRT's focus areas, including providing better service to riders, ensuring long-term stability of the transit system, building capability to expand, build TRT brand/image, and, finally, be a part of the decision-making process when it comes to transportation options.

BACKGROUND

Transportation is a key element in the evaluation of quality of life within a community. As such, providing transportation options that allow ease of movement to access social or recreational events, medical or social services, employment opportunities, educational resources, and retail or other activity destinations is a universal concern. Furthermore, transportation also has a direct impact on the economy and environment.

Successful transportation options include both private (personal vehicle, taxi/limousine service, charter bus service, etc) and public (bus service, paratransit service, rail service, etc.) options. Most private options are available in all communities, while public options are specifically tailored to a given community's needs. The public transportation options, often called transit, should be designed in a manner that provides mobility options to all residents, regardless of a particular resident's access to private options or other demographic characteristic (such as age, gender, race, disability).

Local Engagement

TRT operates a public transit network that offers both urban fixed-route service, within Rocky Mount City limits, and rural demand-responsive service, within the Study Area that includes Edgecombe and Nash Counties. TRT operates as an independent agency that is funded by the City of Rocky Mount, Edgecombe County, Nash County, North Carolina Department of Transportation (NCDOT), and Federal Transit Administration. TRT is overseen by two boards: a three-person governing board with representatives from the City of Rocky Mount (one city council member), Edgecombe County (one County Commissioner), and Nash County (one County Commissioner). The City's role has been to provide program administration, management oversight, policy development and implementation, and vehicle maintenance. TRT has one full-time Transit Administrator and one full-time Administrative Assistant. Service operations are provided through a contract with First Transit.

TRT, along with the City of Rocky Mount, Edgecombe County, Nash County, the Rocky Mount Urban Area Metropolitan Planning Organization (RMUMPO), the Upper Coastal Plain Rural Planning Organization (UCPRPO) and North Carolina Department of Transportation (NCDOT), acknowledge the importance of providing strong public transportation options.

In order to better serve the existing and future transit needs of Rocky Mount and Edgecombe and Nash County citizens, TRT decided to undertake this five-year Community Transportation Service Plan study.

NCDOT Community Transportation Service Plans

The North Carolina Department of Transportation (NCDOT) has recognized the value of Community Transportation Service Plans (CTSPs). In NCDOT's *CTSP and Regional Feasibility Study 2009 Program Packet*, the agency acknowledged that:

> 'CTSPs are crucial to ensuring that North Carolina community transportation systems are making a strategically planned response to the projected mobility needs of the general public and targeted populations in their service area. Plans review the current performance and organizational direction of the transit system and recommend alternative strategies of operating or managing that increase mobility options for passengers and improve the efficiency and effectiveness of the organization and transportation services.
>
> The goals of the planning process are to identify, evaluate, develop, recommend and implement strategies that provide planning elements for meaningful mobility options for the general public and targeted populations by allowing passengers to travel where and when they want and need to go. This community transportation plan must be developed through a public education and involvement process that includes the general public, private and non-profit transportation providers, human service providers and targeted populations that include individuals with low incomes and limited English proficiency (LEP). The result of this planning effort should produce an overall goal that the community can support.'

This CTSP will be the principle road map in accomplishing the following:

- Development and promotion of transit options that provide meaningful alternatives to citizens and connectivity of transportation services throughout the state
- Development and promotion of the full integration of the community transportation system's programs with other federal and state programs supporting public and human service transportation
- Support and promote the coordination of public transportation services across geographies, jurisdictions, and program areas for the development of a seamless transportation network.
- Improve the efficiency and effectiveness of federal/state funded transportation programs
- Support the provision of dependable mobility transportation options 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
- Support and encourage defensible, results-based budget requests and submissions from systems to NCDOT for funding

STUDY PROCESS

The study was directed by a Steering Committee that included representatives from: NCDOT Public Transportation Division, City of Rocky Mount, City of Rocky Mount Mayor's Commision, Edgecombe County, Nash County, TRT Administrator, TRT Staff, TRT Governing & Advisory Board, the Upper Coastal Plain RPO Edgecombe County Social Services, Nash County Social Services, Edgecombe Community College, Nash Community College, North Carolina Wesleyan

College, Golden East Crossing Mall, Tri-County Industries, Independent Living, Rollingwood Manor Apartments, representatives from neighborhood organizations such as Happy Hill, Holly Street community, West Haven/Englewood, Hillsdale, Y Community, Week Armstrong, Germantown, and local transit riders and residents. The study was undertaken by a consulting team from Martin/Alexiou/Bryson and Simpson Engineers & Associates, working with the Steering Committee, other transportation providers, and other stakeholders.

3. BACKGROUND INFORMATION

STUDY AREA

The study area, comprised of Edgecombe and Nash Counties, is approximately 1,050 square miles in combined area. The counties are located in the eastern coastal plain area of North Carolina, as shown on Figure 3.1. Regional vehicle access to the Study Area is provided along Interstate 95 (north/south), US Highway 64 (east/west) and along US Highway 301 (north/south), which intersect outside Rocky Mount. Rocky Mount is the principal and largest city within the study area and is located in both Nash and Edgecombe Counties. Tarboro is the county seat of Edgecombe County, while Nashville is the county seat of Nash County. The City of Rocky Mount is about 60 miles east of Raleigh, the state capital. Rocky Mount is centrally located between other eastern coastal plain cities, including Greenville (42 miles southeast), Goldsboro (53 miles south), and Fayetteville and Jacksonville (both 100 miles away southwest and south respectively). Rocky Mount is also about 70 miles east of the Triangle Region (Raleigh, Durham, and Chapel Hill).

As mentioned above, the study area is comprised of both Edgecombe and Nash counties. The municipalities located within the Study Area, as shown in Table 3.1, include:

TABLE 3.1
STUDY AREA JURISDICTIONS

Edgecombe	Nash
Rocky Mount	
Sharpsburg	
Whitakers	
Conetoe	Bailey
Leggett	Castalia
Macclesfileld	Dortches
Pinetops	Middlesex
Princeville	Momeyer
Tarboro	Nashville
Speed	Red Oak
	Spring Hope

REGIONAL CONTEXT

The study area is located in the Eastern Piedmont area of North Carolina, along the busy I-95 corridor, approximately mid-way between Washington D.C. and Columbia, South Carolina, as shown on Figure 3.2. Based on U.S. Bureau of the Census 2000 statistics, there were 55,606 people, 20,392 households, and 14,804 families residing in Edgecombe County, and 87,420 people, 33,644 households, and 23,920 families residing in Nash County. Combined, the study area was comprised of 143,036 people, 54,036 households, and 38,724 families. The entire study area is located within

the limits of the Upper Coastal Plain Rural Planning Organization (RPO) consisting of Edgecombe and Nash, as well as Johnston and Wilson Counties and the Rocky Mount Urban Area Metropolitan Planning Organization (MPO), as shown in Figure 3.3. The Rocky Mount Urban Area MPO covers an area of approximately 198 square miles and includes the City of Rocky Mount, City of Tarboro, Town of Nashville (added to the MPO after U.S. Census 2000 was conducted), and other portions of both Edgecombe and Nash Counties.

According to the 2000 Census, there were 55,893 people, 21,435 households, and 14,682 families residing in the City of Rocky Mount. A more recent NC Office of State Budget and Management July 2008 estimate of the Study Area population was 145,781 residents. The Study Area has experienced an overall modest increase in population in recent decades, namely 8.3 percent from 1980 to 1990 and 7.2 percent from 1990 to 2000. There has been a fairly significant slowdown in population increase in most recent years, with projected increase of only 2 percent from 2000 to 2008. Interestingly, Rocky Mount grew at a faster pace than the rest of the two counties in the Study Area (namely, Rocky Mount's population increased by around 18.7 percent in the 1980-1990 decade and around 14.1 percent in the 1990-2000 decade). Noticeably though, population growth has decreased sharply in recent years – in fact, Edgecombe County actually has lost population in the 1990-2000 decade (a small decrease of around 1.9 percent). The Study Area's projected population in July 2008 was at around 145,781 a 2 percent increase from 2000 levels, while Rocky Mount's projected July 2008 population was at 59,228, a 6 percent increase from the 2000 levels. The historical and projected demographics data for the Study Area are shown in Table 3.2.

TABLE 3.2
STUDY AREA POPULATION DATA

Location	1980	1990	Change+/- 1980-1990	2000	Change+/- 1990-2000	2008 (July)	Change+/- 2000-2008
City of Rocky Mount	41,283	49,000	18.7%	55,893	14.1%	59,228	6.0%
Edgecombe County	55,988	56,692	1.3%	55,606	-1.9%	51,800	-6.8%
Nash County	67,153	76,677	14.2%	87,385	14.0%	93,981	7.5%
Study Area	**123,141**	**133,369**	**8.3%**	**142,991**	**7.2%**	***145,781***	**2.0%**

Source: U.S. Census Bureau; NC Office of State Budget and Management

Figure 3.1 Study Area

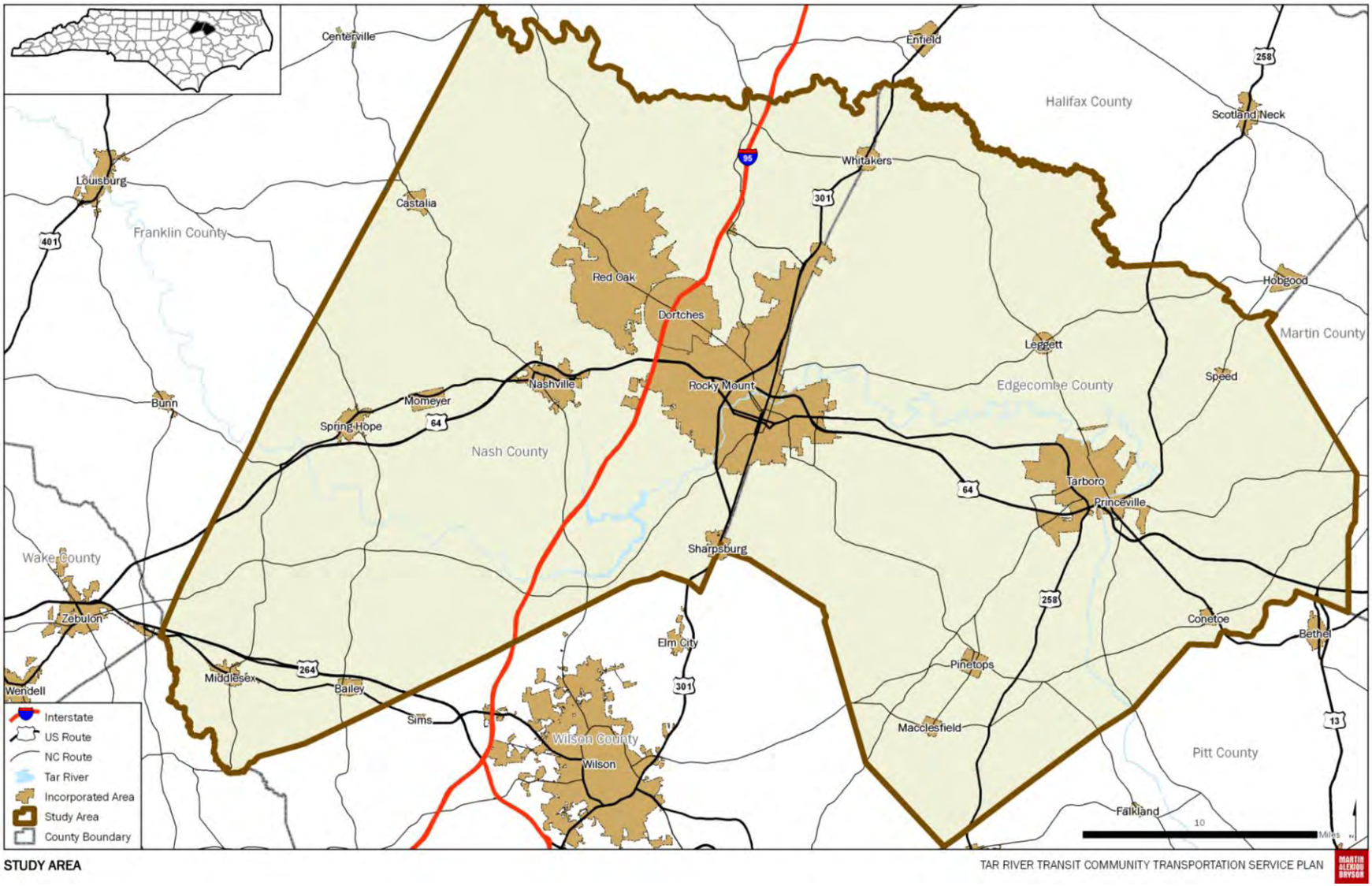


Figure 3.2 Regional Context

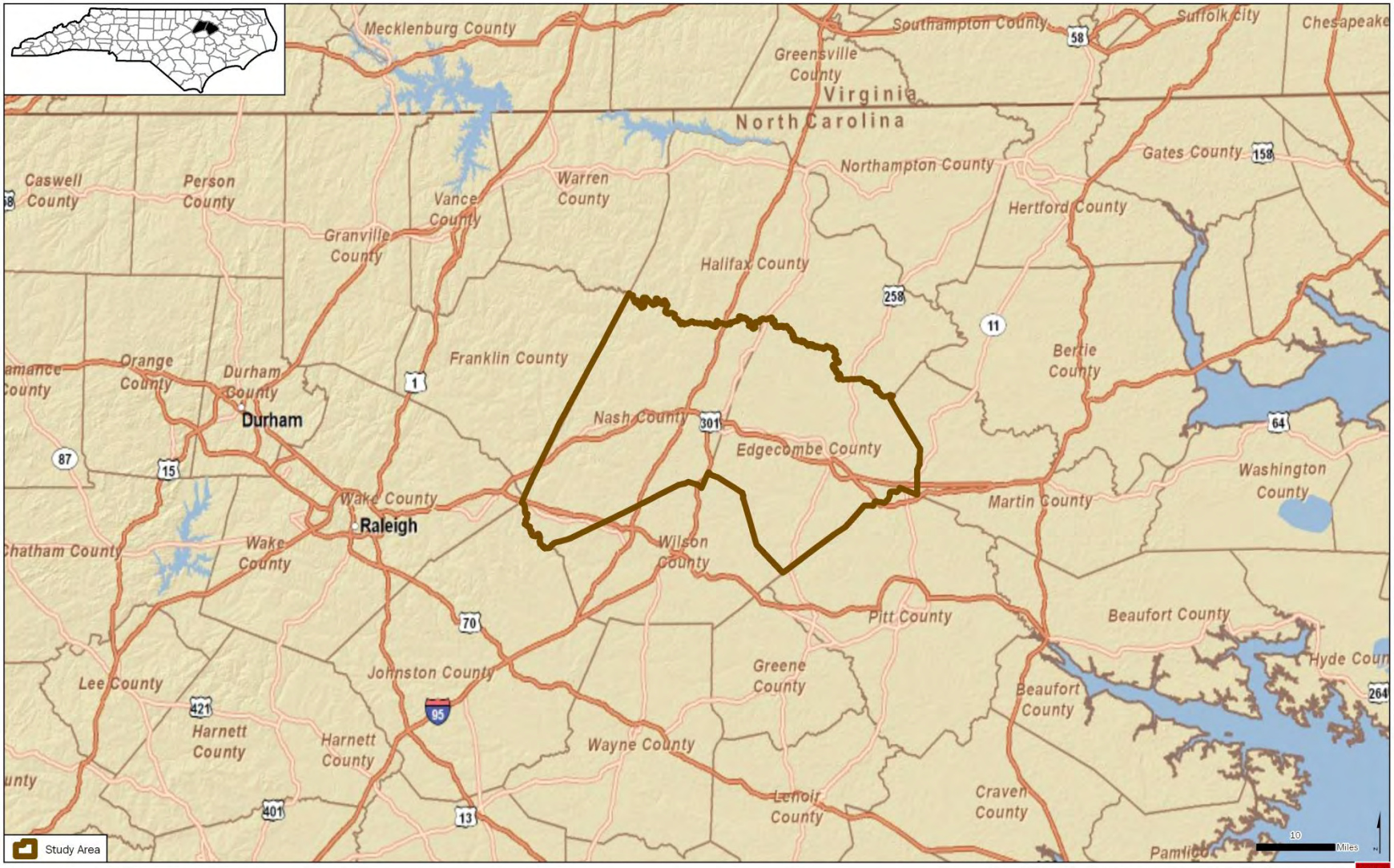
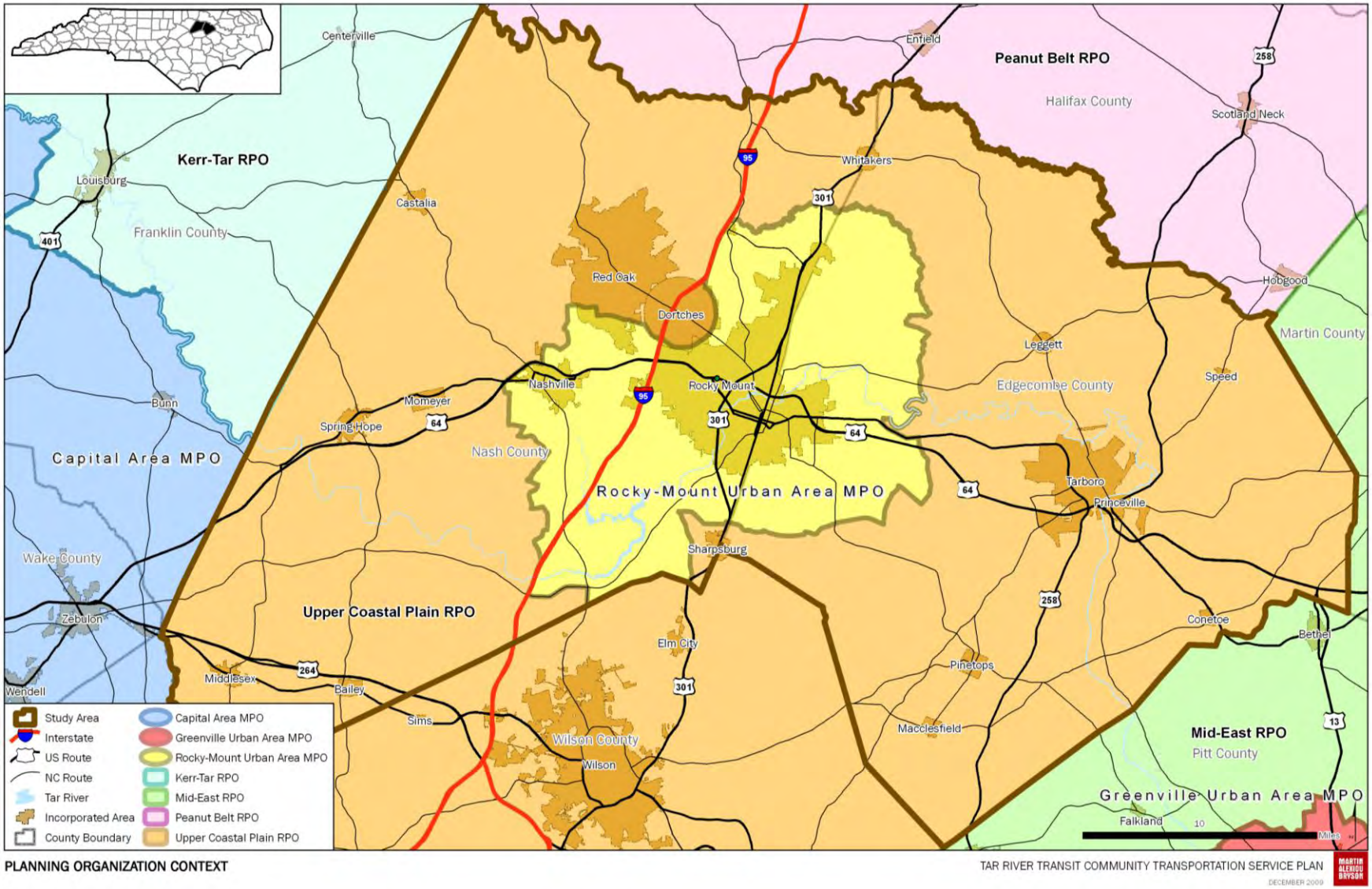


Figure 3.3 Regional Planning Organizations Context



HISTORICAL CONTEXT

Edgecombe County

Edgecombe County was established by a legislative act in 1741 from Bertie County. The County was named after Lord Edgecombe, an English nobleman. Although the Town of Enfield was the first county seat, Tarboro became the permanent county seat in 1764. Also in 1746, a part of Edgecombe County became Granville County, while in 1758 another part became Halifax County, and in 1777 yet another part became Nash County. Edgecombe solidified to its present dimensions in 1855 once the formation of Wilson County from parts of Edgecombe County, Johnston County, Nash County, and Wayne County reduced its original size. Edgecombe County was historically home to the Tuscarora Indians. The first settlers in the Edgecombe area arrived by 1726. Tarboro and the vicinity were settled about 1733, while the Town of Tarboro was incorporated in 1760. While hunting and raising livestock were the primary livelihood means at first, tobacco had become the most profitable crop and Edgecombe County became an agricultural powerhouse with not just tobacco, but also peanuts, cotton, soybeans, and small grains becoming important crops. The first cotton mill was established in Tarboro in 1881 and by 1891 Edgecombe County had established a sizable industrial base with four railways and three steamship lines.

Nash County

Nash County was formed in 1777 from the western part of Edgecombe County, named after General Francis Nash. Nashville, the county seat, was settled in 1780 and chartered in 1815. In 1855 parts of Nash County, Edgecombe County, Johnston County, and Wayne County were combined to form Wilson County, North Carolina. Akin to Edgecombe County, Nash County became one of North Carolina's leading farming areas and had experienced steady industrial growth in 19th century. Currently, only 2.4 percent of the total employment within the county is classified as agricultural despite the county ranking as number eight in terms of the area devoted to farmland among all North Carolina counties.

The City of Rocky Mount

The City of Rocky Mount is fairly unique in terms of its geopolitical location since it is located in both Edgecombe and Nash Counties. Located 60 miles east of Raleigh, Rocky Mount is the 15th largest city in North Carolina. Rocky Mount grew around the first post office that was established at the Falls of Tar River in 1816. The Wilmington-Weldon Railroad was built two miles east of the established mill in 1845 and became the main regional connection for Rocky Mount. Rocky Mount was incorporated as a Town in 1867 and was incorporated as a City in 1907. Notably, in 1871, the county line moved from Tar River to its present location in the center of the main tracks, which also marks the boundaries of Edgecombe and Nash Counties. The 20th century brought a rapid growth and diversification to the city. Colleges such as North Carolina Wesleyan College, Nash Community College and Edgecombe Community College were established in the 1960s, while the 1970s saw opening of the Nash General Hospital, a new campus for Nash Community College, recreational use of the reservoir on the Tar River, a new water plant, and the Rocky Mount-Wilson airport. The 1980s saw a construction of a new regional shopping mall – Golden East Crossing Mall. In 1992 the Rocky Mount Urban Area became the 17th Metropolitan Planning Organization (MPO) in North Carolina, expanded to include the Town of Nashville in 2002 The Rocky Mount Urban Area MPO

accounts for 45 percent of the population of Edgecombe and Nash Counties in its 198 square miles of land area. While the recent economic downturn has hit Rocky Mount particularly hard, the city continues to be an attractive place for newcomers particularly due to its convenient location nearby the busy I-95 corridor and proximity to the Triangle.

POPULATION DATA

Historic Population

The Study Area's total population in 2008 was 146,356. Table 3.3 and Figure 3.4 show 2008 population data for each consolidated place in both Edgecombe and Nash County, along with their trends since the 1990 and 2000 Census.

TABLE 3.3
STUDY AREA JURISDICTIONS

Consolidated Place	Population			Change in Population	
	1990	*2000*	*2008*	*1990-2000*	*2000-2008*
Bailey	553	670	684	21.2%	2.1%
Castalia	261	340	353	30.3%	3.8%
Conetoe	292	365	328	25.0%	-10.1%
Dortches	840	809	871	-3.7%	7.7%
Middlesex	730	838	858	14.8%	2.4%
Momeyer	N/A	291	303	N/A	4.1%
Nashville	3,617	4,309	4,538	19.1%	5.3%
Red Oak	280	2,723	2,923	872.5%	7.3%
Rocky Mount	**48,997**	**55,893**	**57,010**	**14.1%**	**2.0%**
Spring Hope	1,221	1,261	1,288	3.3%	2.1%
Tarboro	11,037	11,138	10,383	0.9%	-6.8%
Whitakers	860	799	773	-7.1%	-3.3%
Subtotal - Incorporated areas	68,688	79,436	80,312	15.6%	1.1%
Subtotal - Unincorporated areas	64,681	63,590	66,044	-1.7%	3.9%
Edgecombe County Total	56,692	55,606	52,682	-1.9%	-5.3%
Nash County Total	76,677	87,420	93,674	14.0%	7.2%
Total Study Area	**133,369**	**143,026**	**146,356**	**7.2%**	**2.3%**

Sources:
1 - 1990 U.S. Census Data: SF1 Table: P001
2 - 2000 U.S. Census Data: SF1 Table: P1
3 - U.S. Census Data: Population Estimates Program Data 2007 Tables: States, Counties, and Cities & Towns

As shown in the table, the City of Rocky Mount has a population of nearly six times higher than the next largest jurisdiction, Tarboro, the county seat of Edgecombe County. Population of the entire Study Area including Edgecombe and Nash County grew by approximately 7.2 percent between 1990 and 2000, but only 2.3 percent from 2000 to 2008 and is projected to grow by a modest 3.5 percent between 2000 and 2010. While most of the jurisdictions had substantial increases in population in the 1990-2000 decade, with the exception of Whitakers and Dortches, they experienced significant slowdown in population growth between 2000 and 2008, with Conetoe, Tarboro, and Whitakers actually losing population. Rocky Mount's 14 percent population increase from 1990 to 2000 decreased to a much more subdued 2 percent population growth in recent years of 2000-2008.

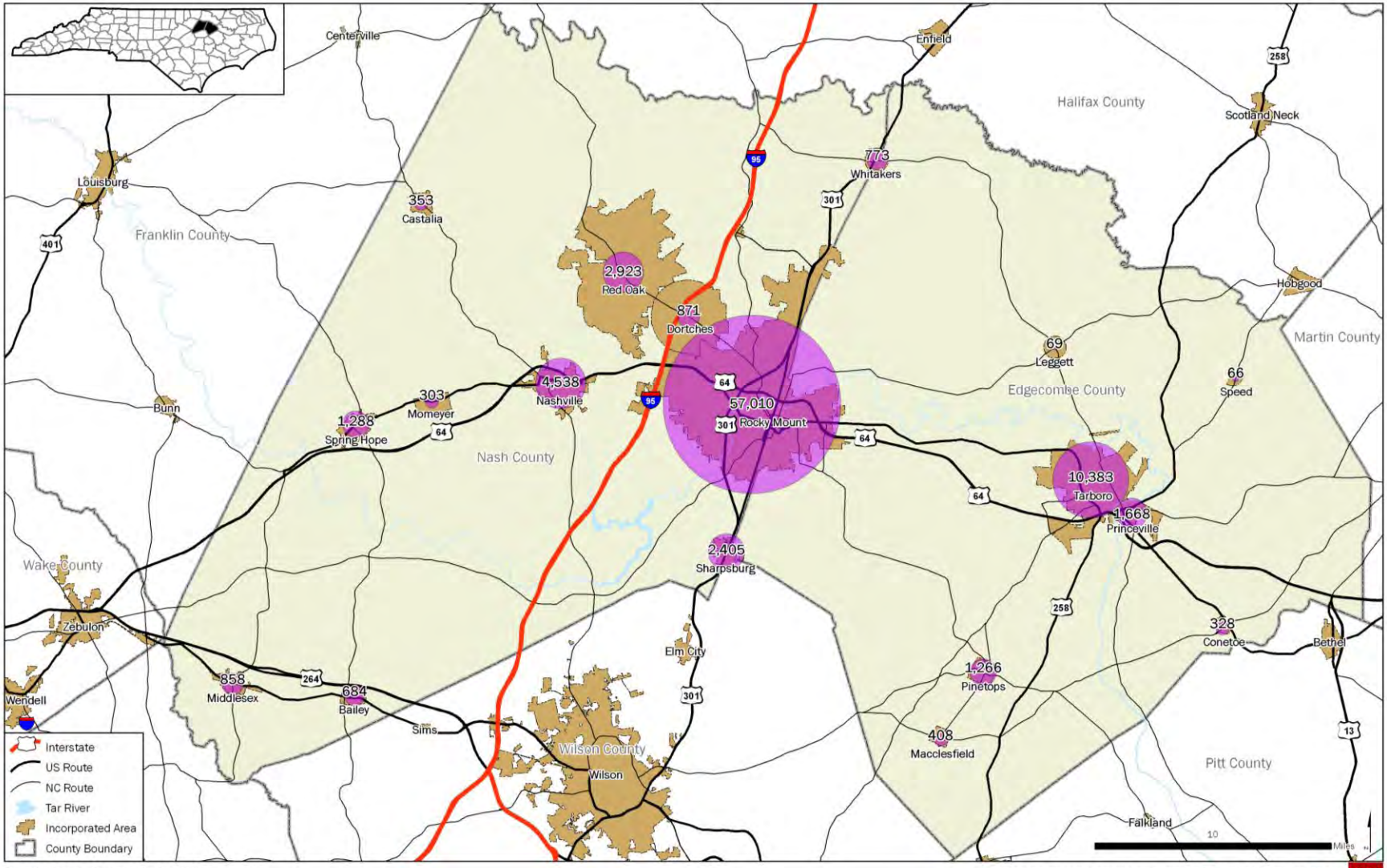
The entire Study Area population forecasts for 2010, 2020, and 2030 are shown in Table 3.4. The population is expected to reach 171,381 by 2030, representing almost a 29 percent increase over 1990 levels. Noticeably, while the population of Nash County is projected to increase nearly 57 percent from 1990 to 2030, the population of Edgecombe County is actually projected to decrease in that time period, with the most rapid decline of about 7.3 percent during the current 2000-2010 decade, and a much less pronounced projected population decline in the 2010-2020 time period.

TABLE 3.4
FORECAST STUDY AREA POPULATION GROWTH

Year	Population	Growth in Decade	% Growth in Decade	Growth Since 1990	% Growth Since 1990
Edgecombe County					
1990	56,692				
2000	55,606	-1,086	-1.9%	-1,086	-1.9%
2010	51,531	-4,075	-7.3%	-5,161	-9.1%
2020	51,223	-308	-0.6%	-5,469	-9.6%
2030	51,122	-101	-0.2%	-5,570	-9.8%
Nash County					
1990	76,677				
2000	87,420	10,743	14.0%	10,743	14.0%
2010	96,394	8,974	10.3%	19,717	25.7%
2020	108,955	12,561	13.0%	32,278	42.1%
2030	120,259	11,304	10.4%	43,582	56.8%
Total Study Area					
1990	133,369				
2000	142,991	9,622	7.2%	9,622	7.2%
2010	147,925	4,934	3.5%	14,556	10.9%
2020	160,178	12,253	8.3%	26,809	20.1%
2030	171,381	11,203	7.0%	38,012	28.5%

Source: North Carolina Office of State Budget and Management, County Projected Annual Populations 2000-2030

Figure 3.4 Study Area Population Data (2008)



TRANSIT DEPENDENT POPULATIONS

Transit system ridership is drawn largely from various groups of persons that make up a population that is often called "transit dependent." This category represents members of a community that have very few or no private transportation options available, due to age, disability, economic status, etc. There is often considerable overlap between the groups that make up the transit dependent population, which include youths, seniors, mobility impaired persons, persons with limited English proficiency, persons who live below the poverty line, and persons residing in zero- or one-vehicle households. The figures mapping these groups are presented at the conclusion of this section.

Based on data from the 2000 Census (which represents the most recent, detailed data set for the area), information about the number and location of transit dependent persons was evaluated at the census tract block group level. The locations of the tract block groups for the Study Area including Edgecombe County and Nash County and the City of Rocky Mount are shown in Figure 3.5 and Figure 3.6, respectively.

Total Population

As indicated in Table 3.2, the total population of the Study Area was estimated at 142,991 in 2000. This translates to a population density of approximately 136 persons per square mile, as seen in Figure 3.7. The Study Area's population density is approximately 17 percent lower than the statewide average of 163 persons per square mile. The City of Rocky Mount had a population density of 1,571 persons per square mile in 2000 (Figure 3.8). In general, the areas with the highest population density in the Study Area are located in and around Rocky Mount, as well as in Tarboro and Nashville.

Table 3.5 and Figure 3.9 show the average household size by tract block group in the Study Area, an alternative means of measuring population density. Figure 3.10 depicts the same data for the City of Rocky Mount itself. The average household size in the Study Area is about 2.58, which is slightly higher than the state average of 2.48. As seen in Table 3.5, the Study Area's average household size is approximately 9 percent higher than average household size in Rocky Mount. In terms of the average number of households per square mile, Rocky Mount has a much higher household density than both the Study Area overall and the State of North Carolina, which points out the rural character of the Study Area outside of the urbanized centers of Rocky Mount and Tarboro.

TABLE 3.5
AVERAGE HOUSEHOLD SIZE IN THE STUDY AREA

Location	Average Household Size	Total Number of Households	Area in Sq. miles	Average Households per Sq. mile
City of Rocky Mount	2.36	21,434	77.0	278.4
Edgecombe County	2.65	20,392	506.5	40.3
Nash County	2.53	33,644	542.6	62.0
Study Area	2.58	54,036	1,049.1	51.5
North Carolina	2.48	3,132,013	49,353.3	63.5
Source: 2000 U.S. Census Data				

Youth

As indicated in Table 3.6, the total youth population (persons aged 10-15) in the entire Study Area is 10,795 (7.5 percent of the total population), or a population density of 10.3 persons per square mile (Figure 3.11). This group typically has a strong propensity to use fixed-route public transportation services, as they are old enough to travel independently but too young to drive a private automobile. In general, the areas with the highest density of youths are in the City of Rocky Mount, more precisely the areas immediately around downtown, as well as in East and South Rocky Mount (see Figure 3.12).

TABLE 3.6
YOUTH POPULATION IN THE STUDY AREA

Location	Youth (Age 10-14)	Total Population	Area in Sq. miles	Average Youth Density per Sq. mile	Youth % of Population
City of Rocky Mount	4,495	55,982	77.0	58.4	8.0%
Edgecombe County	4,442	55,606	506.5	8.8	8.0%
Nash County	6,353	87,420	542.6	11.7	7.3%
Study Area	10,795	143,026	1,049.1	10.3	7.5%
North Carolina	551,367	8,049,313	49,353.3	11.2	6.8%
Source: 2000 U.S. Census Data					

Seniors

As indicated in Table 3.7, the total senior population (persons age 60 and over) in the entire Study Area is 23,717 (15.8 percent of the total population), or a population density of 22.6 persons per square mile (Figure 3.13). This group typically has a strong propensity to use both fixed-route and demand-responsive public transportation services, as may have economic, medical, or other issues that limit independent travel by private automobile. In general, the areas with the highest density of seniors are in the City of Rocky Mount (see Figure 3.14) as well as the City of Tarboro.

TABLE 3.7
SENIOR POPULATION IN THE STUDY AREA

Location	Seniors (Age 60+)	Total Population	Area in Sq. miles	Average Senior Density per Sq. mile	Senior % of Population
City of Rocky Mount	9,472	55,982	77.0	123.0	16.9%
Edgecombe County	9,357	55,606	506.5	18.5	16.8%
Nash County	14,360	87,420	542.6	26.5	16.4%
Study Area	23,717	143,026	1,049.1	22.6	16.6%
North Carolina	1,292,553	8,049,313	49,353.3	26.2	16.1%

Source: 2000 U.S. Census Data

Mobility-Impaired Persons

As indicated in Table 3.8, the total mobility-impaired population in the Study Area (persons having a health condition lasting more than six months that makes it difficult to go outside the home alone) is 32,295 (22.6 percent of the total population), or a population density of 30.8 persons per square mile (Figure 3.15). This group typically has a strong propensity to use both fixed-route and demand-responsive public transportation services, though mobility-impaired persons typically favor the use of the demand-responsive service. The areas with the highest density of mobility-impaired persons are in the City of Rocky Mount, particularly in the areas immediately around downtown, north Rocky Mount and west Rocky Mount (around Halifax Crossing), (see Figure 3.16), and Tarboro.

TABLE 3.8
MOBILITY-IMPAIRED POPULATION IN THE STUDY AREA

Location	Mobility-Impaired Population	Total Population	Area in Sq. miles	Mobility-Impaired Persons Density per Sq. mile	Mobility-Impaired - % of Population
City of Rocky Mount	12,116	55,982	77.0	157.4	21.6%
Edgecombe County	13,517	55,606	506.5	26.7	24.3%
Nash County	18,778	87,420	542.6	34.6	21.5%
Study Area	32,295	143,026	1,049.1	30.8	22.6%
North Carolina	1,540,365	8,049,313	49,353.3	31.2	19.1%

Source: 2000 U.S. Census Data

Limited English

As indicated in Table 3.9 and Figure 3.17 the total limited-English population in the Study Area (persons who do not primarily speak English at home) is 6,373 (4.4 percent of the total population), or a population density of 6.1 persons per square mile. This group typically has a strong propensity to use both fixed-route and demand-responsive public transportation services, as they may not be able to qualify for a driver's license due to language barriers. Limited English persons are more likely

to use the fixed-route service, often because of the increased difficulty of communicating during the scheduling of demand-responsive service. Additionally, foreign-born persons, especially from Central and South America, have typically used public transportation in their home country. The largest concentration of limited-English population is in Rocky Mount, and particularly areas around downtown (see Figure 3.18).

TABLE 3.9
LIMITED ENGLISH POPULATION IN THE STUDY AREA

Location	Limited English Population	Total Population	Area in Sq. miles	Limited English Persons Density per Sq. mile	Limited English- % of Population
City of Rocky Mount	2,066	55,982	77.0	26.8	3.7%
Edgecombe County	2,224	55,606	506.5	4.4	4.0%
Nash County	4,149	87,420	542.6	7.6	4.7%
Study Area	6,373	143,026	1,049.1	6.1	4.4%
North Carolina	587,756	8,049,313	49,353.3	11.9	7.3%

Source: 2000 U.S. Census Data

Poverty

As indicated in Table 3.10 and Figure 3.19, the total persons who live below the poverty line population in the Study Area is 15,097 (13.3 percent of the total population), or a population density of 27.1 persons per square mile. This group typically has a strong propensity to use both fixed-route and demand-responsive public transportation services, since many are unable to afford to buy and maintain a private automobile. In general, the areas with the highest density of persons below the poverty line are in the City of Rocky Mount proper, particularly in the areas immediately around downtown, north Rocky Mount and west Rocky Mount (the area around Halifax Crossing), (see Figure 3.20), but also in Tarboro. Notably, the areas of concentrated persons living below the poverty line within the Study Area very closely overlap areas with high concentration of mobility-impaired residents.

TABLE 3.10
BELOW-POVERTY POPULATION IN THE STUDY AREA

Location	Below-Poverty Population	Total Population	Area in Sq. miles	Below-Poverty Population Density per Sq. mile	Below-Poverty -% of Population
City of Rocky Mount	10,992	55,982	77.0	142.8	19.6%
Edgecombe County	10,683	55,606	506.5	21.1	19.2%
Nash County	11,478	87,420	542.6	21.2	13.1%
Study Area	22,161	143,026	1,049.1	21.1	15.5%
North Carolina	958,667	8,049,313	49,353.3	19.4	11.9%

Source: 2000 U.S. Census Data

Zero-Vehicle Households

As indicated in Table 3.11 and Figure 3.21, the total number of households without access to a personal vehicle in the Study Area is 5,946 (11 percent of the total households), or a density of 5.7 households per square mile. The percentage of zero-vehicle households is nearly twice as high in the City of Rocky Mount (14.1 percent) as the State of North Carolina (7.5 percent). This group typically has a strong propensity to use both fixed-route and demand-responsive public transportation services, since they do not have access to an operable private automobile. In general, the areas with the highest density of households without access to a personal vehicle are in the City of Rocky Mount itself (Figure 3.22), particularly around downtown.

TABLE 3.11
ZERO-VEHICLE HOUSEHOLDS IN THE STUDY AREA

Location	Zero-vehicle Households	Total Households	Area in Sq. miles	Zero-vehicle Households Density per Sq. mile	Zero-vehicle Households- % of all Households
City of Rocky Mount	3,014	21,434	77.0	39.1	14.1%
Edgecombe County	3,008	20,392	506.5	5.9	14.8%
Nash County	2,938	33,644	542.6	5.4	8.7%
Study Area	5,946	54,036	1,049.1	5.7	11.0%
North Carolina	235,339	3,132,013	49,353.3	0.1	7.5%

Source: 2000 U.S. Census Data

One-Vehicle Households

As indicated in Figure 3.11 and Figure 3.23, the total households with access to only one personal vehicle in the Study Area is 17,586 (32.5 percent of the total households), or a density of 16.8 households per square mile. This group typically has a strong propensity to use both fixed-route and demand-responsive public transportation services, since the household private automobile is shared, particularly if a household member uses the sole vehicle during the day to travel to and from work. In general, the areas with the highest density of households with access to only one personal vehicle are in the City of Rocky Mount (see Figure 3.24), as well as the City of Tarboro.

TABLE 3.12
ONE-VEHICLE HOUSEHOLDS IN THE STUDY AREA

Location	One-vehicle Households	Total Households	Area in Sq. miles	One-vehicle Households Density per Sq. mile	One-vehicle Households- % of all Households
City of Rocky Mount	7,666	21,434	77.0	99.6	35.8%
Edgecombe County	7,269	20,392	506.5	14.4	35.6%
Nash County	10,317	33,644	542.6	19.0	30.7%
Study Area	17,586	54,036	1,049.1	16.8	32.5%
North Carolina	1,010,563	3,132,013	49,353.3	0.3	32.3

Source: 2000 U.S. Census Data

Figure 3.5 Study Area U.S. Census Block Groups (2000)

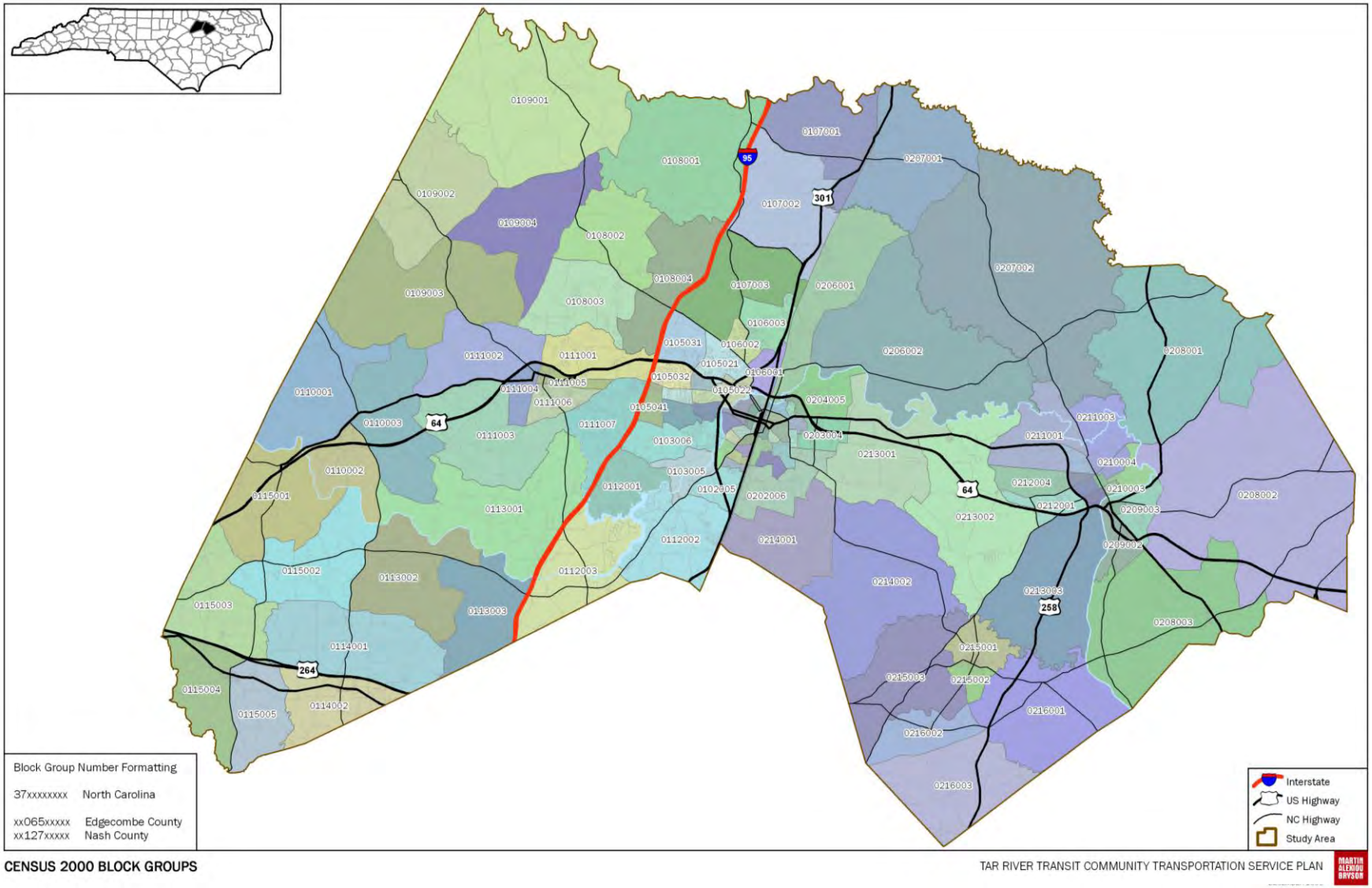


Figure 3.6 City of Rocky Mount U.S. Census Block Groups (2000)

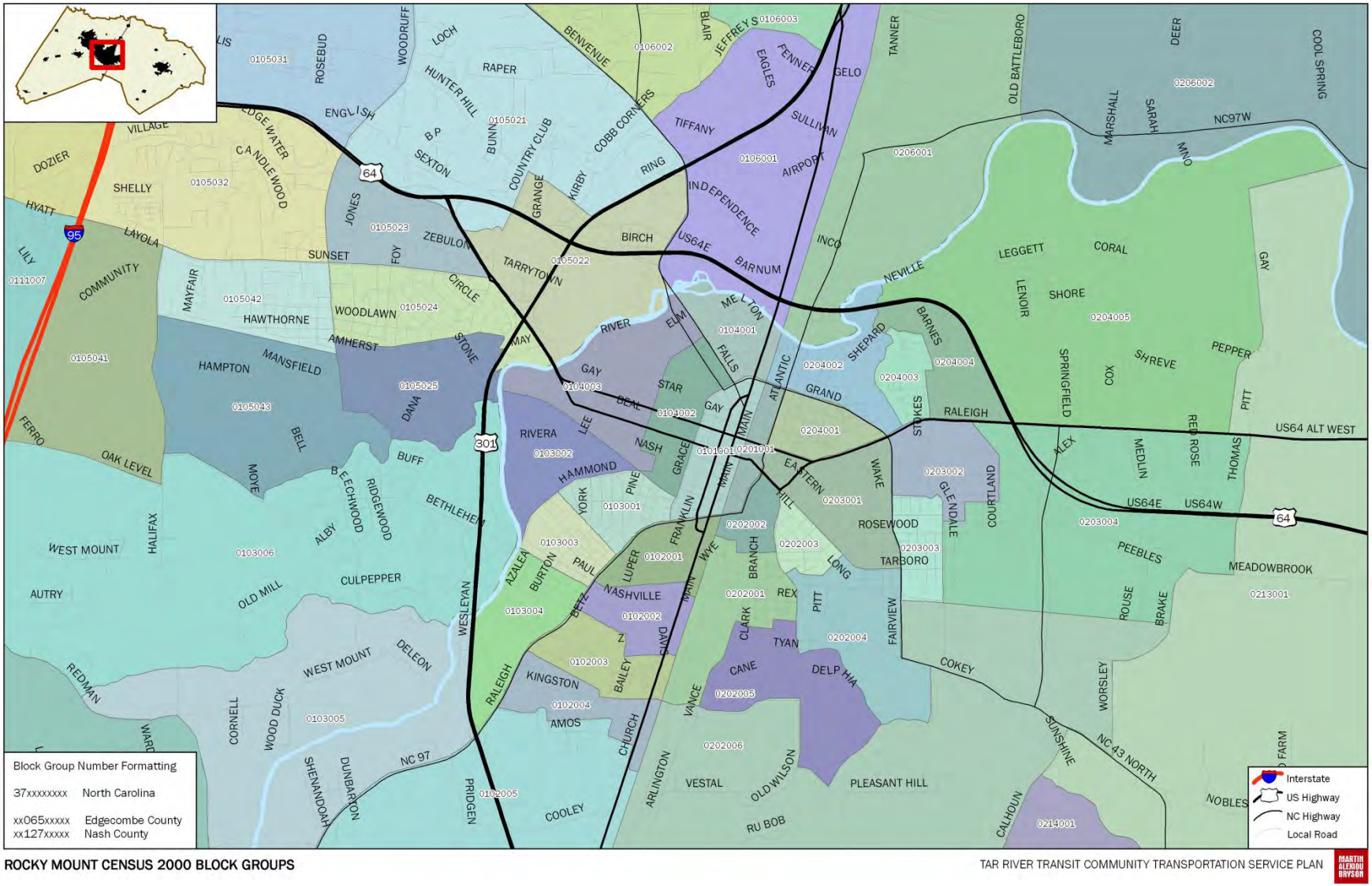


Figure 3.7 Study Area Population Density

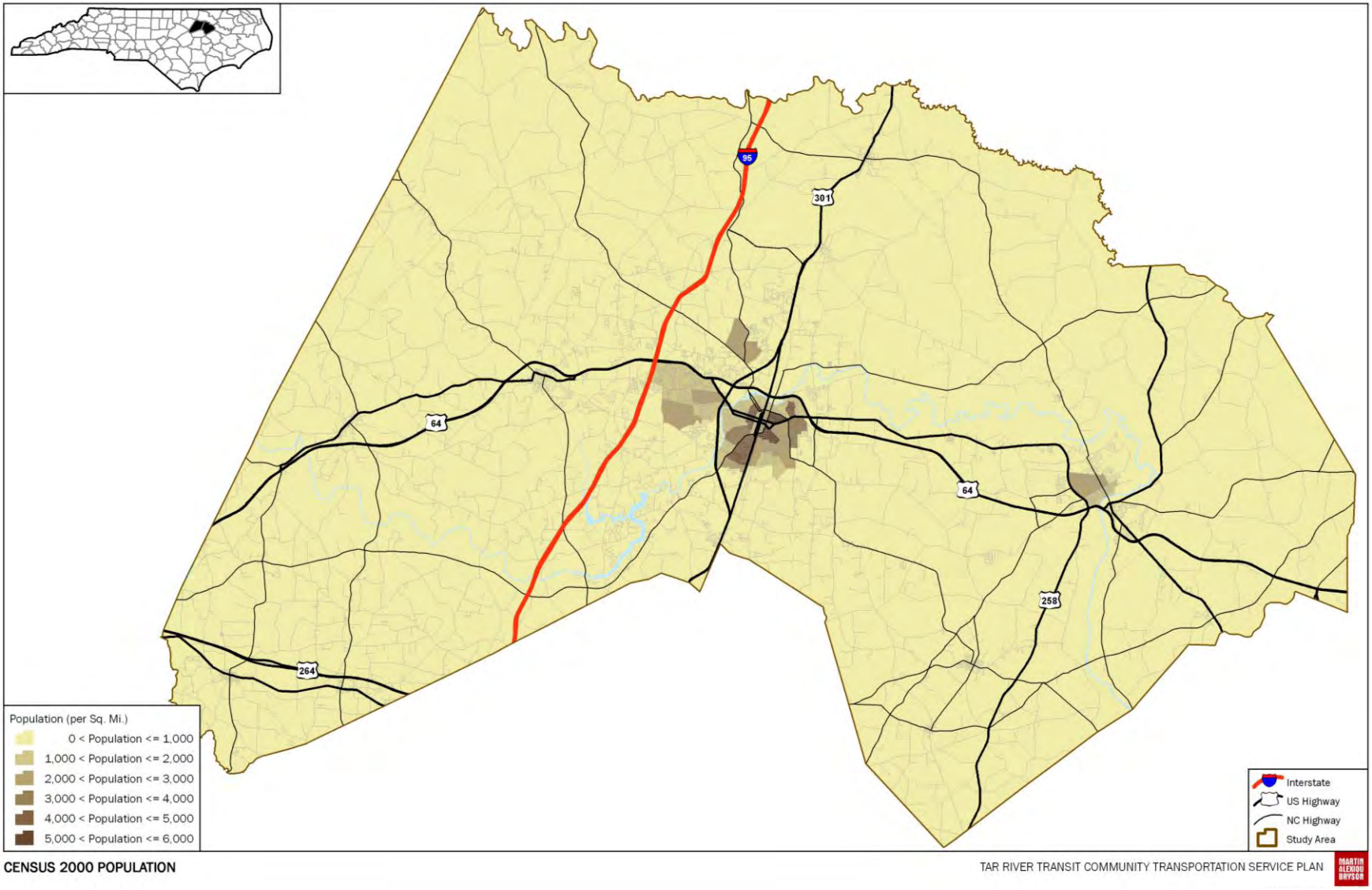


Figure 3.8 City of Rocky Mount Population Density

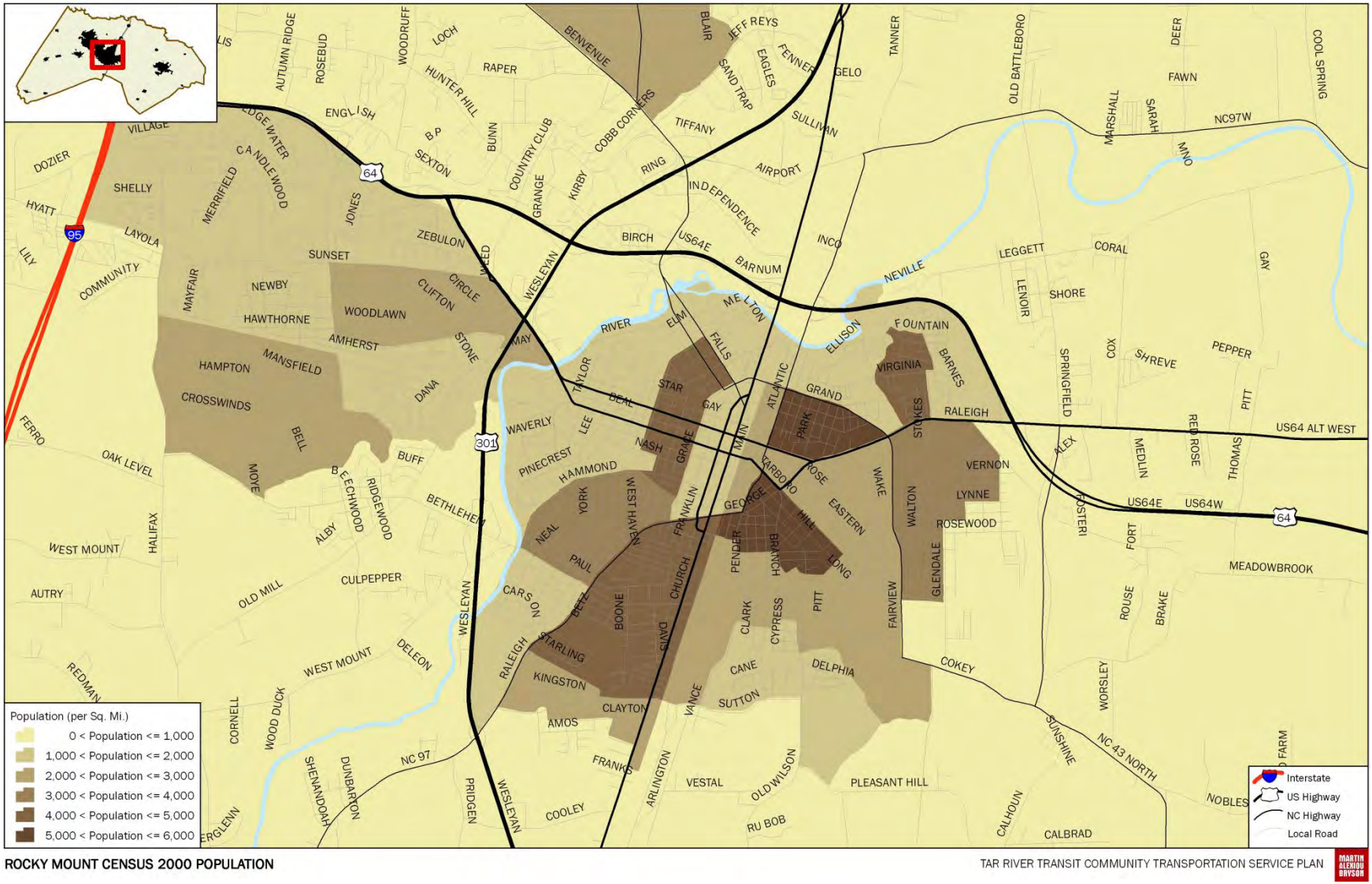


Figure 3.9 Study Area Average Household Size

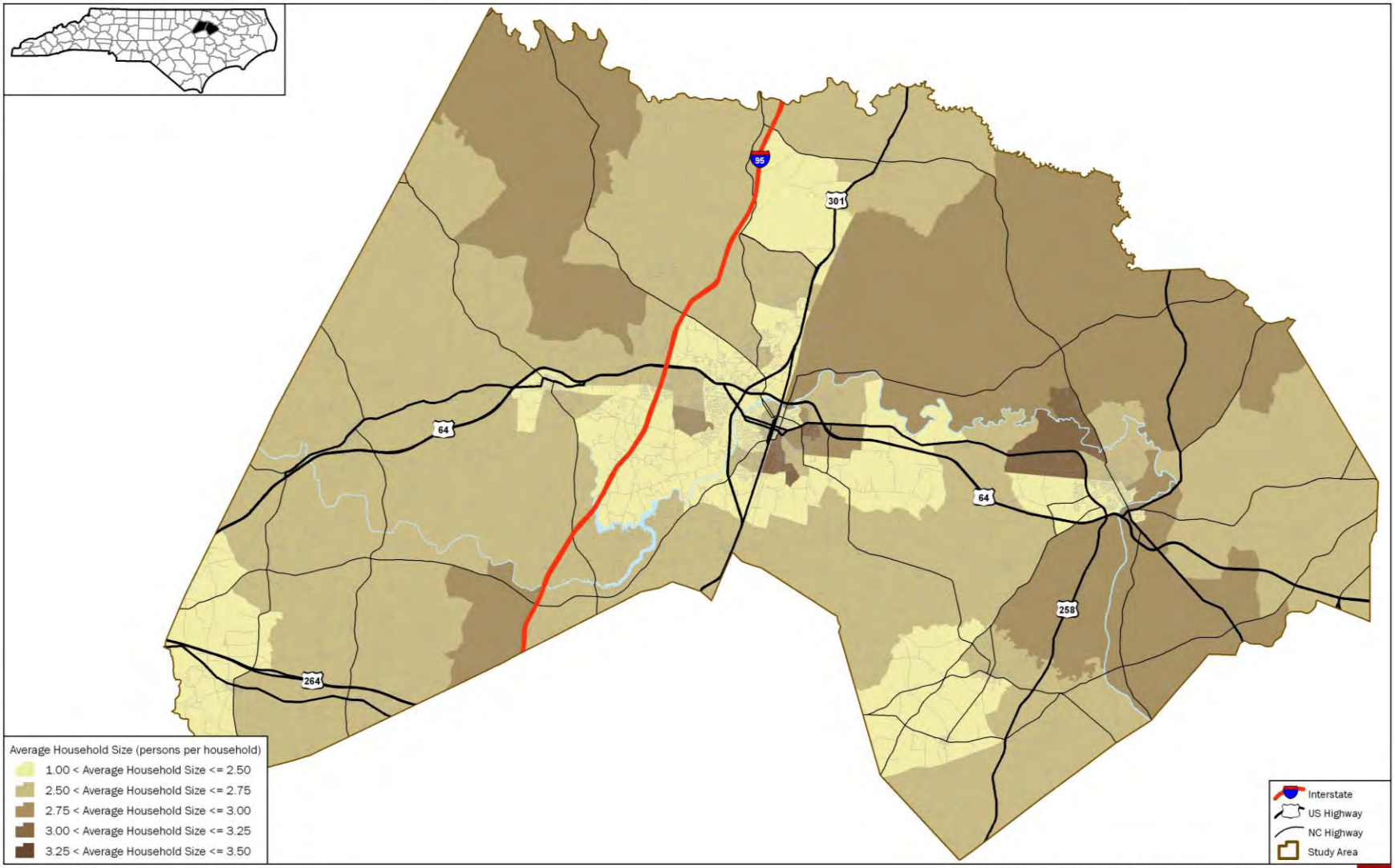


Figure 3.10 City of Rocky Mount Average Household Size

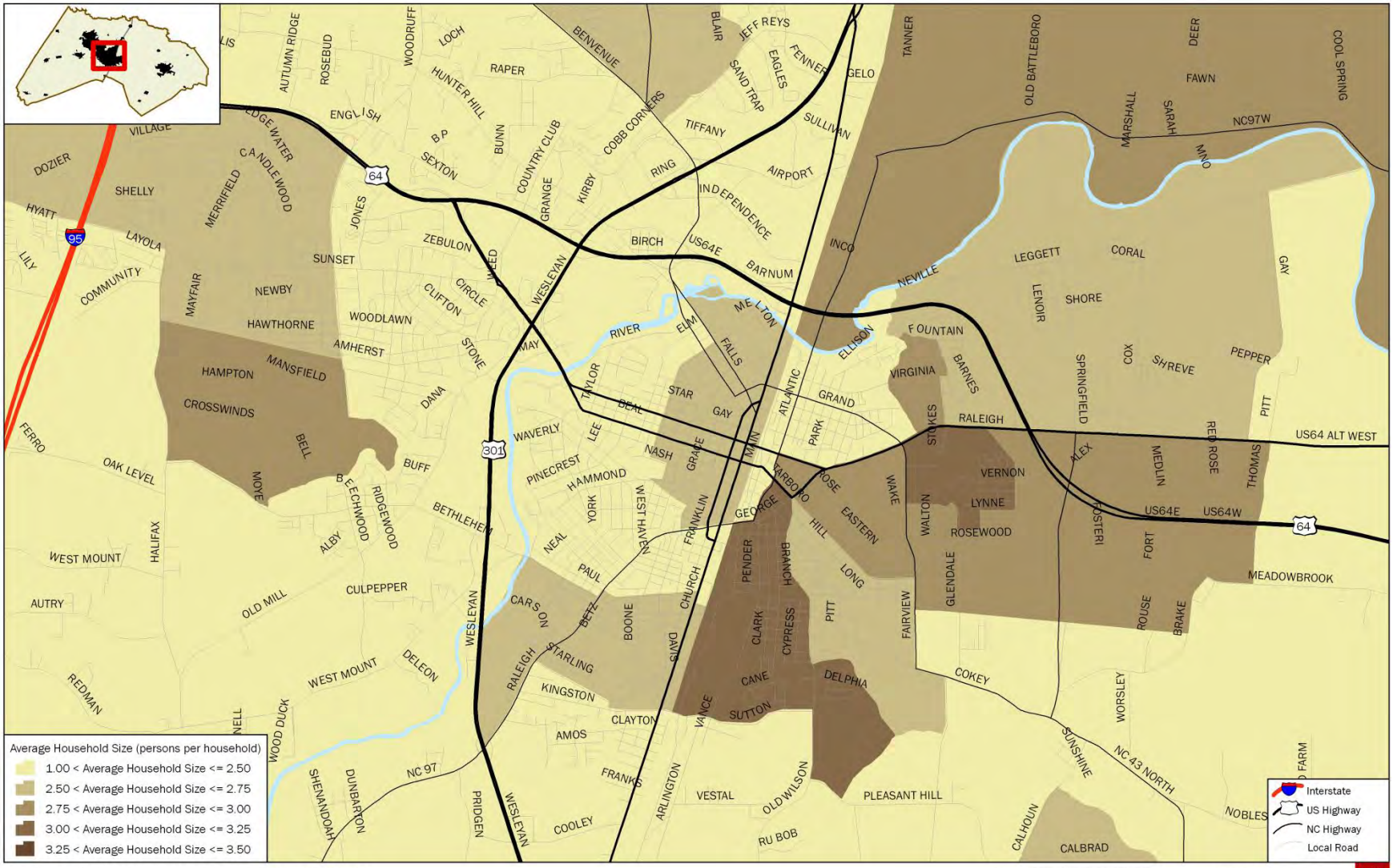


Figure 3.11 Study Area Youth Population Density

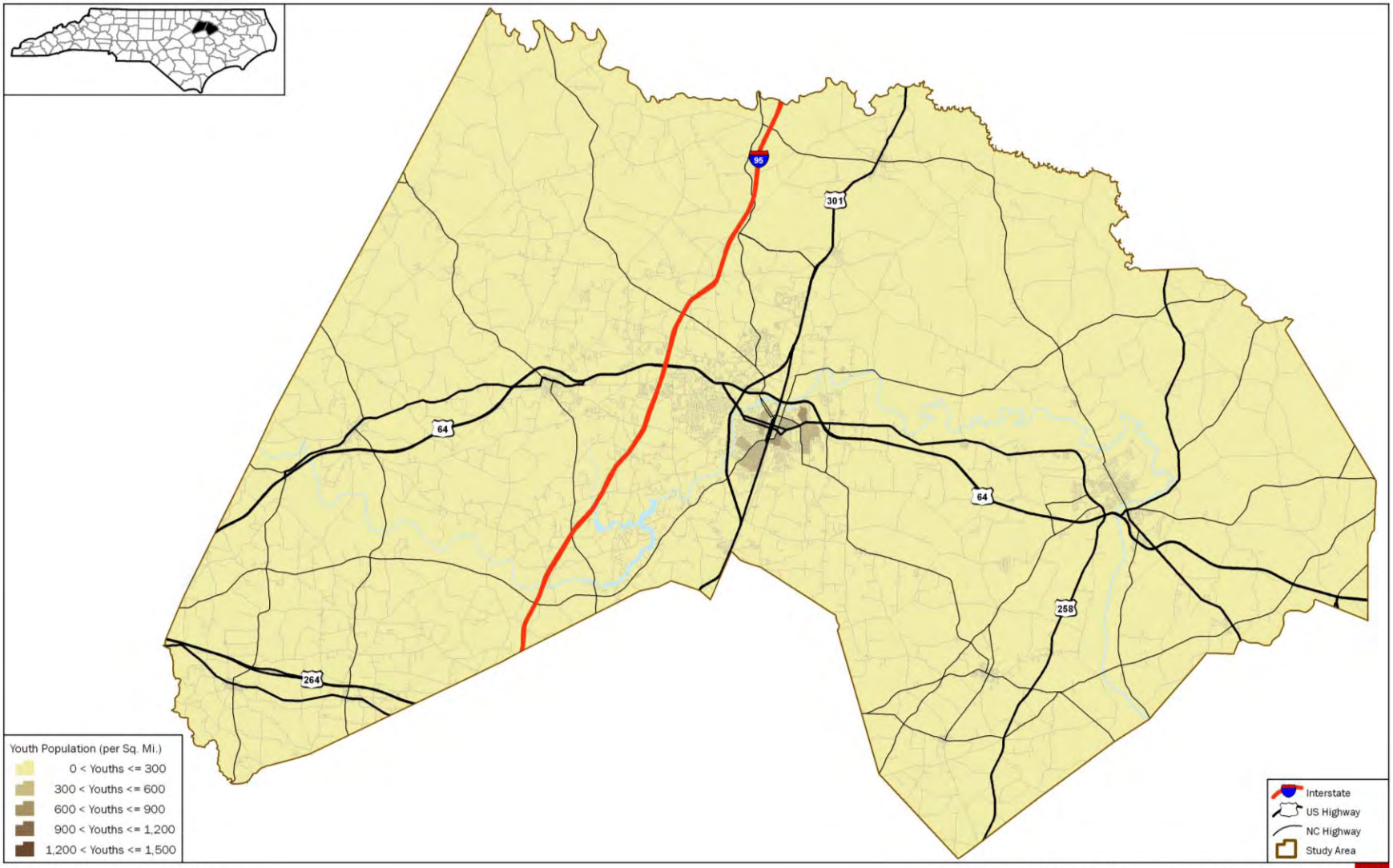


Figure 3.12 City of Rocky Mount Youth Population Density

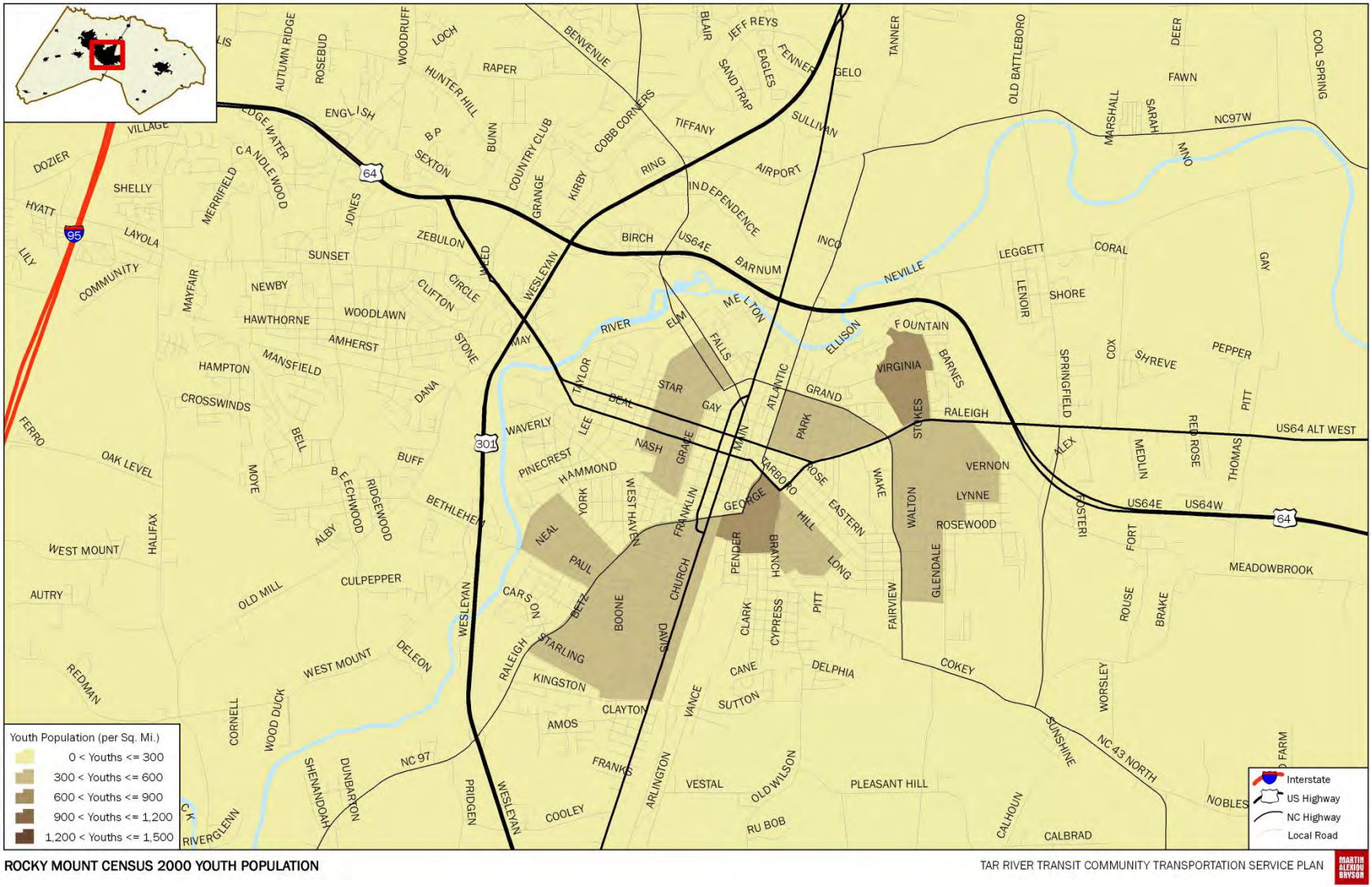


Figure 3.13 Study Area Seniors Population Density

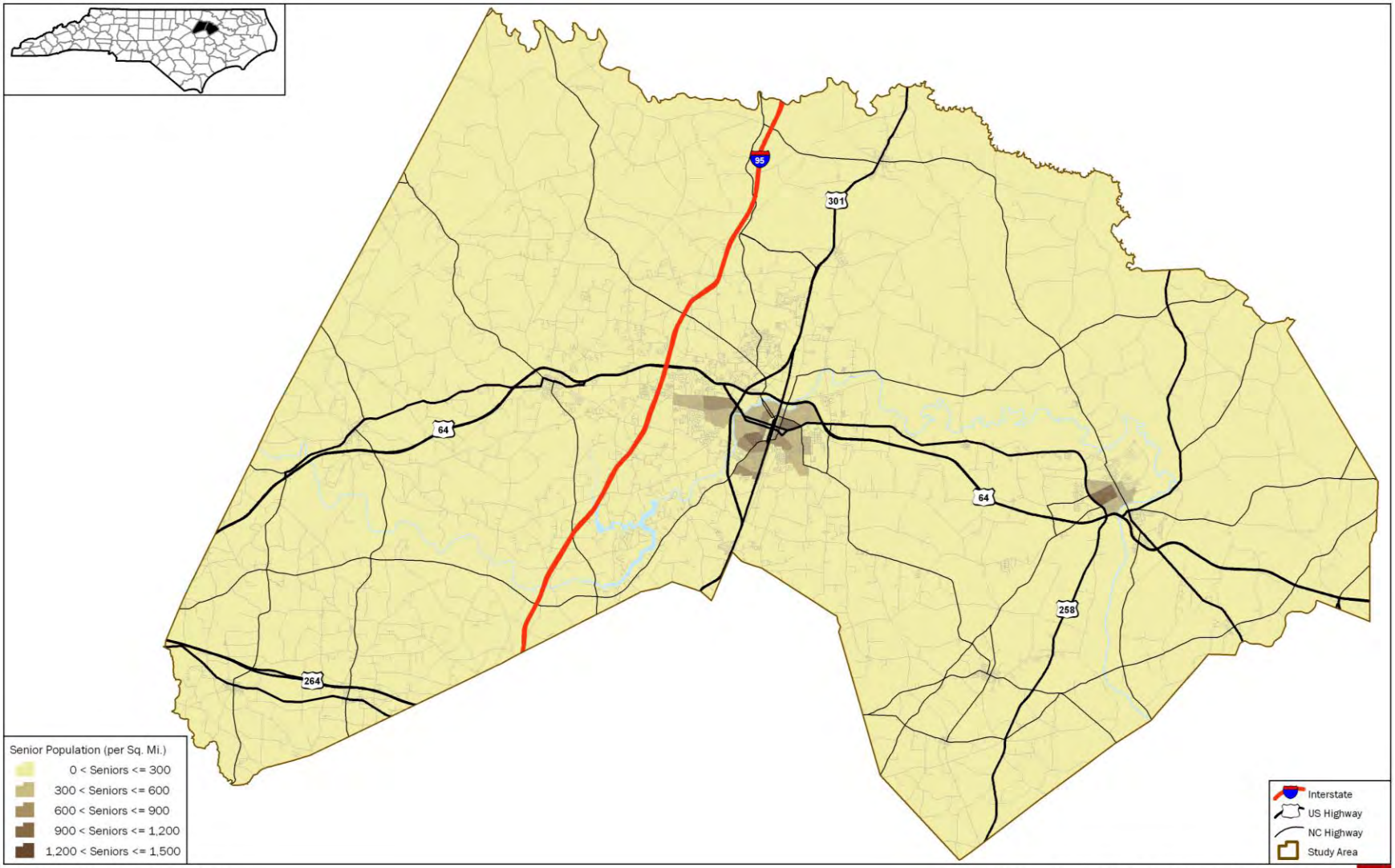


Figure 3.14 City of Rocky Mount Seniors Population Density

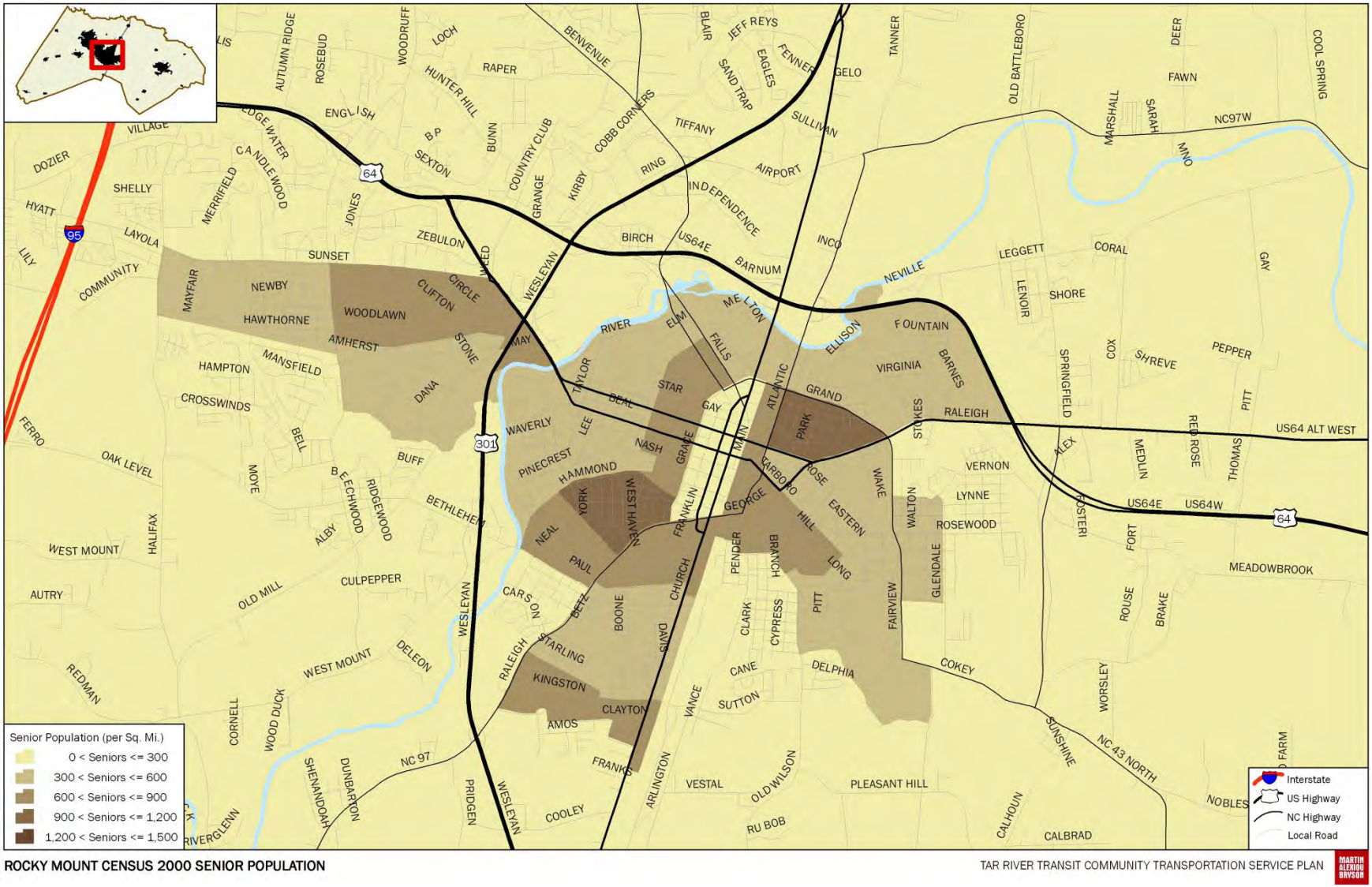


Figure 3.15 Study Area Mobility-Impaired Population Density

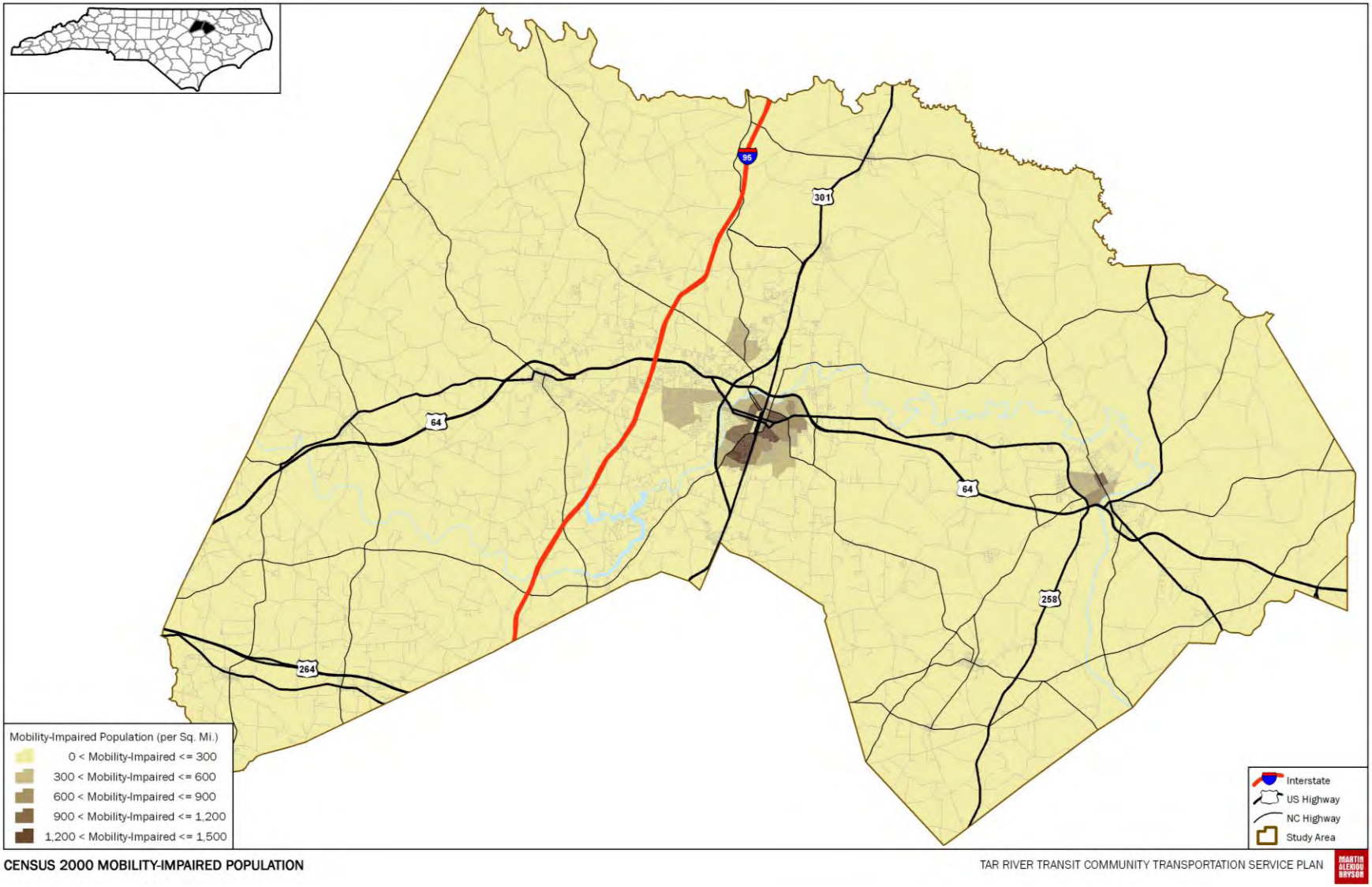


Figure 3.16 City of Rocky Mount Mobility-Impaired Population Density

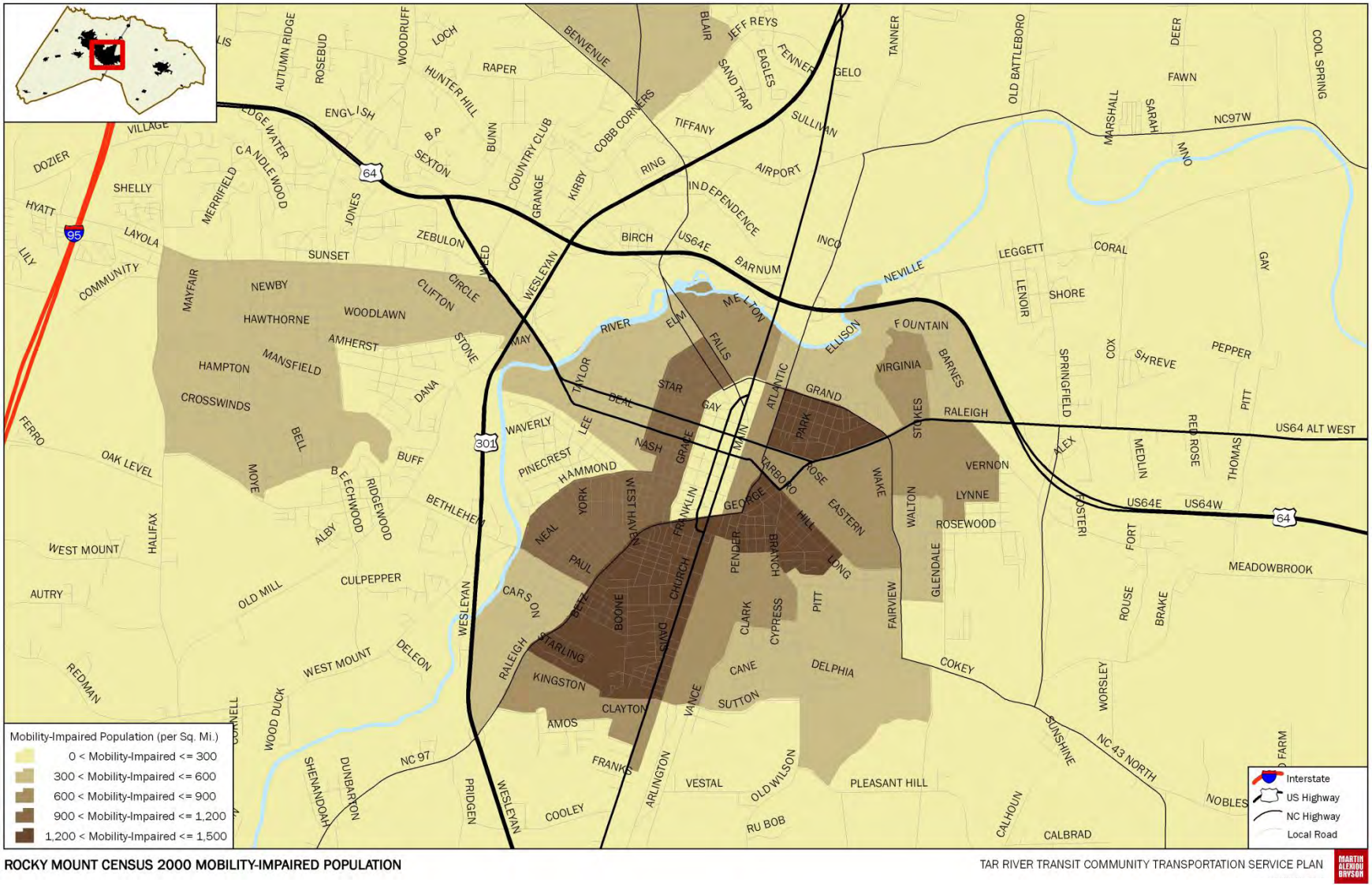


Figure 3.17 Study Area Limited-English Population Density

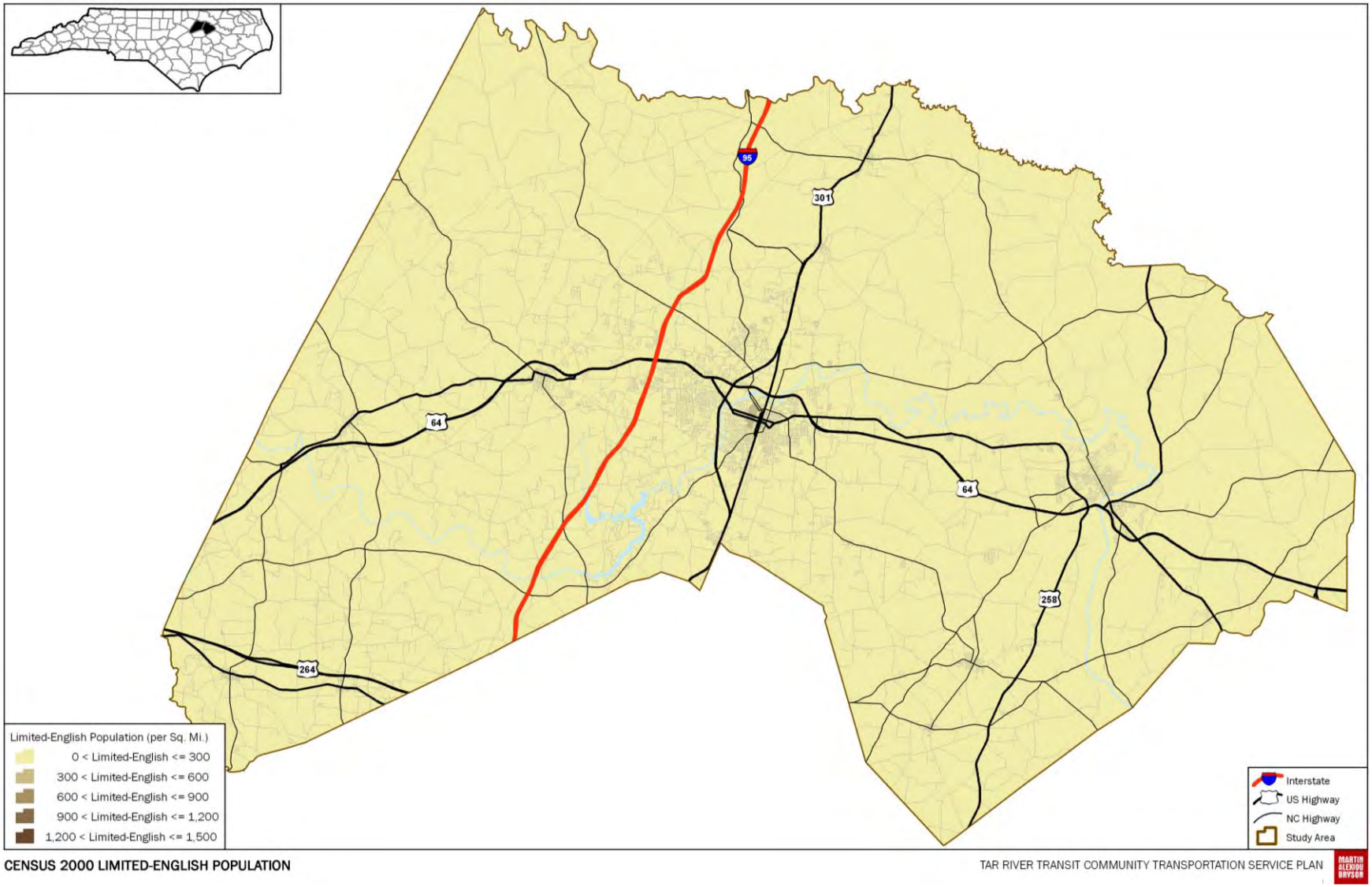


Figure 3.18 City of Rocky Mount Limited-English Population Density

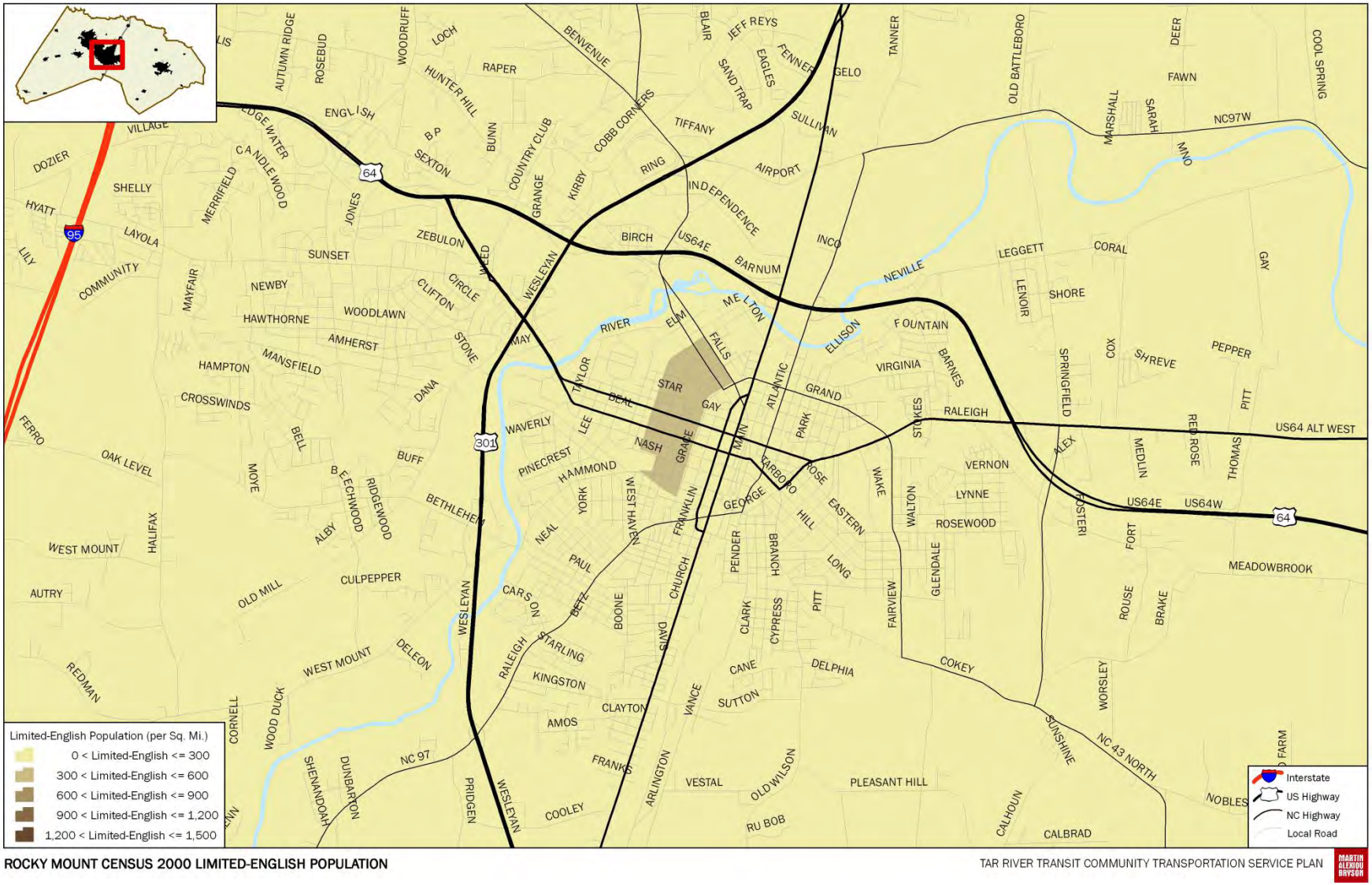


Figure 3.19 Study Area Below-Poverty Population Density

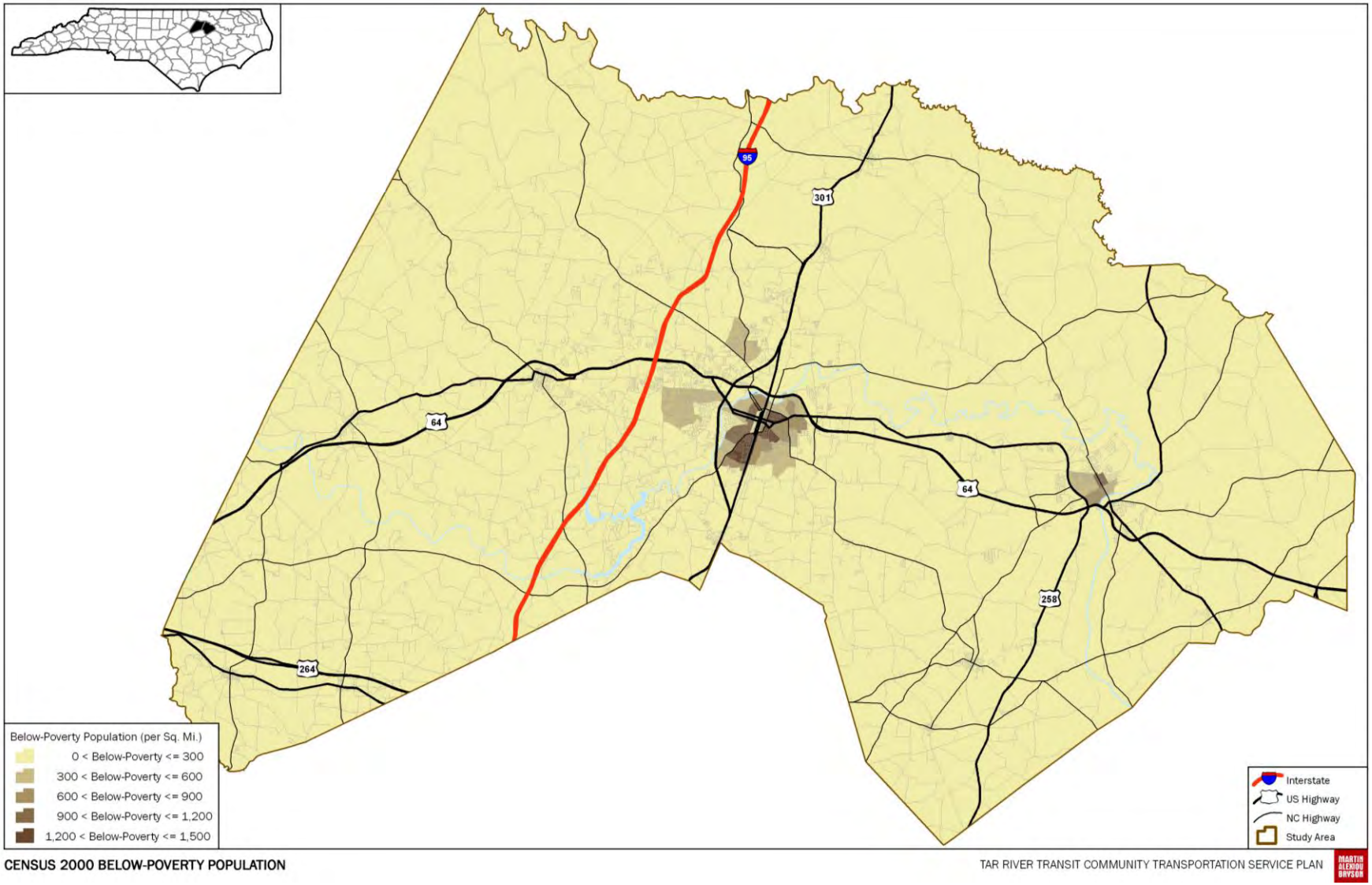


Figure 3.20 City of Rocky Mount Below-Poverty Population Density

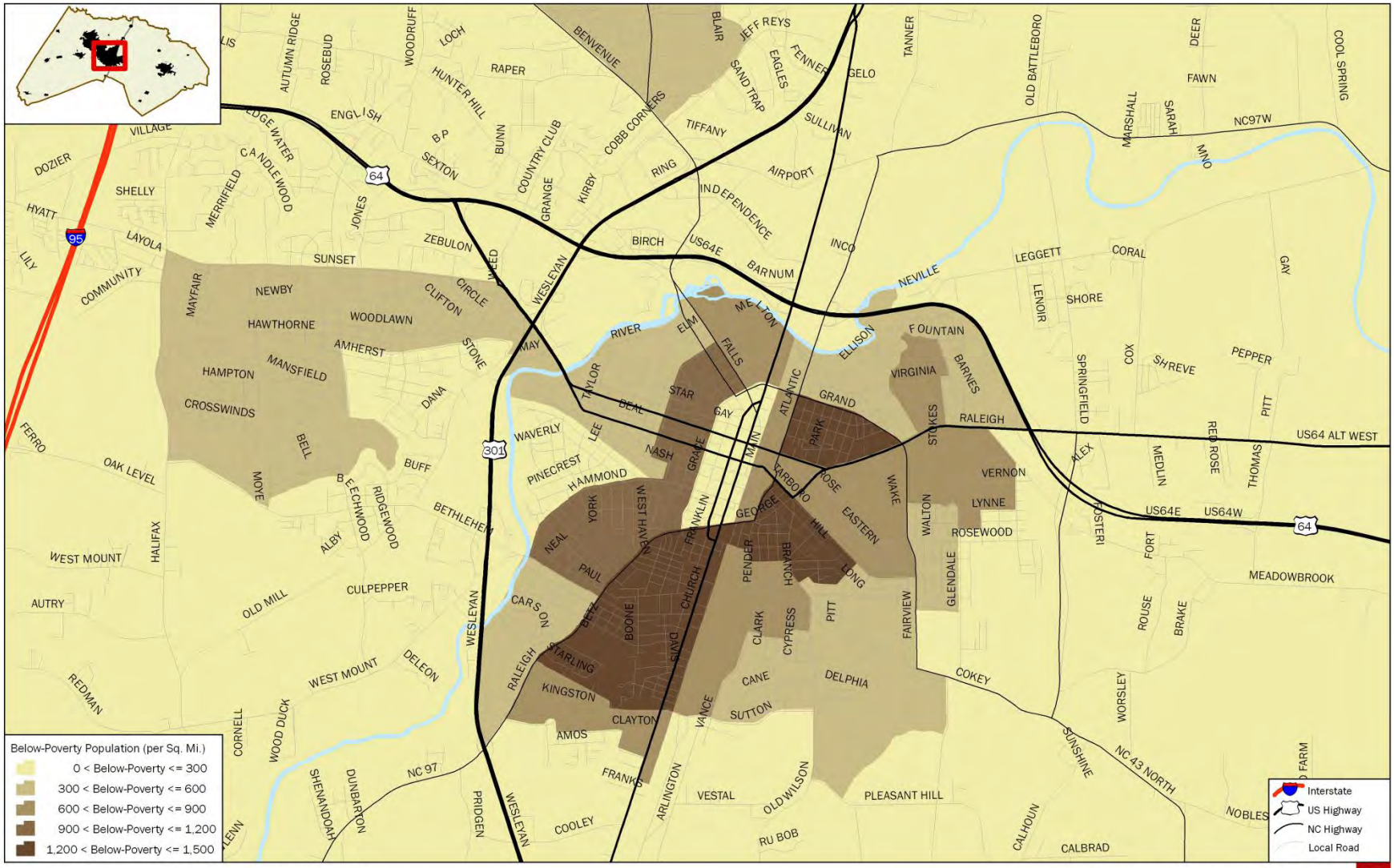


Figure 3.21 Study Area Zero-vehicle Household Density

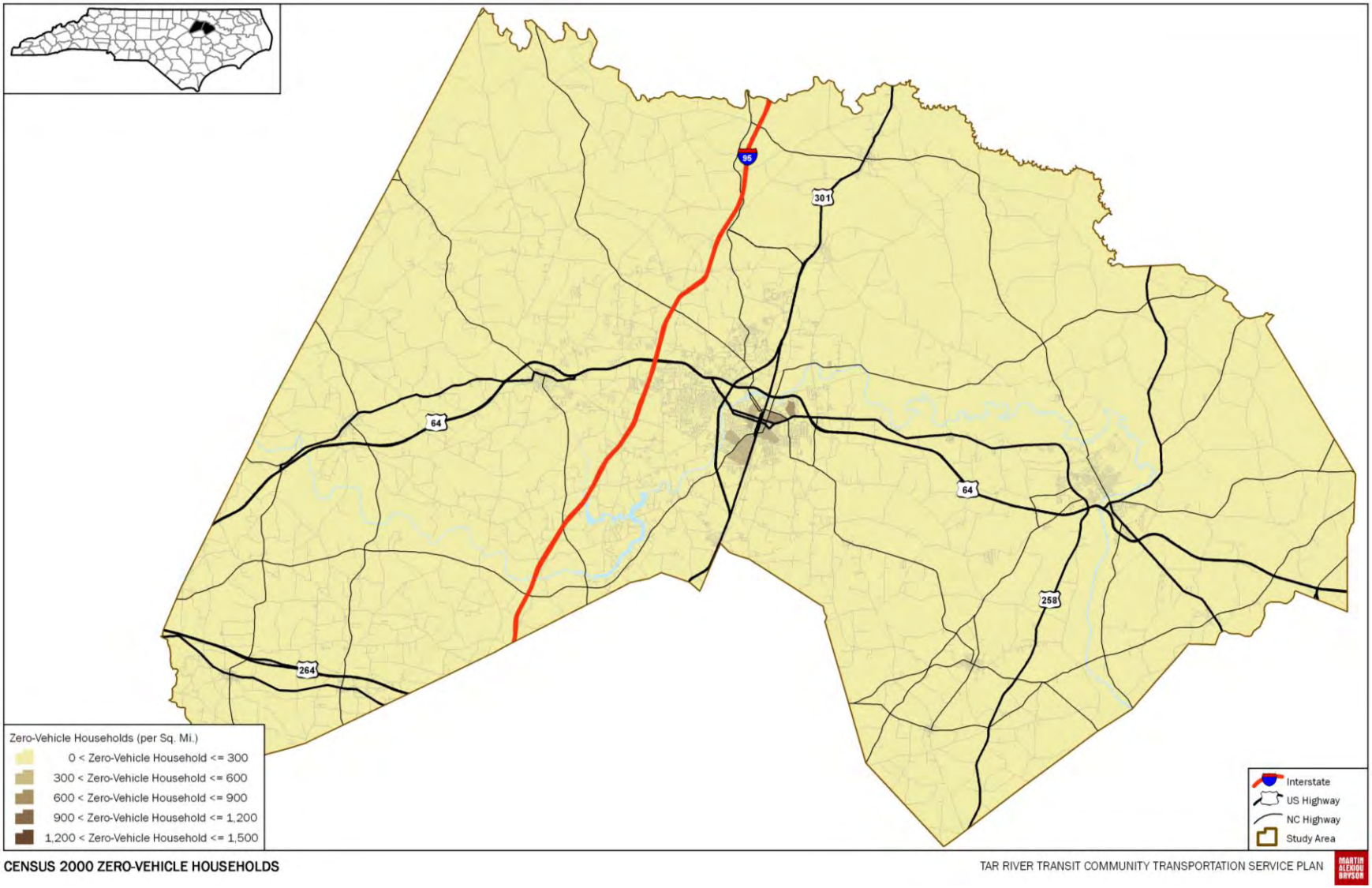


Figure 3.22 City of Rocky Mount Zero-vehicle Household Density

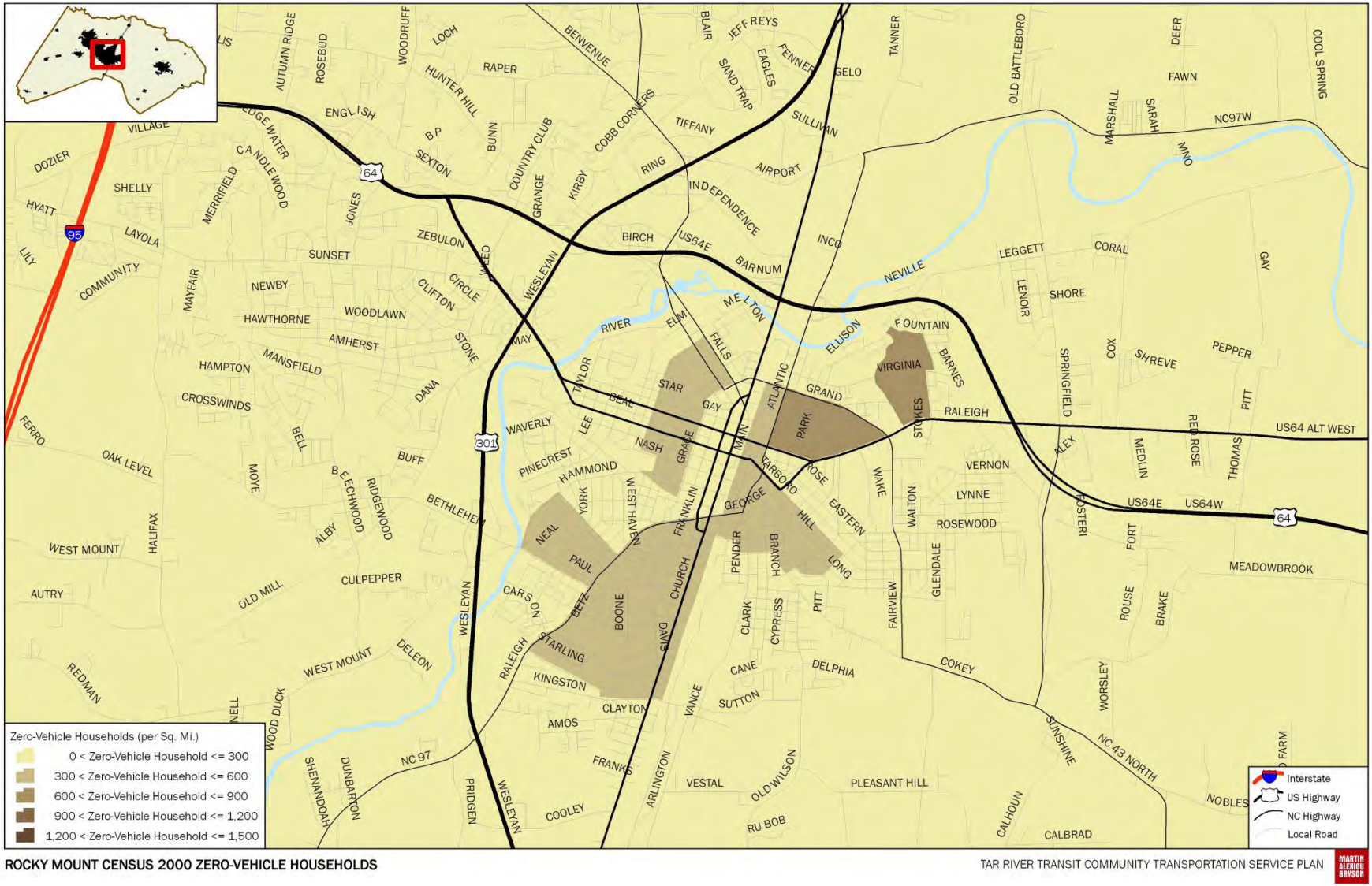


Figure 3.23 Study Area One-vehicle Household Density

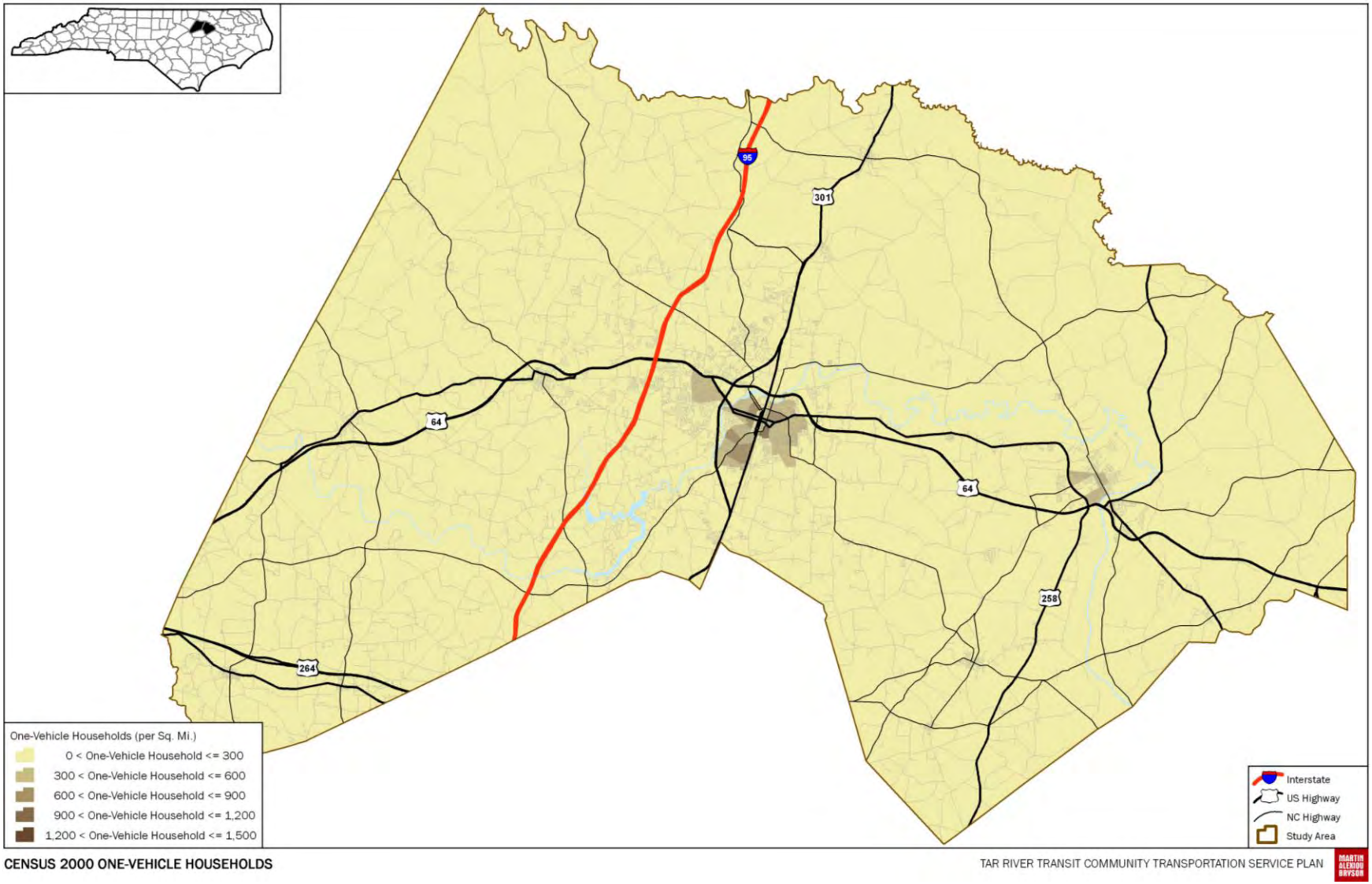
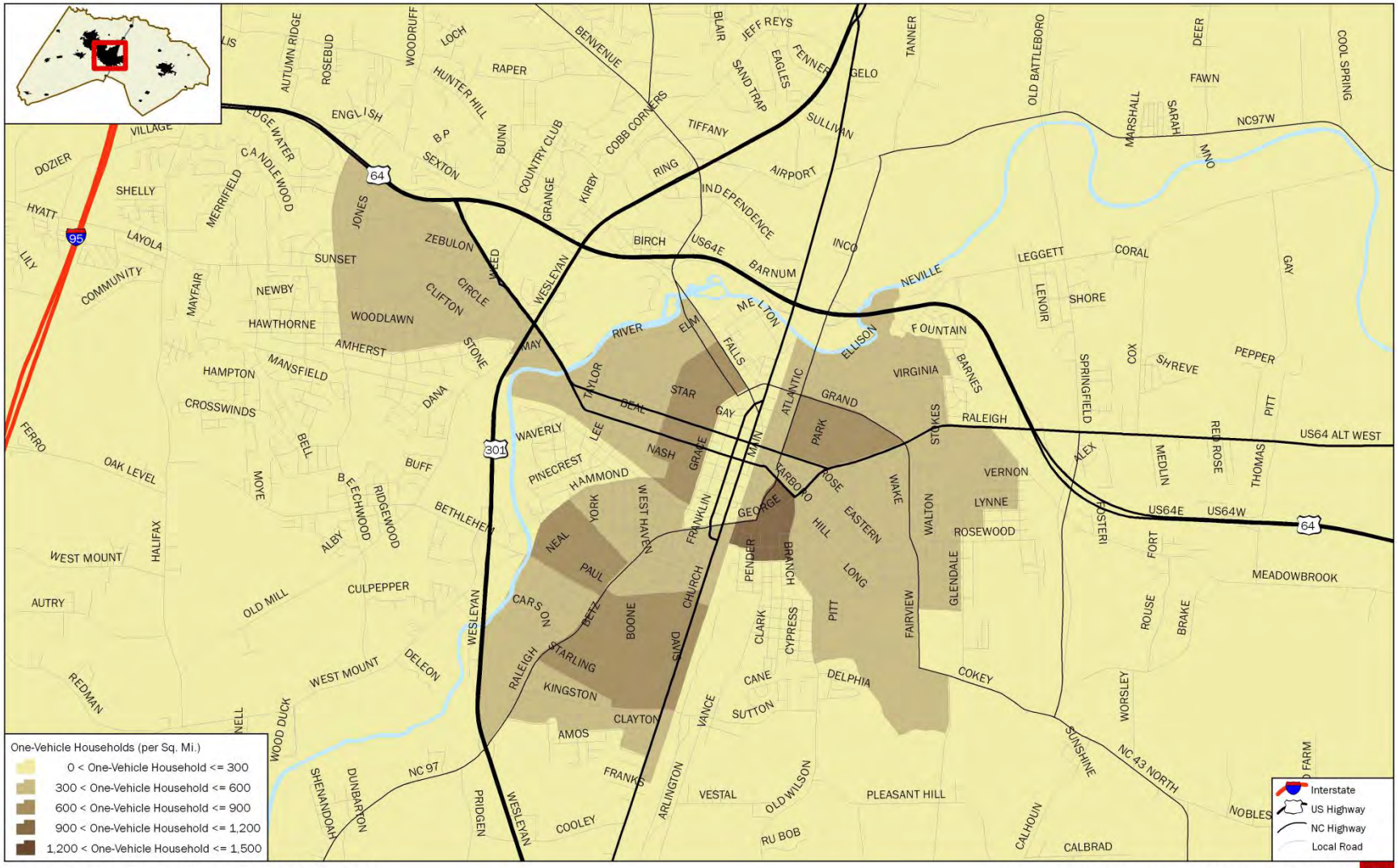


Figure 3.24 City of Rocky Mount One-vehicle Household Density



EMPLOYMENT DATA

Historically, the economy in the Study Area was based on agriculture. Today, health services and retail services form the economic base. Table 3.13 presents the labor force data for the Study Area. As shown, the Study Area's unemployment rate in 2000 (4.3 percent) was higher than the statewide unemployment rate (3.4 percent). Likewise, in 2008, the Study Area's unemployment rate (14.0 percent) was higher than the statewide unemployment rate (11.1 percent). However, 38.9 percent of the Study Area's population aged 16 and over was *not* in the labor force in 2000 (the percentage dropped slightly to 37.5 percent in 2008), reflecting in part the high proportion of retired residents. Notably, the unemployment rate in Rocky Mount was nearly triple the unemployment rate in Nash County and nearly double the unemployment rate in Edgecombe County in 2000 – these differences have disappeared by 2008 though, suggesting that the unemployment rate today is just as high in rural areas of the Study Area as it has been in the urban areas. It should be noted that the recent downturn in economy has increased the unemployment rate in Rocky Mount to 13.7 percent (per U.S. Bureau of Labor Statistics, data valid as of October 2009), which compares negatively to the current unemployment rate in North Carolina at 11.1 percent. The unemployment rate in Rocky Mount has dropped to 13.7 recently (October 2009) from its recent high of 14.3 percent in June of 2009 which suggests the economy is slowly turning around.

TABLE 3.13
EMPLOYMENT DATA – THE STUDY AREA

	2000			2008		
Location	Population over 16 in Labor Force (%)	Population over 16 not in Labor Force (%)	Unemployed (%)	Population over 16 in Labor Force (%)	Population over 16 not in Labor Force (%)	Unemployed (%)
Rocky Mount	60.6	39.4	9.2	64.2	35.8	13.7
Edgecombe County	59.4	40.6	5.7	59.9	40.1	16.2
Nash County	62.1	37.9	3.4	64.2	35.8	12.8
Study Area	61.1	38.9	4.3	62.5	37.5	14.0
North Carolina	65.7	34.3	3.4	65.5	34.5	11.1

Source: 2000 U.S. Census Data, 2008 U.S. Census Data, U.S. Bureau of Labor Statistics

Table 3.14 shows major employers in the Study Area, based on data collected by the Employment Security Commission of North Carolina in 2009. Figure 3.25 shows employment locations within the Study Area, while Figure 3.26 shows major employers in the City of Rocky Mount. Manufacturing and retail/service based sectors along with educational, health and social services,

account for most of the large employers in the Study Area. The area does not include any military bases, major universities, or major tourist destinations. According to the Employment Security Commission of North Carolina, the largest employer in the Study Area is the Nash-Rocky Mount Schools system (2,500 employees). Other employers with more than 1,000 employees include Hospira (1,875 employees), Nash Health Care Systems (1,700 employees), Consolidated Diesel Company (1,600 employees), Edgecombe County Schools (1,100 employees), and Glenoit Corporation (1,000 employees).

TABLE 3.14
MAJOR EMPLOYERS IN THE STUDY AREA

Name	Employment Range	Industry	County
City Of Rocky Mount	1,000+	Public Administration	Edgecombe
Consolidated Diesel Co	1,000+	Manufacturing	Nash
Hospira Inc	1,000+	Manufacturing	Nash
Nash Hospitals Inc.	1,000+	Education & Health Services	Nash
Nash-Rocky Mount Schools	1,000+	Education & Health Services	Nash
Rbc Centura Bank Inc Edi	1,000+	Financial Activities	Nash
County Of Nash	500-999	Public Administration	Nash
East Carolina Health Inc	500-999	Education & Health Services	Edgecombe
Edgecombe County	500-999	Public Administration	Edgecombe
Edgecombe County Public Schools	500-999	Education & Health Services	Edgecombe
Edgecombe County Public Schools	500-999	Education & Health Services	Edgecombe
Mclane Mid-Atlantic Inc	500-999	Trade, Transportation & Utilities	Edgecombe
Qvc Rocky Mount Inc	500-999	Trade, Transportation & Utilities	Edgecombe
Sara Lee Corporation Attn: Tax Depa	500-999	Manufacturing	Edgecombe
Wal-Mart Associates Inc	500-999	Trade, Transportation & Utilities	Nash
West Customer Management Group Llc	500-999	Professional & Business Services	Nash
Air System Components Inc	250-499	Manufacturing	Edgecombe
Autumn Corporation	250-499	Education & Health Services	Nash
Barnes Farming Corporation	250-499	Natural Resources & Mining	Nash
Boice Willis Clinic P A	250-499	Education & Health Services	Nash
Carolina System Technology Inc	250-499	Manufacturing	Edgecombe
Edgecombe Community College	250-499	Education & Health Services	Edgecombe
Edwards Inc	250-499	Construction	Nash
Embarq Mid Atlantic Management Serv	250-499	Information	Edgecombe
General Foam Plastics Corp	250-499	Manufacturing	Edgecombe
Hardee's- Non Edi	250-499	Leisure & Hospitality	Nash
Honeywell International Inc	250-499	Manufacturing	Nash
Interstate Brands Corp.	250-499	Manufacturing	Nash
Kaba Ilco Corporation	250-499	Manufacturing	Nash
Kelly Services Inc	250-499	Professional & Business Services	Nash
Mcdonalds	250-499	Leisure & Hospitality	Nash
Meadowbrook Meat Co Inc	250-499	Trade, Transportation & Utilities	Edgecombe
Nash Community College	250-499	Education & Health Services	Nash
Nash-Rocky Mount Schools	250-499	Education & Health Services	Edgecombe
State Of Nc Dept Of Correction	250-499	Public Administration	Nash

Superior Essex Communications Llc	250-499	Manufacturing	Edgecombe
Target Stores Div	250-499	Trade, Transportation & Utilities	Nash
U S Postal Service	250-499	Trade, Transportation & Utilities	Edgecombe
Universal Leaf North America Nc Inc	250-499	Manufacturing	Nash
Wal-Mart Associates Inc	250-499	Trade, Transportation & Utilities	Edgecombe
Abb Inc	100-249	Manufacturing	Edgecombe
Abbott Sales Marketing & Distri Co	100-249	Trade, Transportation & Utilities	Nash
Berry Plastics Holding Coporation	100-249	Manufacturing	Edgecombe
Carolina Telephone & Telegraph Co	100-249	Information	Edgecombe
Draka Elevator Products	100-249	Manufacturing	Nash
Food Lion Llc	100-249	Trade, Transportation & Utilities	Edgecombe
Food Lion Llc	100-249	Trade, Transportation & Utilities	Nash
General Mills Restaurants Inc	100-249	Leisure & Hospitality	Edgecombe
State Of Nc Dept Of Correction	100-249	Public Administration	Edgecombe
Sunrise Senior Living Management In	100-249	Education & Health Services	Edgecombe
Town Of Tarboro	100-249	Public Administration	Edgecombe
Source: Employment Security Commission of North Carolina (second quarter 2009 data)			

Figure 3.25 Study Area Major Employers

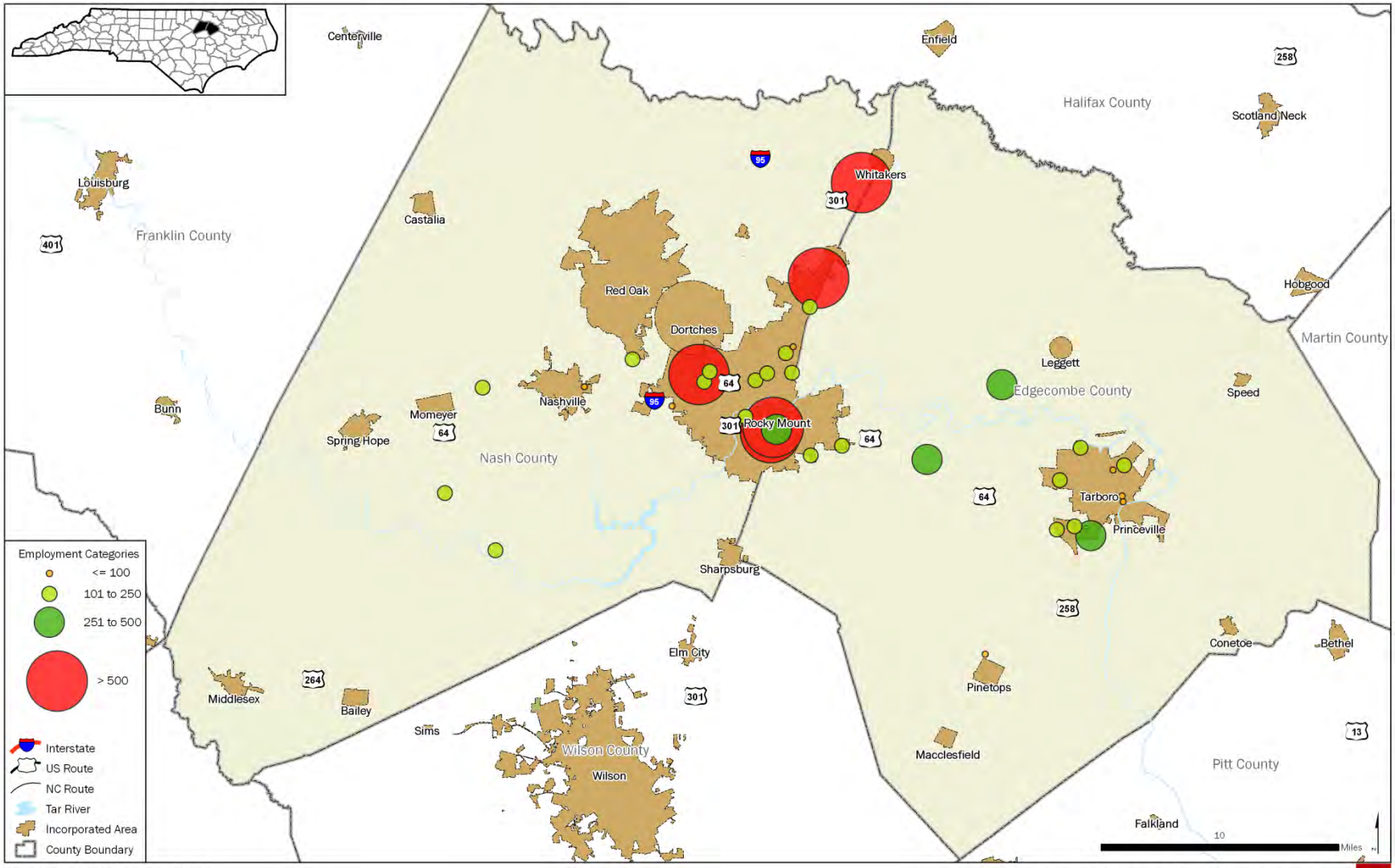
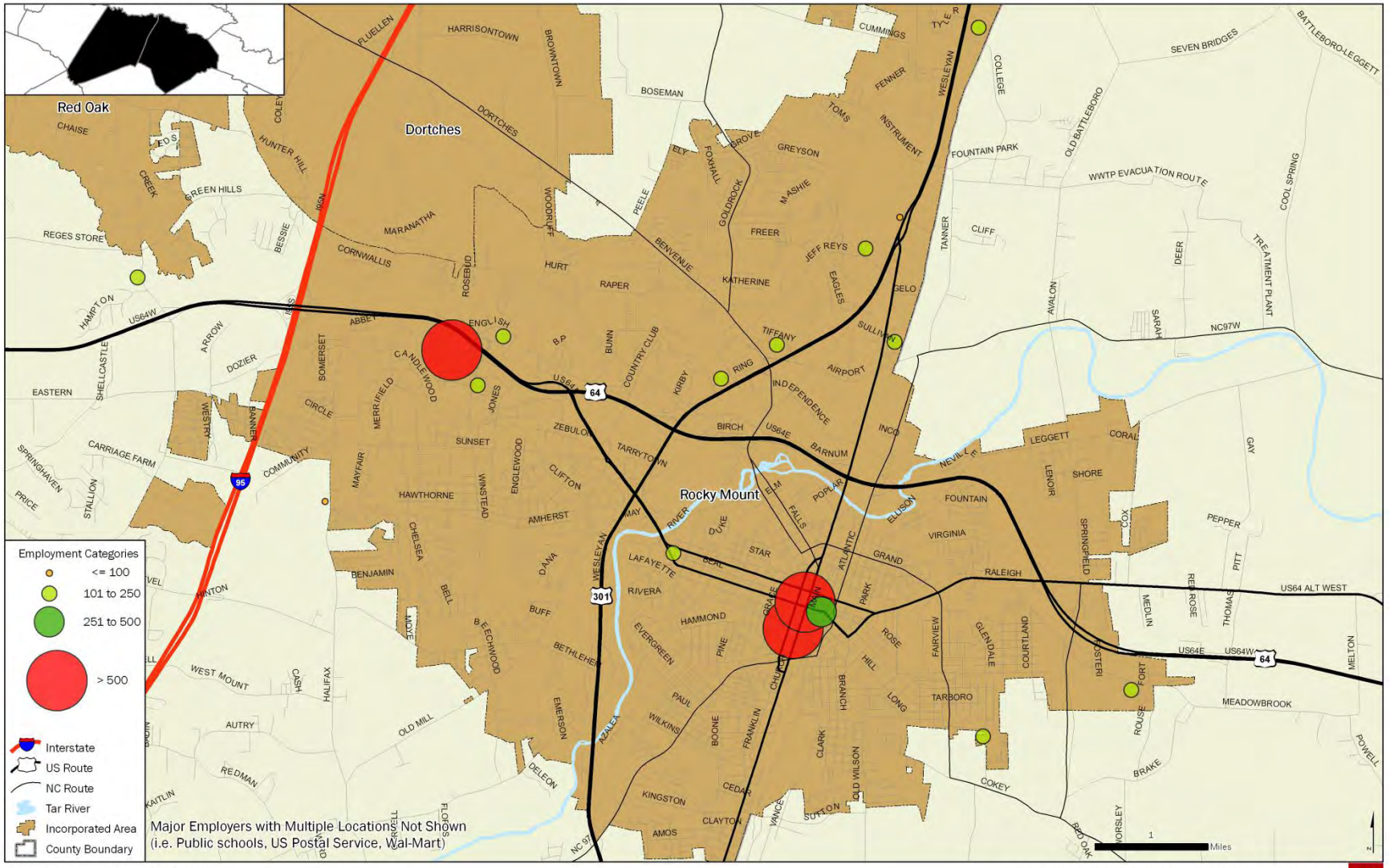


Figure 3.26 City of Rocky Mount Major Employers



MAJOR ACTIVITY CENTERS

Quality transportation services should be provided to major activity centers within the Study Area as well as the City of Rocky Mount itself. These major activity centers include the following:

- Medical:
    - Nash General Hospital
    - Lifecare Hospital of North Carolina
    - Heritage Hospital
    - Medical Clinics
    - Doctor/Dental/Vision Offices
    - County Public Health Services
    - Drug & Alcohol Services
    - Pregnancy Support
- Government:
    - City Halls
    - County government offices
    - Post Office
    - Courthouse
- Social Services
- Recreational/Social:
    - Rocky Mount Senior Center
    - Nash County Senior Center
    - Princeville Senior Citizens (Tarboro)
    - YMCA
    - Parks
    - Library

- Boys & Girls Clubs

- Educational:
  - North Carolina Wesleyan College
  - Edgecombe Community College
  - Nash Community College
  - Shaw University, North Carolina State University, Cincinnati College of Mortuary (local branches)
  - Christian Bible College
  - Edgecombe Technical Institute
  - Elementary, middle, and high schools

- Retail:
  - Downtown shopping areas
  - Shopping malls: Golden East Shopping Center, Westridge Shopping Center, Oakwood Shopping Center, Food Lion shopping center
  - Wal-mart
  - Drug Stores
  - Grocery Stores

REGIONAL TRAVEL PATTERNS

Table 3.15, Table 3.16, and Table 3.17 show the journey-to-work flows between Edgecombe County, Nash County, and the combined Study Area residents and other counties to which residents commute to work. Table 3.18, Table 3.19, and Table 3.20 show the journey-to-work flows between Edgecombe County, Nash County, the Study Area's employees and other counties where the employees live. Figure 3.27 shows the combined Study Area journey-to-work flows. Overwhelmingly, the Study Area is self-contained in regards to commuting, with 81 percent of residents remaining in the Study Area to work. This is not surprising given the rural nature of the Study Area with a central city of Rocky Mount that focuses employment opportunities. Nash County's residents are more likely to remain to work in their own County of residence when compared to Edgecombe County's residents.

Most commuting across the County line is to or from the adjoining Counties, particularly Wilson, Halifax, and Pitt. There are also a number of residents in the Study Area that commute to Wake County and other parts of the Triangle Region. When compared to Edgecombe County, Nash County attracts a bit more commuters from outside the County on a percentage basis, particularly because workers commuting from Wilson and Halifax Counties to Nash County alone account for around 11 percent of all commuters. There is little difference between in-commuting (to work in the Study Area) and out-commuting (to work outside the Study Area), reflecting Rocky Mount's regional significance and the Study Area's proximity to other job markets located in the surrounding counties. In other words, similar number of workers are exported from the Study Area as the number of workers imported to the Study Area.

TABLE 3.15
EDGECOMBE COUNTY RESIDENTS BY WORKPLACE COUNTY

Workplace	Employees	Percent of Residents
Edgecombe Co. NC	12,442	56.1%
Nash Co. NC	6,766	30.5%
Wilson Co. NC	1,121	5.1%
Pitt Co. NC	830	3.7%
Wake Co. NC	207	0.9%
Halifax Co. NC	200	0.9%
Durham Co. NC	102	0.5%
Martin Co. NC	59	0.3%
Franklin Co. NC	47	0.2%
Beaufort Co. NC	40	0.2%
Johnston Co. NC	35	0.2%
Wayne Co. NC	29	0.1%
Lenoir Co. NC	28	0.1%
All other locations	286	1.3%
Total	**22,192**	**100.0%**

Source: 2000 U.S. Census Data: County-to-County Worker Flow Files

TABLE 3.16
NASH COUNTY RESIDENTS BY WORKPLACE COUNTY

Workplace	Employees	Percent of Residents
Nash Co. NC	26,654	68.6%
Edgecombe Co. NC	3,738	9.6%
Wilson Co. NC	3,216	8.3%
Wake Co. NC	2,843	7.3%
Halifax Co. NC	682	1.8%
Pitt Co. NC	316	0.8%
Franklin Co. NC	297	0.8%
Johnston Co. NC	210	0.5%
Durham Co. NC	86	0.2%
New Hanover Co. NC	50	0.1%
Northampton Co. NC	48	0.1%
Granville Co. NC	43	0.1%
Richmond Co. NC	33	0.1%
Vance Co. NC	29	0.1%
Moore Co. NC	28	0.1%
Warren Co. NC	28	0.1%
Gaston Co. NC	26	0.1%
Cumberland Co. NC	24	0.1%
Wayne Co. NC	23	0.1%
Harnett Co. NC	21	0.1%
Burke Co. NC	20	0.1%
Greene Co. NC	20	0.1%
Robeson Co. NC	20	0.1%
All other locations	389	1.0%
Total	**38,844**	**100.0%**

Source: 2000 U.S. Census Data: County-to-County Worker Flow Files

TABLE 3.17
STUDY AREA RESIDENTS BY WORKPLACE COUNTY

Workplace	Employees	Percent of Residents
Study Area	49,600	81.3%
Wilson Co. NC	4,337	7.1%
Pitt Co. NC	1,146	1.9%
Wake Co. NC	3,050	5.0%
Halifax Co. NC	882	1.4%
Franklin Co. NC	344	0.6%
Johnston Co. NC	245	0.4%
Durham Co. NC	188	0.3%
All other locations	1,432	2.3%
Total	**61,036**	**100.3%**

Source: 2000 U.S. Census Data: County-to-County Worker Flow Files

TABLE 3.18
EDGECOMBE COUNTY WORKERS BY RESIDENCE COUNTY

Residence	Employees	Percent of Workers
Edgecombe County	12,442	63.0%
Nash County	3,738	18.9%
Halifax County	898	4.5%
Pitt County	826	4.2%
Wilson County	576	2.9%
Martin County	478	2.4%
Wake County	142	0.7%
Bertie County	102	0.5%
Beaufort County	54	0.3%
Greene County	54	0.3%
Wayne County	46	0.2%
Washington County	38	0.2%
Onslow County	32	0.2%
Franklin County	29	0.1%
Lenoir County	26	0.1%
Guilford County	23	0.1%
Cumberland County	21	0.1%
All other counties	235	1.2%
Total	**19,760**	**100.0%**

Source: 2000 U.S. Census Data: County-to-County Worker Flow Files

TABLE 3.19
NASH COUNTY WORKERS BY RESIDENCE COUNTY

Residence	Employees	Percent of Workers
Nash County	26,654	64.4%
Edgecombe County	6,766	16.3%
Wilson County	2,457	5.9%
Halifax County	2,089	5.0%
Wake County	704	1.7%
Franklin County	570	1.4%
Pitt County	347	0.8%
Johnston County	307	0.7%
Warren County	274	0.7%
Wayne County	143	0.3%
Northampton County	112	0.3%
Carteret County	61	0.1%
Greene County	61	0.1%
Martin County	48	0.1%
Guilford County	47	0.1%
Lenoir County	45	0.1%
Durham County	34	0.1%
Forsyth County	29	0.1%
Cumberland County	28	0.1%
Chowan County	27	0.1%
Duplin County	27	0.1%
Elliott County	26	0.1%
Sampson County	25	0.1%
Haywood County	24	0.1%
Vance County	24	0.1%
Wilkes County	21	0.1%
Iredell Co. NC	20	0.0%
All other counties	449	1.1%
Total	**41,419**	**100.0%**

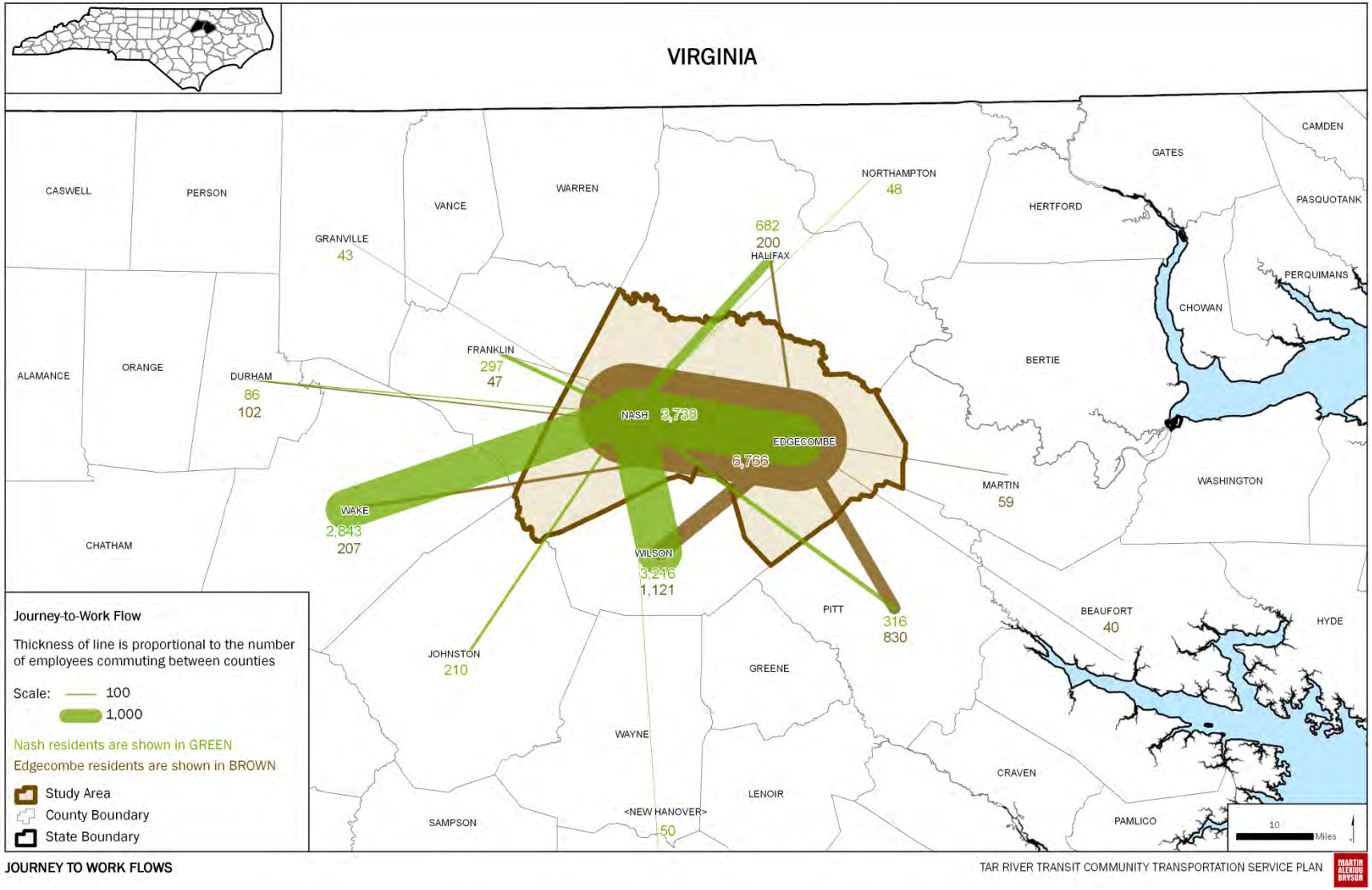
Source: 2000 U.S. Census Data: County-to-County Worker Flow Files

TABLE 3.20
STUDY AREA WORKERS BY RESIDENCE COUNTY

Residence	Employees	Percent of Workers
Study Area	49,600	81.1%
Wilson County	3,033	5.0%
Halifax County	2,987	4.9%
Pitt County	1,173	1.9%
Wake County	846	1.4%
Franklin County	599	1.0%
Martin County	526	0.9%
Johnston County	317	0.5%
Warren County	292	0.5%
Wayne County	189	0.3%
Northampton County	128	0.2%
Bertie County	115	0.2%
Greene County	115	0.2%
All other counties	1,259	2.1%
Total	**61,179**	**100.0&**

Source: 2000 U.S. Census Data: County-to-County Worker Flow Files

Figure 3.27 Study Area Journey-to-Work Flows



MEANS OF TRAVEL TO WORK

Table 3.21, Table 3.22, and Table 3.23 present the means of transportation to work for employed Edgecombe County, Nash County, and Study Area residents based on the 2000 US Census. The overwhelming majority of employed residents in the Study Area (80.7 percent) drove alone, while 14.5 percent carpooled. Edgecombe County's residents were less likely to drive alone than Nash County' residents - 77.4 percent drove alone versus 82.5 percent, respectively). Of the other means of transportation to work in the Study Area, 1.2 percent walked, 0.2 bicycled, 1.2 percent reported "other means", 1.9 percent worked at home, and 0.4 percent used public transportation. The Study Area's travel to work on public transportation rate (0.4 percent) was much lower than the statewide average (0.9 percent). It should be noted that the share of public transit as a mode to work jumps to 0.7 percent in Edgecombe County as well as in the City of Rocky Mount – but it is much lower in Nash County, where it stood at 0.2 percent in 2000.

TABLE 3.21
EDGECOMBE COUNTY PRIMARY TRANSPORTATION MODE TO WORK

Jurisdiction	Primary Transportation Mode to Work by Percentage							
	Drove alone	Carpooled	Rode Public Transit	Motorcycled	Bicycled	Walked	Other Means	Worked at Home
Rocky Mount (part)	79.7%	14.8%	0.7%	0.0%	0.2%	1.2%	1.4%	2.0%
Conetoe	79.6%	15.6%	1.8%	0.0%	0.0%	0.0%	1.8%	1.2%
Leggett	77.1%	2.9%	0.0%	0.0%	0.0%	0.0%	20.0%	0.0%
Macclesfileld	79.8%	13.0%	0.0%	0.0%	0.0%	4.8%	1.4%	1.0%
Pinetops	80.1%	15.3%	0.6%	0.0%	0.6%	2.7%	0.3%	0.3%
Princeville	59.5%	28.4%	0.7%	0.0%	0.0%	0.7%	7.0%	3.7%
Sharpsburg	80.6%	18.1%	0.0%	0.0%	0.0%	0.8%	0.5%	0.0%
Speed	64.7%	35.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Tarboro	79.7%	14.9%	1.9%	0.0%	0.1%	1.2%	0.9%	1.4%
Edgecombe County	77.4%	16.5%	0.7%	0.0%	0.1%	1.5%	1.9%	1.9%
North Carolina	79.4%	14.0%	0.9%	0.1%	0.2%	1.9%	0.8%	2.7%

Source: 2000 U.S. Census Data: SF3 Table: P3

TABLE 3.22
NASH COUNTY PRIMARY TRANSPORTATION MODE TO WORK

Jurisdiction	Primary Transportation Mode to Work by Percentage							
	Drove alone	Carpooled	Rode Public Transit	Motorcycled	Bicycled	Walked	Other Means	Worked at Home
Rocky Mount (part)	79.7%	14.8%	1.2%	0.0%	0.2%	1.2%	0.9%	2.0%
Bailey	83.5%	9.9%	0.0%	0.0%	0.0%	4.9%	0.0%	1.8%
Castalia	77.2%	16.3%	0.0%	0.0%	0.0%	4.3%	2.2%	0.0%
Dortches	86.9%	8.4%	0.0%	0.0%	0.0%	0.2%	0.7%	3.7%
Middlesex	76.3%	18.9%	0.0%	0.0%	0.0%	3.7%	0.0%	1.1%
Momeyer	91.8%	8.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Nashville	86.6%	10.4%	0.0%	0.0%	0.0%	1.5%	0.6%	1.0%
Red Oak	90.3%	7.2%	0.0%	0.1%	0.0%	0.0%	0.4%	2.0%
Spring Hope	67.4%	18.6%	1.0%	0.0%	0.4%	8.7%	0.6%	3.4%
Whitakers	78.2%	17.0%	0.0%	0.0%	0.0%	0.0%	1.1%	3.7%
Nash County	82.5%	13.4%	0.2%	0.1%	0.1%	1.0%	0.8%	1.9%
North Carolina	79.4%	14.0%	0.9%	0.1%	0.2%	1.9%	0.8%	2.7%

Source: 2000 U.S. Census Data: SF3 Table: P3

TABLE 3.23
STUDY AREA PRIMARY TRANSPORTATION MODE TO WORK

Area	Primary Transportation Mode to Work by Percentage							
	Drove alone	Carpooled	Rode Public Transit	Motorcycled	Bicycled	Walked	Other Means	Worked at Home
Edgecombe County	77.4%	16.5%	0.7%	0.0%	0.1%	1.5%	1.9%	1.9%
Nash County	82.5%	13.4%	0.2%	0.1%	0.1%	1.0%	0.8%	1.9%
Study Area	80.7%	14.5%	0.4%	0.0%	0.1%	1.2%	1.2%	1.9%
North Carolina	79.4%	14.0%	0.9%	0.1%	0.2%	1.9%	0.8%	2.7%

Source: 2000 U.S. Census Data: SF3 Table: P3

4. EXISTING AND FUTURE PLANS, POLICIES, AND PROGRAMS

Before developing the Community Transportation Service Plan, available and relevant reports, studies, and policies were reviewed to evaluate needs identified to date and identify needs and issues that may need to be reexamined. These studies, as they relate to transit in the Study Area, are summarized below.

2035 LONG RANGE TRANSPORTATION PLAN (LRTP)

The 2035 Long Range Transportation Plan (LRTP) 2035 was prepared by the Rocky Mount Urban Area Metropolitan Planning Organization (RMUMPO). RMUMPO covers approximately 198 square miles with 66,000 residents in eastern North Carolina, and includes the entire City of Rocky Mount within its boundaries. The goal of the LRTP was to provide a vision supporting a well-integrated, multi-modal transportation network capable of supporting the safe and efficient movement of people and goods in the Rocky Mount area by identifying viable, long-term transportation improvements for the area. Transit-related improvements included in the LRTP are shown in Table 4.1 below. These transit related improvements included in the LRTP reflect those identified in the previous Long Range Transit Plan and the Capital Improvement Program. According to the LRTP, most of the projects have been programmed for implementation within six years (by FY 2016). The estimate for the Transportation Administration/Maintenance Building represents the proposed budget for the facility, but the actual cost is subject to change due to individual site constraints. The amount proposed for major bus maintenance reflects historical expenditures by TRT and anticipated maintenance costs for the current fleet. The LRTP also mentioned funding for public transportation related improvements in the Rocky Mount Urban Area included in the Transportation Improvement Program (TIP) between 1998 and 2008. Based on this evaluation, the MPO would receive approximately $570,000 on an annual basis to fund transit operations, planning, and capital improvements.

TABLE 4.1
LONG RANGE TRANSPORTATION PLAN FY 2009-2015 TRANSIT IMPROVEMENTS

Transit Improvement	Projected Cost
Bus Turn-outs	$113,000
Major Bus Maintenance	$860,000
Service Vehicle	$70,000
Lift Equipped Minivan	$40,000
Replacement of Lift Equipped Vans	$170,000
Total	**$1,253,000**

UPPER COASTAL PLAIN REGIONAL TRANSIT PLAN (2009)

The Upper Coastal Plain Rural Planning Organization (UCPRPO) coordinated with the NCDOT Public Transportation Division (NCDOT PTD) to develop the Upper Coastal Plain Regional Transit Plan (UCPRTP). It should be noted that the Upper Coastal Plain region consists of not only Edgecombe and Nash counties, but also Johnston and Wilson Counties.

As part of the effort, the RPO developed a survey to better assess the unmet transportation needs and potential for transit coordination within the Upper Coastal Plain Study Area. The information gathered from the survey is grouped into four categories and shown in Table 4.2, with corresponding examples of the unmet needs.

TABLE 4.2 THE UCPRTP WORKSHOP: UNMET NEEDS ASSESSMENT		
Improvements	• Coordination between City and County • Readily Available Transit (Not Taxis, Cabs, etc.) • Increased Number of Routes on Fixed-Route Systems	• Expanded Operation Hours • Increased Services Available in Rural Areas
Service Not Provided	• More Rural General Public Service • Commuter Rail • Bus or Van • Handicap Accessible Vehicles	• Services to Recreational Areas, Parks, YMCA, etc... • Services from Rural Areas to County Seat • Public Transit
Potential Users of Service	• General Public • Elderly • Disabled • Youth • Individuals Accessing Health Dept. and/or Social Services	• Worker s • Shoppers • Students • Clients of Vocational Rehabilitation
Destinations	• Municipalities • Locations within the Municipality • Medical Offices • Grocery Stores • Pharmacies • Hospitals • Treatment Center	• Banks • Home • Place of Employment • Shopping Centers • Social Services • Community Colleges

The Upper Coastal Plain RPO also organized the UCPRTP workshop in January 2009. Throughout the workshop, stakeholders helped identify the needs and gaps within the current transportation service through workshop exercises. Unmet needs were identified and programs were prioritized during the exercises (by identifying the gaps in services on maps). The data gathered from the UCPRTP workshop acted as the foundation for UCPRTP. One of the exercises consisted of using maps to identify gaps in services and areas with potential for increased future transit service. The results for Edgecombe and Nash counties are shown in Figure 4.1 and Figure 4.2. Another exercise consisted of using a matrix describing several possible goals of a coordinated transit system and several strategies to accomplish them. The matrices were compiled to create a collective analysis of the following goals, strategies, and coordinated transit needs for the region:

1. Increase service to fill gaps - implies some inter-county fixed route or highway service corridors
   Strategy: Evenings, weekends, increased visibility

2. Better inter-connections and/or coordinated service

Strategy: Broker trips

3. Broadcast user-friendly info/education – i.e. internet, public forums, etc.

   Strategy: Increased visibility, agency operated

4. Provide stops with transit amenities – i.e. lighting, benches, audible signs, and sidewalks.
   Strategy: Fixed-route, evenings, weekends

5. Increase all types of service to new user groups, especially veterans and door-to-door elderly
   Strategy: Broker trips, door-to-door

6. Provide travel training for inexperienced/hesitant transit riders, i.e. for elderly, disabled, limited English, etc.
   Strategy: Fixed-route, increased visibility

7. Trips need to service employment, centers, and commuters
   Strategy: Fixed-route, evenings, weekends, vouchers, vanpools, park & ride

8. Strengthen the Transportation Advisory Board
   Strategy: Increased Visibility

9. Customer Service Improvements
   Strategy: Vanpool, Big Vehicle

10. Different expectations across county lines
    Strategy: Increased visibility, transit pass

11. Language Barriers
    Strategy: Fixed-route

12. Make land use and transit work together
    Strategy: Increased visibility

13. Remove barriers for mobility impaired
    Strategy: Door to Door

Additional space was provided to identify items the participants felt were important although not already identified:

14. Signs with bus schedules at the bus stops
    Strategy: Increased visibility

15. Ensure each housing development has designated bus stops
    Strategy: Increased visibility

Lastly, the participants were invited to rank the strategies they individually found most appropriate for their clients or the interest they represented by allocating $100 spread over the strategies they had recommended. The results of this are shown in Table 4.3. The highest priority categories chosen were fixed-route service ($330) and door-to-door service ($285), followed by weekend service ($142) and evening service ($107).

After taking all the recommendations into consideration, the UCPRTP proposed the following transit improvements:

- Improvements made to fixed-route services by either increasing services offered within existing fixed route systems or initiating routes for systems that have not previously offered services would improve transportation mobility for the seniors, mobility-impaired, and low-income individuals
- Expanding and/or initiating door-to-door services would enhance mobility of captive transit riders
- The expansion of operating transit hours should be reviewed and considered as a serious strategy for transit system improvements.
- Exploring the possibility and feasibility of providing additional services should not be dismissed

TABLE 4.3
THE UCPRTP WORKSHOP: PROPOSED SERVICE IMPROVEMENTS

Shopping List	Total Dollars Spent	Average Dollars Spent
Fixed Routes	$330	$23.57
Door to Door Service	$285	$20.36
Weekend Service	$142	$10.14
Evening Service	$107	$7.64
Voucher Program	$87	$6.21
Bigger or Unique Vehicles	$80	$5.71
Increased Visibility of Existing Program	$65	$4.64
County Planning Zoning (Added)	$40	$2.86
Express Service	$35	$2.50
Older Adult Rider Aid Programs (Added)	$30	$2.14
Park & Ride Program	$29	$2.07
Volunteer Drivers Program	$20	$1.43
Transit Pass Program	$17	$1.21
Broker Trips to Others	$15	$1.07
Emergency Evacuation (Added)	$10	$0.71
Vanpools Program	$7	$0.50
Agency Operates Own Van	$0	$0.00
Total – 13 Workshop Participants		**$1,299**

Figure 4.1 The UCPRTP Workshop: Service Improvements in Edgecombe County

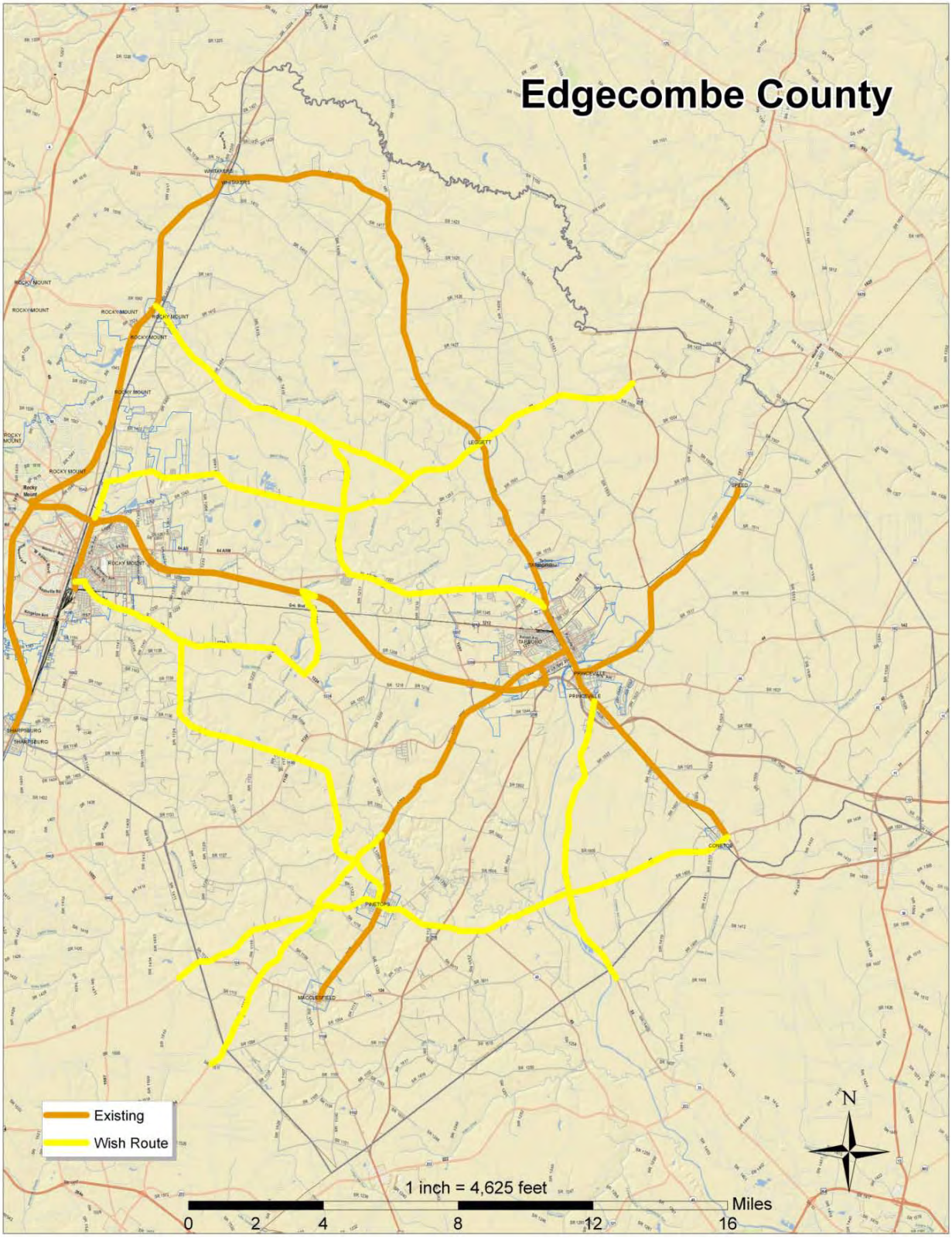
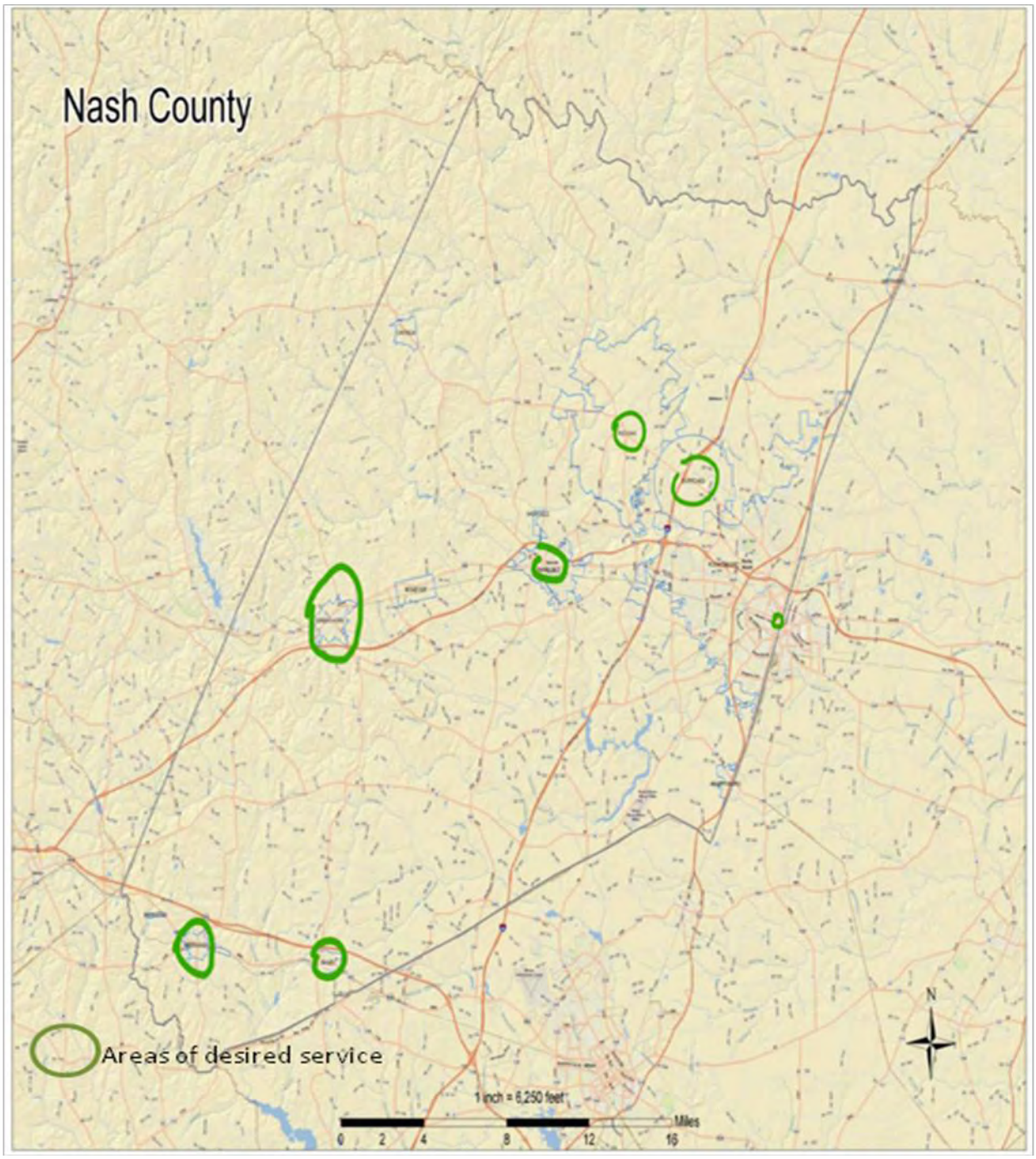


Figure 4.2 The UCPRTP Workshop: Service Improvements in Nash County



COMPREHENSIVE PLAN FOR THE CITY OF ROCKY MOUNT, THE ROCKY MOUNT URBAN AREA TRANSPORTATION PLAN (2003)

The Comprehensive Plan looked at all transportation modes in the City of Rocky Mount, but the most relevant information for the purpose of this study refers to transit. The Plan described the existing transit services in the Rocky Mount MPO area, and projected an increase in transit ridership, given the recent downturn in the local and national economies, as well as growing regional population. The Comprehensive Plan noted that if transit ridership was to increase, the location of existing and future public transportation routes may become a more important factor in future land use decisions such as rezoning and/or subdivision approvals.

Taxpayers subsidize public transit services, and increasing the number of riders on transit is dependent on increasing the public investment in capital and/or operating expenditures for the service. Thus, where commercially feasible in the MPO area, the Comprehensive Plan recommended expanding transit services, especially for seniors, mobility-impaired and the disadvantaged population.

The two main transit recommendations strategies aimed at increasing TRT ridership included:

> First, expanding geographic coverage of routes and expanding route schedules (hours and frequency) to provide better service between residential areas and employment centers, shopping and medical facilities. A ridership market survey was recommended in order to prioritize target markets for expanded geographic coverage and expanded route schedules.
> Second, promoting and expanding ridership to serve market segments (seniors), including expanding advertising, working through social service organizations and businesses, and promoting ridership through employer/employee subsides Changes in federal tax laws have provided financial incentives to employers and individuals to use alternative modes of travel. A new market for expanded transit services is to serve large employment centers, working collaboratively with company representatives and transit officials to tailor the service to the needs of the target employees. Rocky Mount should ensure that sidewalks are constructed that connect neighborhoods with bus stops. This would provide a safe incentive for riders.

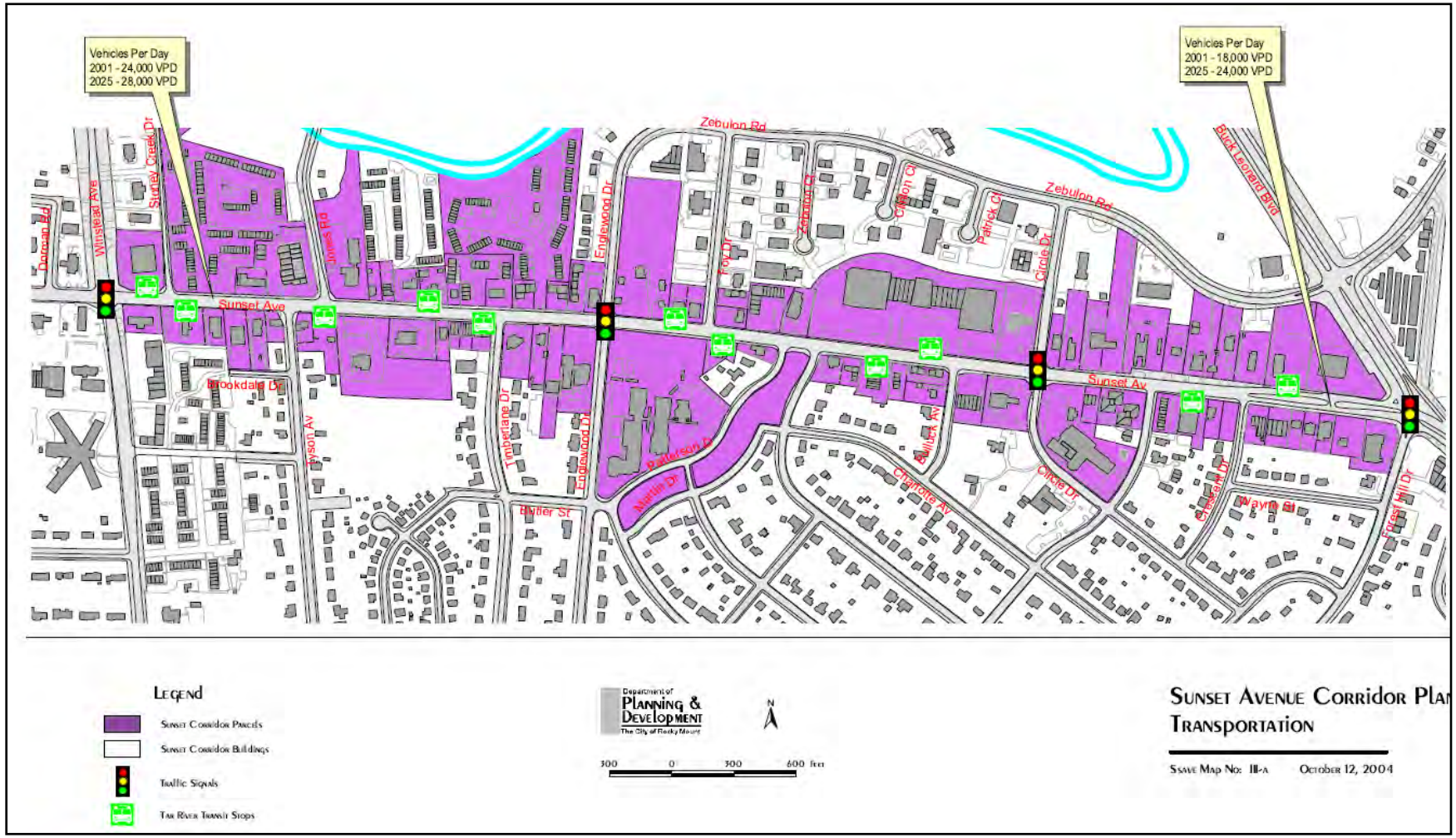
The Comprehensive Plan also touched upon transit system data collection – one of the recommendations was to develop a summary of monthly, quarterly and annual transit statistics in order to identify positive and negative trends. Identifying trends in data would allow TRT to make changes to optimize ridership and revenues.

SUNSET AVENUE CORRIDOR PLAN (2004)

The purpose of the Sunset Avenue Corridor Plan was to provide specific information and recommendations for the future development of the 1.2 mile segment of Sunset Avenue in Rocky Mount between Winstead Avenue and Buck Leonard Boulevard (originally served as US 64) through the year 2020. Sunset Avenue is functionally classified as an arterial facility or a major thoroughfare. The Corridor Plan noted that transit service is provided along Sunset Avenue: TRT operates Route 7 six days per week. The route originates downtown at the Transit Center and goes to the Nash Health Care Systems campus via Sunset Avenue. Within the Study Area, eleven bus stops have been designated with five on the west bound side and six on the east bound side (see

Figure 4.3). The Corridor Plan stated that improving conditions at the bus stops will encourage a larger number of people to use transit. The eleven bus stops should be studied to determine a priority system for placing improvements like paved standing surface, benches, trash receptacles, and overhead shelter.

Figure 4.3 Sunset Avenue Corridor Plan Transportation



ROCKY MOUNT COMPREHENSIVE BICYCLE PLAN (2007)

The Rocky Mount Comprehensive Bicycle Plan proposed 20 bicycle routes that would constitute a complete citywide system. One of the proposed routes, 'Downtown Core Loop,' would connect TRT Station, two schools, Library, Arts Center, a few museums, and historic sites.

The Plan also put forward a variety of policy and program initiatives aimed at bicyclists, including the recommendation to work with the TRT to equip transit vehicles with bicycle racks.

TAR RIVER TRANSIT SERVICE REDESIGN PLAN (2002)

The Service Redesign Plan examined transit routes within the community of Rocky Mount as well as transit services being provided in Edgecombe and Nash counties. The Service Redesign Plan listed comments from the Transit Administrator, advisory steering committee, and transit supervisors and drivers obtained at the beginning of the study. Their comments can be summarized as follows:

- The Battleboro/Goldrock Shuttle and the Nash Community College/Little Easonburg Shuttle services' performance pull down the performance of urban fixed routes within the City. Since at least one trip end is in the rural area, the recommendation was to reassign them to the FTA rural Section 5311 program
- There are areas in Rocky Mount where the sidewalks have no curbcuts. This limits the ability of persons who would otherwise be able to use the fixed route service to have to rely on the demand response service. Perhaps a curb cut study is needed
- Nash Community College students could benefit from access to an evening public transportation service
- A rural transportation system that would get persons to work at a lower cost is needed
- Because of the nature of the services provided, TRT's rural service is not reliable enough for persons to use to get to work on time
- If there were evening service more students would be able to secure off-campus jobs
- The Latino population in Nash County is about 5,000 – 7,000 persons in the summer months and it is increasing each year
- The Golden East Route schedule is too tight to make in a 30 minute round trip. The current route path needs an additional 10 minutes or the route needs to be shortened
- There is sufficient time in the schedule to expand the Ravenwood route to serve the fast food and other businesses located in the direction towards Sharpsburg
- Service to the Bailey area is needed
- The Tarrytown Route *(note: currently Sunset route)* should serve Lowes supply store since there is sufficient time on the schedule
- Service should be extended in the evening until 9:00 PM
- The existing loop route patterns should be streamlined to primarily operate inbound and outbound along the same streets
- It is difficult to get out of the Wal-Mart parking lot
- There is a new housing complex in the area just outside of the city limits (Wilson Rd.) that needs to be served

The Service Redesign Plan also described the existing transit services in Edgecombe and Nash counties, including fixed routes and demand-responsive services, followed by financial and operations performance analysis of the transit network.

The FY 2000-01 Fixed-Route performance analysis showed the following:

- Operating cost per passenger trip: of the seven urban routes the most expensive was the Meadowbrook Route ($4.02). The least expensive was the Golden East Route ($2.35), followed by the Oakwood and Tarrytown Routes ($2.52 each). The weakest performer in terms of passengers per vehicle hour was the Ravenwood route at 14.72 one-way trips per hour. The strongest performer was the Golden East Route carrying nearly 30 passengers per vehicle hour.
- In terms of deficit per passenger trip, the highest deficit per trip at $3.64 was on the Meadowbrook Route. The lowest deficit and per one-way trip was on the Oakwood Route ($2.13) followed by the Golden East Route ($2.14). The overall system-wide average was $2.47 per one-way trip.
- TRT's fixed route services were operating very efficiently. With an overall performance of nearly 20.2 passenger trips per vehicle hour, this system was one of the higher performing small urban transit programs operating in the southeast.

The FY 2000-01 Urban Paratransit performance analysis showed that the Nash Community College/Little Easonburg and Battleboro/Goldrock services have somewhat better productivity than the rural shuttles. At 3.52 passengers per vehicle hour these two routes are far more productive than the rural demand response services at about 1.91 one-way trips per vehicle hour.

The FY 2000-01 Rural Paratransit system performance analysis showed that the average cost of service was $0.97 per vehicle mile. This equated to about $9.14 per one-way trip. The provider was generating 0.11 passenger trips per vehicle mile. The estimated number of trips per vehicle hour was 1.91 (using 18 mile per hour to compute the estimated annual hours)

The Plan also analyzed and discussed transit propensity in the Study Area containing both Edgecombe and Nash counties. In terms of transit demand analysis, the Service Redesign Plan noted that in Edgecombe County the highest propensity areas are centered in Rocky Mount, Tarboro and Princeville. The propensity in Nash County is greater than that of Edgecombe and includes a large section of Rocky Mount and sections of Nashville. The areas that show the highest propensities for transit services should be the initial focus of a service-restructuring plan. The Service Redesign Plan compared (overlaid) the existing TRT fixed routes to existing trip generators (places to which people need and want to travel, such as major housing complexes, major employers, medical facilities, shopping malls, educational institutions, human service agencies). Most of the trip generators were located in the Rocky Mount area and, to a lesser degree, in the Tarboro area. Figure 4.4 shows the largest trip generators in the Rocky Mount area. The fixed routes/trip generators overlay showed that TRT fixed routes were generally in close proximity to the major destinations within the city.

One of the components of the Service Redesign Plan consisted of an on-board survey of the TRT fixed route services. The results of the survey suggested that TRT has an opportunity to develop a promotional program geared at the youth market and at the older population - particularly the 10 to

15 year old age bracket and seniors (based on the demographics of the survey respondents alone). In addition, the agency also has an opportunity to improve customer satisfaction in virtually all areas, including:

- Developing a comprehensive passenger waiting shelter campaign
- Revising the routes to ensure the buses are on-time (particularly the Golden East route)
- Increasing the seating capacity in future bus purchases in order to accommodate more seated passengers
- Improving the knowledge and/or friendliness of customer service personnel
- Providing transit access closer to some of the major destinations, particularly those outside of the city corporate limits

The final chapter of the Service Redesign Plan offered suggested service improvement alternatives. These were proposed with understanding of the system's strengths (such as its high productivity, high level of customer satisfaction), weaknesses (such as 30 minute waits at the downtown transfer center between some of the routes, low shuttle ridership, infrequent service between Tarboro and Rocky Mount, certain service deficiencies such no late service at night and infrequent service in general and lack of certain amenities such as bus shelters).

While the Service Redesign Plan described proposed service changes to each individual TRT fixed route, it overall aimed at solving the following service design issues:

- Transfer Wait Time: Some departure times to be offset by 30 minutes and long waits for passengers to transfer between certain routes.
    - If all routes were on 30-minute headways the wait at the transfer station would be minimal. However, the expense would not be justifiable.
    - Shortening the Golden East route by changing the route pattern and not using Country Club Road and thus shorten the running time to minimize late arrivals at the transfer center.
    - Option: operating the Golden East Route on 30-minute headways by adding one additional bus. The Hillsdale and Meadowbrook routes could then be made bi-directional.
- Inconvenience of Loop Routes. The one-way loop design, common among Rocky Mount Transit routes, can cause some passengers to have a longer trip in at least one direction. *A bi-directional route design is preferable. However,* changing the current loop routes to bi-directional routes would require additional vehicles and significant increases in cost.
- Service Coverage: Fixed-route system covers the service area very well.
- Urbanized Area Growth: Consideration should be given to using a bidirectional route design approach in place of the current one-way loop configurations to serve new developments.
- Two Routes Serving Important Trip Generators: The offsetting route schedules and one-way loops are partially addressed by having more than one route serve important trip destinations. For example, both Route 6 – Oakwood and Route 1 – Meadowbrook serve the Oakwood Shopping Center.

- Need for Convenient Transfers: Many important destinations are located outside of Downtown Rocky Mount - convenient timed transfers to facilitate cross-town travel are crucial.

A number of preliminary detailed route improvement alternatives were developed for further consideration, but no changes were recommended until significant new funding is secured. Of particular importance were the proposed changes to the Golden East route, with three options discussed:

1. Run terminal loop clockwise
2. Add Nash General Hospital stop and short-turn buses
3. Extension to Nash General Hospital with 30-minutes headways

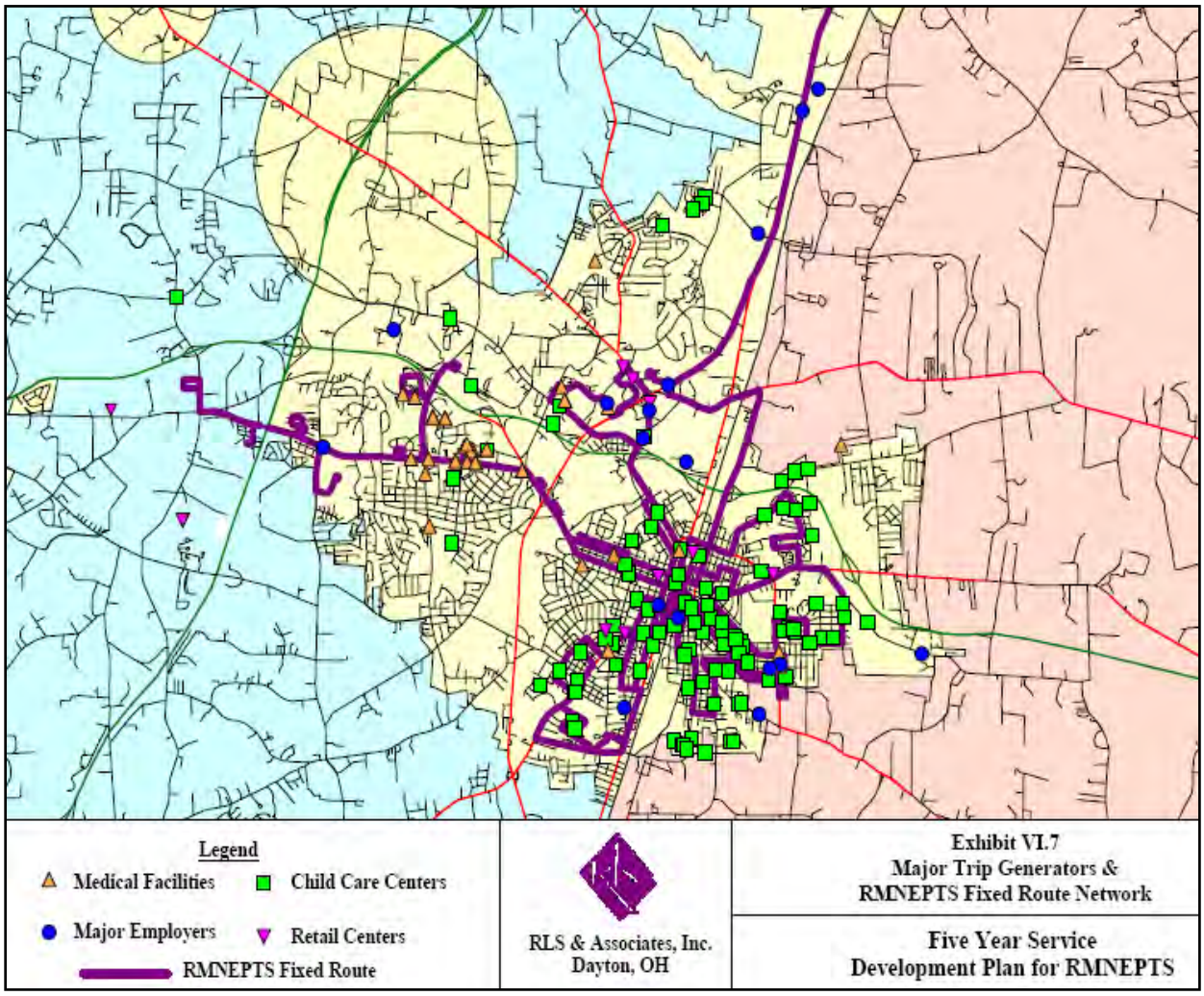
In terms of urban paratransit routes (shuttles), the Plan recommended eliminating Nash Community College/Little Easonburg Shuttle service and change the Battleboro/Goldrock Shuttle service from fixed route to demand-responsive. Finally, in terms of rural paratransit service recommendations, the following were proposed:

- Continue the current practice of adopting a uniform paint, decal, and logo scheme for all system vehicles. This action is already programmed and will only be reflected in the implementation plan budget
- Adopt a transfer policy for urban/rural system transfers
- Adopt new technology to facilitate fare payments on both urban and rural systems
- In conjunction with current plans to transition to "distance based" contract pricing, review all rural schedules to more actively utilize "ridesharing" in the scheduling of rural trips
- Conduct a comprehensive review of all rural "base" schedules to ensure that subscription trips have been assigned as efficiently as possible to the route
- Prepare integrated system marketing and promotional materials that address both rural and urban system transportation and the interconnectivity between systems
- Prepare a Spanish version of all system and promotional materials for distribution in areas with high concentration of Latino residents
- Adjust driver assignments and/or vehicle deployment strategies to reduce excessive non-revenue time (deadheading) on specified rural routes
- Continue to focus on the county shuttles as the primary means to draw rural general public ridership. Enhance this strategy by integrating human service agency subscription clients on these runs. Shuttle vehicles would act as collectors, providing demand response service in the respective communities (Tarboro/Nashville), and then connect with other demand response runs at a rural transfer point. Then shuttle service would be provided for the combined general public/contract agency passengers. In essence, the shuttle will be operating in dual mode, first as a demand response collector, then as a line haul rural shuttle
- Institute a management oversight practice of daily review of "slot" scheduled trips to ensure that the trip is assigned to the most appropriate vehicle
- Investigate expansion of service modes beyond that of just fixed route and demand response modes. Consider instituting the so-called 'family of services concept' where TRT would also use subcontracted taxi trips, volunteers, and payments to family or friends to run contracted

trips. These alternative modes are often more cost effective in the delivery of hard to serve demand response trips

- Encourage human service agencies to adopt policies to use fixed route service as the primary means of mobility within the urban area

Figure 4.4 Major Trip Generators in the Rocky Mount Area



TAR RIVER TRANSIT PERFORMANCE PLAN AND ANALYSIS (2009)

The TRT *Performance Plan and Analysis* (PPA) was conducted by NCDOT with the assistance from NCSU's ITRE in 2009 in order to 'provide the transit system with a guide to achieve higher

performance measures and improve business practices.' It should be noted that the PPA analyzed only TRT's demand-responsive service. In terms of overall system performance, the PPA noted that TRT's strengths were its good distribution of subscription and demand response trips. The area needing the most improvement was the agency's future growth and improvement in performance statistics. The specific steps TRT should take to improve its demand-responsive service target areas include:

1. Improved performance measures: TRT has had low passengers per service mile/hour and revenue mile/hour. The agency needs to: constantly strive to attract new riders, constantly strive to improve performance, and explore additional funding sources that may need service during non-peak hours

2. Vehicle Utilization:
    a. Capital Assessment: There is a significant reduction in the number of vehicles in service and the number of passengers carried most days between 8:30am and 2:30pm. TRT should explore options for providing more service during this time period. Other funding sources may be available that need clients transported during these hours
    b. Route Analysis: TRT should try to reduce the number of routes created each day. Currently, some routes only have one or two passengers. A large number of routes also means that there are a large number of manifests creating more paperwork for both drivers and data entry persons

3. Route Efficiency:
    a. TRT should reduce deadhead hours (higher than its peers) by exploring the use of a free, web based mapping tool to map a selection of routes and evaluate their efficiency – make changes based on this evaluation
    b. Train dispatchers and schedulers to use the CTS mapping feature when it is available
    c. Create and enforce a policy to reduce will calls
    d. Regularly reevaluate routes using mapping software to maintain efficiency
    e. Explore moving towards implementation of Advanced Scheduling Software to improve efficiency

4. No Show and Cancellation Policy:
    a. Collect information on "late cancellations" that occur less than two hours before the scheduled pick up time or after the driver has been given the manifest
    b. Revise the no show policy to include cancellations that occur less than two hours before the scheduled pick-up time if there are many cancelations

5. Ordered Manifests:
    a. Request a new manifest report that allows schedulers to order pick-ups and drop-offs separately
    b. Have drivers and schedulers work together to create manifests that accurately reflect the most efficient routes
    c. Have drivers review manifests before conducting the route to check if changes are needed

d. Longer-term: reevaluate routes to ensure that they are still accurate and efficient

6. Complete Origin/Destination Information:
    a. Explore manifest display options to see if a manifest is available with complete street address and city/town). If a report in this style is not available, request should be made
    b. Begin using a manifest style that includes complete stop addresses
    c. Check each address and add any missing information when scheduling a given trip

NCDOT 2009-15 STATE TRANSPORTATION IMPROVEMENT PROGRAM (STIP)

NCDOT's 2009-15 State Transportation Improvement Program (STIP) contains a list of 2,437 road, public transportation and aviation projects totaling $13 billion that the agency intends to fund over the next six years. Several Study Area projects are funded, including the following:

- Strategic Highway Corridor Projects:
    - Urban Projects:
        - Woodruff Avenue to I-95 – widen to multi-lanes with curb and gutter (planning/design in progress)
        - Hunter Hill Road and North Winstead Avenue to Benvenue Road in Rocky Mount - widen to multi-lanes (planning/design in progress - FY 2009-2012)
        - US 301 Bypass, Benvenue Road to May Drive – add an additional lane in each direction
        - Airport Road, US 301 Bypass (Wesleyan Boulevard) to Tanner Road – widen to multi-lanes (planning/design in progress)
        - North Winstead Avenue, Sunset Avenue to Hunter Hill Road – widen to multi-lanes (planning/design in progress - FY 2010-12)
        - County Club Road, US 64 Business to Jeffreys Road – widen to multi-lanes (right-of-way/design in progress - FY 2009-10)
        - US 64 southeast of Tarboro – widening to as multi-lane facility (FY 2014)
    - Rural Projects:
        - Rocky Mount Northern Connector, Hunter Hill Road to US 301 – widen to multi-lanes, part on new location (FY 2009-2015)
        - Sunset Avenue t Bethlehem Road – upgrade existing roadway
- Congestion Mitigation Projects:
    - Intersection improvements at the following intersections in Rocky Mount (FY 2010):
        - Raleigh Street and East Grand Avenue/Fairfield Road (under construction)
        - Atlantic Avenue and Thomas Street (under construction)
        - George Street and Tarboro Street (under construction)
        - Benvenue Road and Tiffany Boulevard
        - Sunset Avenue and Buck Leonard Boulevard
    - Construct sidewalks at the following locations in Rocky Mount:

    - Grand Avenue, Church Street, Peachtree Street, Grace Street, and Sunset Avenue (under construction – FY 2009)
    - Sunset Avenue, Raleigh Road, Grace Street, and Fairview Road (FY 2010)
- Enhancement Projects:
    - Rehabilitate historic Princeville Town Hall into a Visitor Center and Cultural Transportation Museum (in progress)
    - Downtown redevelopment project in Rocky Mount (FY 2009 – under construction)
    - Construct bike lanes in Tarboro, on East Northern Boulevard to end of Daniel Street (under construction)
- Public Transit Projects:
    - Edgecombe County – operating assistance to meet work first and employment transportation needs (FY 2009-2015)
    - Edgecombe County – operating assistance for additional transportation services to the seniors and mobility-impaired individuals (FY 2009-2015)
    - Edgecombe County – maintenance assistance for rural general public service (RGP) (FY 2009-2015)
    - Study Area: purchase paratransit vans (FY 2009)
    - Study Area: transit stops in commercial areas (FY 2009)
    - Study Area: Routing capital items, preventive maintenance, and ADA expenses (FY 2009-2015)
    - Study Area: federal operating maintenance and state maintenance (FY 2009-2015)

Some of the proposed road expansion projects in the Study Area are listed in the STIP but not funded. Often, funding is so far available only at the planning stage, with no funds allocated for deliverable and/or developmental STIP. Were additional funding available, some of these projects could advance to construction. The Rocky Mount Urban Area Metropolitan Planning Organization (MPO) had proposed additional roadway expansion projects when it approved the Unmet Transportation Needs List on in 2007. The MPO requested the following projects be considered for inclusion and/or completion in the 2009-2015 Transportation Improvement Program (in order of magnitude):

- Upgrade Rocky Mount Traffic Signal System
- Construct I-95/Sunset Avenue interchange (U-5026)
- Construct Nashville US 64/NC 58 connector
- Replace Sutton Road tunnels with bridge
- Extend Red Oak Road to Oak Level Road in Nashville
- Construct Southeast Connector from Cokey Road to Sutton Road/Old Wilson Road
- Widen Cokey Road from Redgate Avenue to Old Wilson Road
- Widen Goldrock Road from Greyson Road to NC Hwy 4
- Nashville Pedestrian Project
- Extend Beechwood Drive to US 301 Bypass

- Widen Hunter Hill Road from Winstead Avenue to Halifax Road
- Widen Bethlehem Road from Beechwood Drive to Halifax Road
- Extend Kingston Avenue from NC Hwy 97 to US 301 Bypass
- Rocky Mount Rail to Trail (Bicycle/Pedestrian project)

Each road reconstruction project provides an opportunity to install features that improve transit access and passenger safety. For instance, sidewalks, crosswalks and passenger shelters can be added along the rights-of-way of arterial roads. In instances of road widening, pedestrian refuge islands can be constructed in roadway medians to provide safer crossings. The City of Rocky Mount, Edgecombe County, Nash County and TRT should ensure that proposed projects are welcoming to pedestrians and transit users, particularly in areas of high ridership or where new service might be added.

5. PUBLIC TRANSIT SERVICES

This section reviews the existing transportation services in the Study Area. While the chapter focuses on TRT services, other public transportation providers that operate in the Study Area are summarized as well.

TAR RIVER TRANSIT

Historical Overview

The transit system in the Study Area began in Rocky Mount as a privately owned and operated system. In 1983, the City of Rocky Mount took over operation of the service and acquired new city buses. Back then, the transportation program serving the City of Rocky Mount was referred to as Rocky Mount Transit (RMT). RMT was administered by the City with service operations contracted to a private management firm. A separate demand-responsive program, known as Nash-Edgecombe Transportation Services (NETS), served the adjacent counties. Eventually, the two programs merged and were jointly referred to as the Rocky Mount-Nash-Edgecombe Public Transportation System (RMNEPTS). In 2002, the agency adopted the current name of Tar River Transit (TRT).

Operational and Management Structure

TRT is responsible for providing both fixed-route and demand-responsive transportation services within the Study Area encompassing the entirety of Edgecombe and Nash Counties. Currently, fixed-route service is limited to the Rocky Mount urban area, with demand-responsive service covering the entire Study Area. TRT operates as an independent agency that is funded by the City of Rocky Mount, Edgecombe County, Nash County, NCDOT, and the FTA. TRT is overseen by two boards: a three-person governing board with representatives from the City of Rocky Mount (one city council member), Edgecombe County (one county commissioner), and Nash County (one county commissioner). The City's role has been to provide program administration, management oversight, policy development and implementation, and vehicle maintenance. TRT has one full-time Transit Administrator and one full-time Administrative Assistant. The transfer center and TRT offices are located at 111 Coastline Street in downtown Rocky Mount. The facility serves as a multi-modal transfer station for the Study Area, with passenger boarding and waiting areas available for TRT, Amtrak, and Greyhound. Taxicab services are also available at the transfer center.

Fixed-Route Service

TRT operates seven fixed routes and two shuttle services. Six of the fixed routes are loops and one is operated in an inbound and outbound pattern using the same streets. All routes meet at the transfer center. Fixed route service is available every day of the year, excluding Sundays, New Years Day, Martin Luther King, Jr. Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day. All fixed routes operate on hourly headways (weekdays and Saturdays). The buses run from 6:45 AM to 6:45 pm Monday through Friday and 9:15 AM to 5:45 pm on Saturdays.

The seven fixed routes and two shuttle services in Rocky Mount (see Figure 5.1) are as follows:

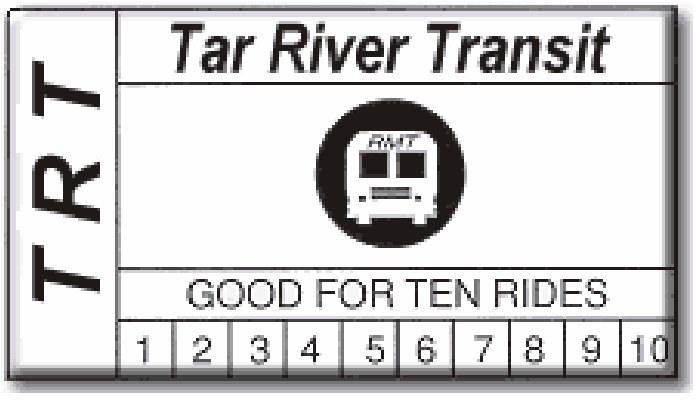
- *Route #1: Meadowbrook.* Service provided to: Rocky Mount, Edgecombe Community College, Eastern Avenue Park, Oakwood Shopping Center, Thorne Ridge Apartments, Weeks Armstrong Apartments, and Eckerd's Corner. Weekday service is provided from 7:15 AM until 6:45 pm with 12 round trips and hourly headways. Saturday service is available between 9:15 AM and 5:45 pm with nine round trips and hourly headways. This route interlines with the Oakwood route upon return to the Transfer Center (thus, allowing use of one bus to serve both routes).
- *Route #2: Oakwood.* Service provided to: downtown Rocky Mount, U.S. Post Office (Main Branch), East Rocky Mount Kidney Center, Edgecombe Department of Social Services, and Oakwood Shopping Center. Weekday service is provided Monday through Friday between 6:45 AM and 6:45 pm with 12 round trips and hourly headways. Saturday service operates from 9:45 AM until 5:45 pm with nine round trips and hourly headways. This route interlines with the Meadowbrook route upon return to the Transfer Center (thus, allowing use of one bus to serve both routes).
- *Route #3: South Rocky Mount.* Service provided to: downtown Rocky Mount, South Church Street, Kingston Avenue, Raleigh Road, and Rolling Meadows Apartments. Weekday service is provided between 7:15 AM and 6:45 pm with 12 round trips and hourly headways. On Saturday, nine round trips are provided between 9:15 AM and 5:45 pm and hourly headways. This route interlines with the Hillsdale route upon return to the Transfer Center (thus, allowing use of one bus to serve both routes).
- *Route #4: Hillsdale.* Service provided to: O.R. Pope Elementary, Edgecombe Shopping Center, Fairview - E. Grand - Raleigh Street Connection, Weeks Armstrong Apartments, Martin Luther King Park, and Leggett Road. Weekday service is provided between 6:45 AM and 6:15 PM with 12 daily round trips and hourly headways. On Saturday, eight round trips are operated from 9:45 AM until 5:15 PM and hourly headways. This route interlines with the South Rocky Mount route upon return to the Transfer Center (thus, allowing use of one bus to serve both routes).
- *Route #5: Golden East.* Service provided to: Hunter Hill Shopping Center, Wal-Mart, Golden East Mall, and Braswell Memorial Public Library. Weekday service is provided between 7:15 AM and 5:15 PM with 11 daily round trips and hourly headways. Saturday service is available from 9:15 AM until 4:45 PM with 16 round trips and half-hourly headways. This route interlines with the Ravenwood route upon return to the Transfer Center on weekdays only, as there is no Ravenwood service on Saturdays (thus, allowing use of one bus to serve both routes on weekdays).
- *Route #6: Ravenwood.* Service provided to: downtown Rocky Mount, Raleigh Road, West End Terrace Apartments, Burton Street, Ravenwood Drive, Kingston Avenue, and South Church Street. Weekday service is provided between 6:45 AM and 6:15 PM with 12 daily round trips and hourly headways. This route is not operated on Saturday, since the South Rocky Mount

Route serves the area. This route continues as Golden East upon return to the Transfer Center (thus, allowing use of one bus to serve both routes on weekdays).

- *Route #7: Sunset.* Service provided to: downtown Rocky Mount, Sunset Avenue, Holiday Inn - Gateway, Rocky Mount Medical Center, and Nash General Hospital. Weekday service is provided between 7:15 AM and 6:15 PM with 11 daily round trips and hourly headways. Saturday service is available from 9:15 AM until 5:15 PM.
- *Route #8 (Shuttle Service #1): Nash Community College / Little Easonburg Shuttle.* Service provided to: downtown Rocky Mount, Rocky Mount Senior High, Edwards Jr. High, Little Easonburg, McIntyre Acres, and Nash Community College. Weekday service is provided between 7:45 AM and 4:15 PM with 9 daily round trips and hourly headways. Saturday service is not offered.
- *Route #9 (Shuttle Service #2): Battleboro /Goldrock Shuttle.* Service provided to: Downtown Rocky Mount, TCI, Wal-Mart, Golden East Mall, Hospira, Battleboro Community Center, and Goldrock. Weekday service is provided between 8:00 AM and 5:45 PM with six daily round trips and one and a half hour headways. This service includes an intraday midday break in service from 11:45 AM to 2:00 PM. Saturday service is not offered.

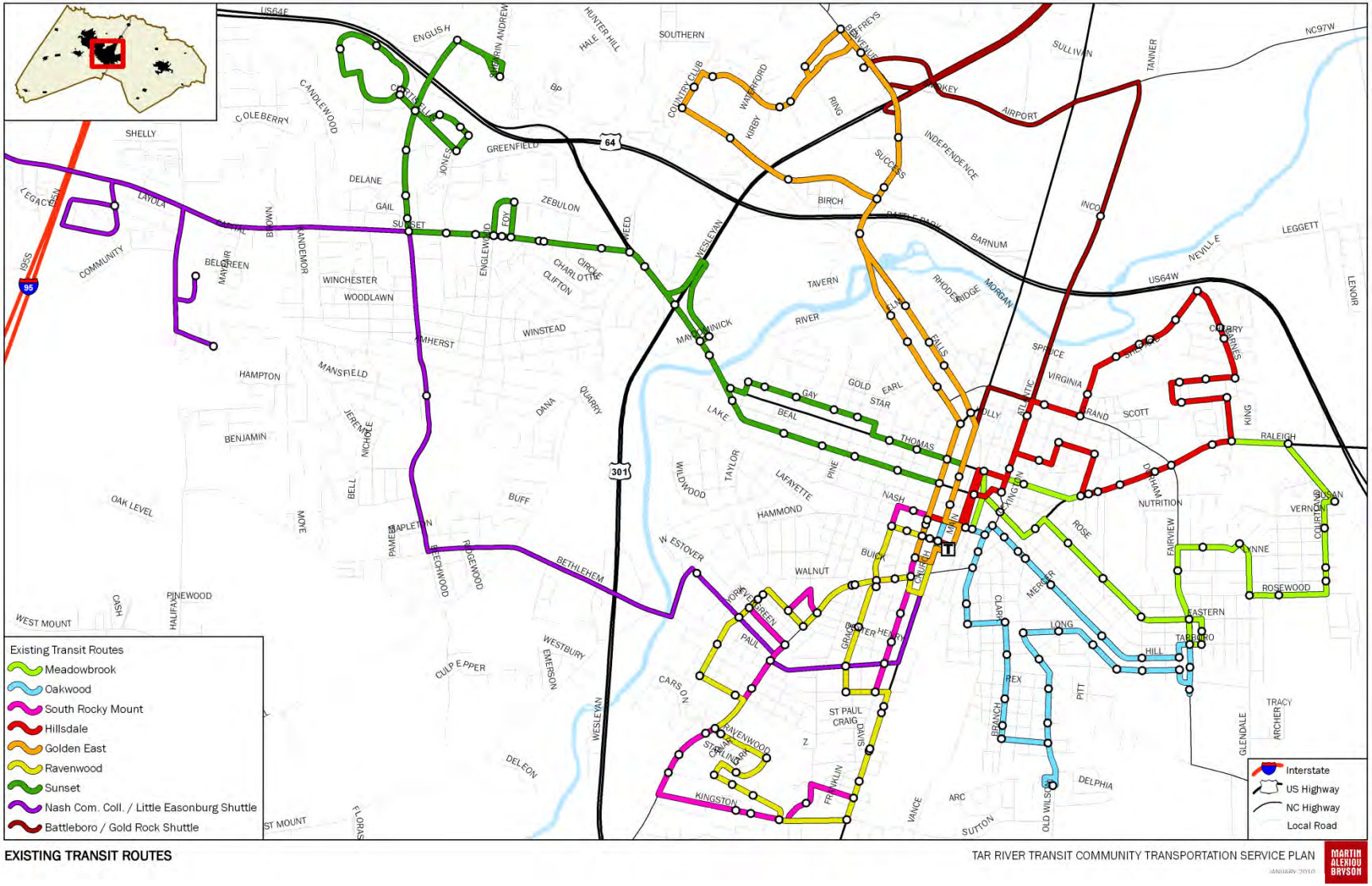
The fare structure for the fixed-routes within Rocky Mount is as follows:

- One-Way Transit Fare – $1.25. One-way rides may be purchased on-board buses using exact change.
- Reduced One-Way Transit Fare – $0.60 (available to Seniors (60+), Medicare cardholders, and individuals with disabilities)
- Tokens - $1.15 (each)
- Children under 42" – Free (limit three children per paying adult passenger)
- 10-Ride Tickets (shown on the right) – $11.25, can be purchased from the City of Rocky mount Collections Office during regular business hours.
- All-Day Tickets - $2.00 for full fare, $1.00 for reduced fare



- Transfers – Free. Riders must request transfer immediately upon boarding the bus. All transfers must be used within one hour of receipt.

Figure 5.1 Existing TRT Fixed Routes in Rocky Mount



Demand-Responsive Service

TRT's demand-responsive service is offered to any resident of Edgecombe or Nash Counties. The service provides door-to-door transportation and fulfils several functions:

- ADA-compliant service to complement the fixed-route services (also known as Paratransit service).
- Transportation for agency clients and clients of welfare programs (also known as Dial-A-Ride service or DARTS).
- Any other trips requested by individual riders (also known as Rural General Public service).

The rural demand service requires that passengers call by at least 2:00 PM on the previous day for Medicaid trips. The passengers need to call by 4:30 PM for all other trips including DARTS. The DARTS service is offered Monday through Friday from 6:15 AM until 6:15 PM and on Saturday from 9:15 AM until 5:15 PM. All other paratransit service is Monday – Friday from 6:15 PM until 5:30 PM.

Rural General Public Service

TRT has in place two Rural General Public (RGP) routes that provide transportation for any citizen living in Nash or Edgecombe Counties, meaning that individual riders anywhere in the Study Area can request trips. The service is not restricted (either in theory or in practice) to agency clients, and TRT does not ration the number of RGP trips it provides. For a one-way fare of $3 or $4 (Edgecombe and Nash County routes, respectively), residents who reside anywhere in Edgecombe or Nash Counties, in areas such as Nashville, Spring Hope, Castalia, Middlesex, Tarboro, Pinetops, Conetoe, and Whitakers, can ride to and from these areas from within the city limits of Rocky Mount. The routes are available Monday - Friday and also follow the same holiday schedule as the regular fixed route buses. The origination of each route is at the downtown bus station located at 111 Coastline Drive in Rocky Mount. Each route leaves from the downtown bus station at the following times:

- 8:15 AM
- 10:15 AM
- 1:15 PM
- 3:15 PM

Brochures for these routes are available at the Transfer Center in downtown Rocky Mount.

Historic Ridership

As shown in Table 5.1, total TRT systemwide ridership has decreased - albeit only slightly - in recent years. From 2004-05 to 2008-09, ridership has decreased by about 6.7 percent, with about to 6,800 one-way passenger-trips lost each year (approximately 1.7 percent annually). In terms of individual segments, total ridership has essentially remained steady on fixed routes of the TRT system – it

peaked at around 320,000 riders in the 2006-2007 Fiscal Year, but dropped to about 281,000 riders in the most recent FY 2008-2009. On the other hand, urban and rural paratransit ridership decreased by about 9.6 percent in recent years with approximately 1.6 percent annual reduction in passengers for urban paratransit and about a 2.4 percent reduction for rural paratransit.

TABLE 5.1
TAR RIVER TRANSIT HISTORICAL RIDERSHIP

	Fixed Routes		Paratransit Urban		Paratransit Rural		Systemwide	
Fiscal Year	Total Number	Annual Change	Total Number	Annual Change	Total Number	Annual Change	Total Number	Annual Change
2002-03	282,975	N/A	8,659	N/A				
2003-04	279,556	-1.21%	8,281	-4.37%				
2004-05	297,958	6.58%	8,549	3.24%	99,547	N/A	406,054	N/A
2005-06	308,953	3.69%	11,399	33.34%	89,203	-10.39%	409,555	0.86%
2006-07	320,392	3.70%	5,917	-48.09%	90,055	0.96%	416,364	1.66%
2007-08	292,198	-8.80%	7,325	23.80%	94,295	4.71%	393,818	-5.41%
2008-09	280,902	-3.87%	7,835	6.96%	89,962	-4.60%	378,699	-3.84%
Total Growth	**-2,073**	**-0.73%**	**-824**	**-9.52%**	**-9,585**	**-9.63%**	**-27,355**	**-6.74%**
Average Annual Growth	**-346**	**-0.12%**	**-137**	**-1.59%**	**-2,396**	**-2.41%**	**-6,839**	**-1.68%**

Sources:
1. FY 2004/05/06 /07 NTD Transit Statistics: NCDOT Summary of Agency Statistics
2. US Bureau Census Data

Historic Service Levels

As shown in Table 5.2, TRT has, on average, slightly increased annual service levels, both in terms of vehicle service hours and miles, over the past seven years. In terms of vehicle service hours, available data from 2004-05 to 2008-09 shows a systemwide increase of about 4.6 percent, with 443 vehicle service hours added each year (approximately 1.1 percent annual growth). During the same time period, vehicle service miles increased systemwide by about 1.3 percent, with 3,802 vehicle service miles added each year (approximately 0.3 percent annual growth). In terms of individual segments of the transit system, the fixed routes experienced a very pronounced growth from 2002-03 to 2008-09, with vehicle service hours on fixed routes increasing by about 9.4 percent and vehicle service miles increasing by 9 percent with 3,810 vehicle service miles (approximately 1.5 percent annual growth). The statistics unveil an interesting aspect regarding TRT's urban paratransit – both the vehicle service hours and vehicle service miles have declined in recent years (by 12.0 percent and 6.6 percent respectively from FY 2002-03 to FY 2008-09). It should be noted that urban paratransit vehicle service hours had decreased at a much more rapid pace in terms of percentage decline than vehicle service miles. On the other hand, rural paratransit service had remained almost constant in the 2004-05 to 2008-09 time period, with only a modest average annual growth in vehicle service hours of 0.6 percent and average annual growth in vehicle service miles of 0.15 percent.

TABLE 5.2
TAR RIVER TRANSIT HISTORICAL SERVICE LEVELS

	Fixed Routes		Paratransit Urban		Paratransit Rural		Systemwide	
Fiscal Year	Total Number	Annual Change	Total Number	Annual Change	Total Number	Annual Change	Total Number	Annual Change
Vehicle Service Hours								
2002-03	17,765	N/A	4,675	N/A				
2003-04	17,803	0.21%	4,168	-10.84%				
2004-05	18,178	2.11%	4,321	3.67%	47,641	N/A	70,140	N/A
2005-06	18,322	0.79%	5,472	26.64%	46,152	-3.13%	69,946	-0.28%
2006-07	18,468	0.80%	3,140	-42.62%	46,274	0.26%	67,882	-2.95%
2007-08	19,364	4.85%	4,026	28.22%	49,961	7.97%	73,351	8.06%
2008-09	19,429	0.34%	4,113	2.16%	48,817	-2.29%	72,359	-1.35%
Total Growth	**1,664**	**9.37%**	**-562**	**-12.02%**	**1,176**	**2.47%**	**2,219**	**4.58%**
Average Annual Growth	**237**	**1.56%**	**-81**	**-2.00%**	**234**	**0.62%**	**443**	**1.14%**
Vehicle Service Miles								
2002-03	296,150	N/A	70,305	N/A				
2003-04	297,216	0.36%	64,202	-8.68%				
2004-05	302,431	1.75%	73,685	14.77%	1,106,199	N/A	1,482,315	N/A
2005-06	307,287	1.61%	91,858	24.66%	1,046,025	-5.44%	1,445,170	-2.51%
2006-07	312,266	1.62%	52,762	-42.56%	1,292,868	23.60%	1,657,896	14.72%
2007-08	321,743	3.03%	68,717	30.24%	1,134,058	-12.28%	1,524,518	-8.05%
2008-09	322,828	0.34%	65,675	-4.43%	1,112,829	-1.87%	1,501,332	-1.52%
Total Growth	**26,678**	**9.01%**	**-4,630**	**-6.59%**	**6,630**	**0.60%**	**19,017**	**1.28%**
Average Annual Growth	**3,810**	**1.50%**	**-662**	**-1.10%**	**1,325**	**0.15%**	**3,802**	**0.32%**

Sources:
1. FY 2004/05/06 /07 NTD Transit Statistics: NCDOT Summary of agency stats.
2. US Bureau Census Data

Monthly Ridership

TRT systemwide ridership patterns during the FY 2008-09 were fairly similar across different segments of the transit system, with the summer and early fall season outperforming the winter season, as shown in Table 5.3, Table 5.4 and Figure 5.2. This kind of ridership pattern is expected, as outside conditions, specifically inclement weather, directly influences individual ridership decisions, especially when waiting at bus stops without shelter. Urban paratransit ridership was

virtually unaffected by seasonal shifts though as the majority of its passengers are captive riders who need to make their trips without regard to time of year.

Figure 5.2 TRT Fixed-Route Monthly Ridership (FY 2008-09)

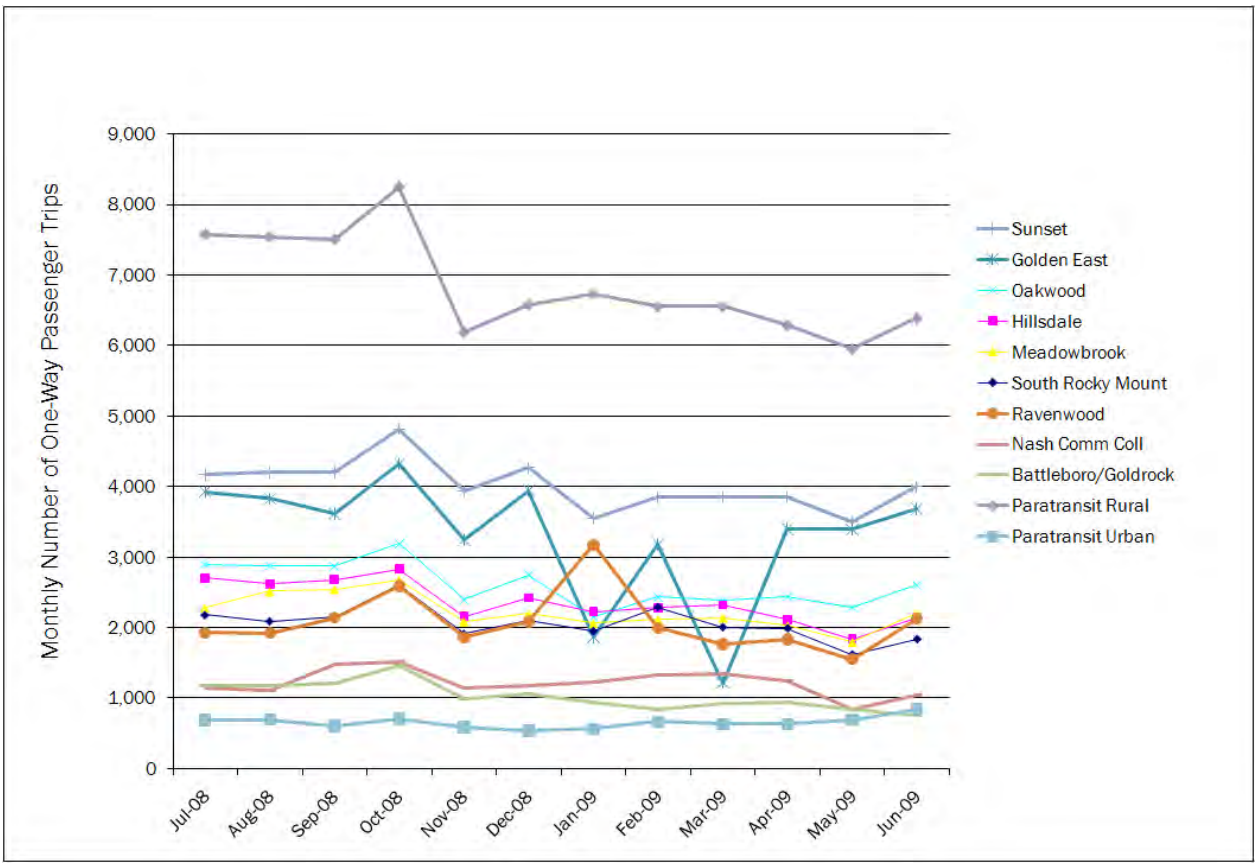


TABLE 5.3
TRT FIXED-ROUTE MONTHLY RIDERSHIP (FY 2008-09)

Month	S. Rocky Mount	% of Monthly Average	Hillsdale	% of Monthly Average	Meadowbrook	% of Monthly Average	Oakwood	% of Monthly Average	Golden East	% of Monthly Average	Ravenwood	% of Monthly Average	Sunset	% of Monthly Average	Nash Comm College	% of Monthly Average	Battleboro/Gold rock	% of Monthly Average
7/8	2,178	105.8%	2,701	114.5%	2,282	102.7%	2,895	111.1%	3,924	118.8%	1,929	92.7%	4,173	103.9%	1,136	93.6%	1,173	114.5%
8/8	2,088	101.4%	2,617	110.9%	2,514	113.2%	2,878	110.4%	3,831	116.0%	1,921	92.3%	4,203	104.6%	1,112	91.6%	1,180	115.1%
9/8	2,147	104.2%	2,682	113.7%	2,545	114.6%	2,871	110.2%	3,619	109.6%	2,142	103.0%	4,208	104.7%	1,482	122.1%	1,203	117.4%
10/8	2,607	126.6%	2,832	120.0%	2,676	120.5%	3,191	122.4%	4,324	130.9%	2,590	124.5%	4,818	119.9%	1,518	125.1%	1,468	143.2%
11/8	1,908	92.6%	2,156	91.4%	2,088	94.0%	2,397	92.0%	3,247	98.3%	1,861	89.5%	3,933	97.9%	1,134	93.5%	994	97.0%
12/8	2,108	102.4%	2,421	102.6%	2,199	99.0%	2,749	105.5%	3,944	119.4%	2,086	100.3%	4,268	106.2%	1,169	96.3%	1,054	102.8%
1/9	1,947	94.5%	2,222	94.2%	2,063	92.9%	2,153	82.6%	1,866	56.5%	3,173	152.5%	3,557	88.5%	1,221	100.6%	932	90.9%
2/9	2,293	111.3%	2,280	96.6%	2,113	95.1%	2,430	93.2%	3,181	96.3%	1,993	95.8%	3,852	95.9%	1,329	109.5%	836	81.6%
3/9	2,004	97.3%	2,321	98.4%	2,140	96.3%	2,381	91.4%	1,215	36.8%	1,764	84.8%	3,856	96.0%	1,352	111.4%	915	89.3%
4/9	1,989	96.6%	2,113	89.6%	2,031	91.4%	2,440	93.6%	3,397	102.9%	1,830	88.0%	3,851	95.8%	1,236	101.9%	946	92.3%
5/9	1,611	78.2%	1,835	77.8%	1,794	80.8%	2,288	87.8%	3,392	102.7%	1,553	74.7%	3,499	87.1%	833	68.7%	841	82.1%
6/9	1,834	89.1%	2,133	90.4%	2,209	99.5%	2,601	99.8%	3,686	111.6%	2,122	102.0%	3,995	99.4%	1,038	85.5%	756	73.8%

Subtotal	24,714		28,313		26,654		31,274		39,626		24,964		48,213		14,560		12,298	
Monthly Average	2,060		2,359		2,221		2,606		3,302		2,080		4,018		1,213		1,025	
Percent of Subsystem Total		9.9%		11.3%		10.6%		12.5%		15.8%		10.0%		19.2%		5.8%		4.9%
Percent of Systemwide Total		7.3%		0.7%		7.8%		9.2%		11.6%		7.3%		14.2%		4.3%		3.6%
Source: 2009 TRT OPSTATS																		

	TABLE 5.4 TRT DEMAND-RESPONSIVE MONTHLY RIDERSHIP (FY 2008-09)					
	Paratransit Urban		Paratransit Rural		Systemwide (including Fixed-Routes)	
Month	Total Number	% of Monthly Average	Total Number	% of Monthly Average	Total Number	% of Monthly Average
7-8	687	105.2%	7,578	110.7%	30,656	108.0%
8-8	693	106.1%	7,539	110.2%	30,576	107.7%
9-8	605	92.7%	7,505	109.7%	31,009	109.3%
10/8	703	107.7%	8,246	120.5%	34,973	123.2%
11/8	587	89.9%	6,192	90.5%	26,497	93.4%
12/8	534	81.8%	6,584	96.2%	29,116	102.6%
1/9	566	86.7%	6,731	98.4%	26,431	93.1%
2/9	664	101.7%	6,557	95.8%	27,528	97.0%
3/9	633	96.9%	6,558	95.8%	25,139	88.6%
4/9	630	96.5%	6,290	91.9%	26,753	94.3%
5/9	693	106.1%	5,956	87.0%	24,295	85.6%
6/9	840	128.7%	6,391	93.4%	27,605	97.3%
Subtotal	7,835		82,127		340,578	
Monthly Average	653		6,844		28,382	
Percent of Systemwide Total		**2.3%**		**24.1%**		
Source: 2009 TRT OPSTATS						

PEER COMPARISON

TRT ranks in the middle when compared to other similar-size North Carolina transit agencies both in regards to Vehicles Operated in Maximum Service (VOMS)(see Table 5.5), as well as VOMS per thousand capita (see Table 5.6). In regards to VOMS statistics, TRT is similar to transit agencies operating in nearby Goldsboro and Fayetteville.

TABLE 5.5
PEER-COMPARISON OF NC FIXED-ROUTE TRANSIT SERVICES: VOMS PER THOUSAND CAPITA

			FY 06 (NTD 2006 datasets)				FY06 derived data	
City	Agency	2007 City Population	Vehicle revenue miles	Annual unlinked trips	Revenue hours	VOMS	VOMS per thousand capita (city population)	Revenue hours per capita (city population)
Chapel Hill	CHT	54,904	1,817,888	5,874,247	145,333	61	1,111	2.647
Charlotte	CATS	674,658	10,370,824	20,202,584	764,686	255	378	1.133
Wilmington	Wave Transit	100,746	1,198,753	1,411,221	88,991	25	248	0.883
Asheville	ATS	76,764	840,690	1,149,337	58,223	16	208	0.758
Durham	DATA	222,472	2,277,228	4,448,972	166,272	37	166	0.747
Henderson County	ACT	12,747	86,307	64,562	6,456	2	157	0.506
Winston-Salem	WSTA	224,889	1,433,380	2,861,769	119,564	34	151	0.532
Raleigh	CAT	367,098	2116629	3937310	165178	48	131	0.450
Hickory	PTWS	40,520	217,170	144,228	20,738	5	123	0.512
High Point	Hi-Tran	98,791	406,313	722,476	29,644	11	111	0.300
Goldsboro	Gateway	37,341	196,466	209,358	15,983	4	107	0.428
Rocky Mount	**Tar River Transit**	**56,288**	**307,287**	**308,953**	**18,322**	**6**	**107**	**0.326**
Greensboro	GTA	248,111	1,337,904	3,030,016	106,656	25	101	0.430
Salisbury	Salisbury Transit	31,023	137,883	138,633	9,557	3	97	0.308
Fayetteville	FAST	181,453	704,522	1,380,910	46,815	16	88	0.258
Gastonia	Gastonia Transit	72,779	300,871	282,569	21,147	6	82	0.291
Wilson	WTS	49,947	190,655	163,640	12,629	4	80	0.253
Concord/Kannapolis	Rider	113,873	446,131	303,100	25,262	6	53	0.222

Greenville	GREAT	76,222	203,998	226,010	14,251	4	52	0.187
Cary	C-Tran	132,443	160,990	23,354	9,946	5	38	0.075
Jacksonville	Jacksonville Transit	77,301	56,798	11,575	4,114	1	13	0.053
Total		**2,220,808**	**24,808,687**	**46,894,824**	**1,849,767**	**574**	**258**	**0.833**

VOMS = Vehicles Operated in Maximum Service

These data are for fixed-route service ('bus' in National Transit Database) only.

Agencies are listed from smallest to largest, based on VOMS per capita

Sources:

2007 City Population: NC Office of State Budget and Management, State Demograpics Branch website. Concord and Kannapolis are combined.

The City population will not necessarily correspond exactly to the service area population, but is reasonable approximateion for the purposes of this table.

FY 06 NTD transit statistics: NDCOT Summary of agency stats

FY 07 NTD transit statistics: NTD agency profiles

TABLE 5.6
PEER-COMPARISON OF NC FIXED-ROUTE TRANSIT SERVICES: REVENUE HOURS PER CAPITA

			FY 06 (NTD 2006 datasets)				FY06 derived data	
			FY06	FY06	FY06	FY06	FY06	FY06
City	Agency	2007 City Population	Vehicle revenue miles	Annual unlinked trips	Revenue hours	VOMS	VOMS per thousand capita (city population)	Revenue hours per capita (city population)
Chapel Hill	CHT	54,904	1,817,888	5,874,247	145,333	61	1,111	2.647
Charlotte	CATS	674,658	10,370,824	20,202,584	764,686	255	378	1.133
Wilmington	Wave Transit	100,746	1,198,753	1,411,221	88,991	25	248	0.883
Asheville	ATS	76,764	840,690	1,149,337	58,223	16	208	0.758
Durham	DATA	222,472	2,277,228	4,448,972	166,272	37	166	0.747
Winston-Salem	WSTA	224,889	1,433,380	2,861,769	119,564	34	151	0.532
Hickory	PTWS	40,520	217,170	144,228	20,738	5	123	0.512
Henderson County	Apple Country Transit	12,747	86,307	64,562	6,456	2	157	0.506
Raleigh	CAT	367,098	2,116,629	3,937,310	165,178	48	131	0.450
Greensboro	GTA	248,111	1,337,904	3,030,016	106,656	25	101	0.430
Goldsboro	Gateway	37,341	196,466	209,358	15,983	4	107	0.428
Rocky Mount	**Tar River Transit**	**56,288**	**307,287**	**308,953**	**18,322**	**6**	**107**	**0.326**
Salisbury	Salisbury Transit	31,023	137,883	138,633	9,557	3	97	0.308
High Point	Hi-Tran	98,791	406,313	722,476	29,644	11	111	0.300
Gastonia	Gastonia Transit	72,779	300,871	282,569	21,147	6	82	0.291
Fayetteville	FAST	181,453	704,522	1,380,910	46,815	16	88	0.258

Wilson	Wilson Transit System	49,947	190,655	163,640	12,629	4	80	0.253
Concord/Kannapolis	Rider	113,873	446,131	303,100	25,262	6	53	0.222
Greenville	GREAT	76,222	203,998	226,010	14,251	4	52	0.187
Cary	C-Tran	132,443	160,990	23,354	9,946	5	38	0.075
Jacksonville	Jacksonville Transit	77,301	56,798	11,575	4,114	1	13	0.053
Total		**2,220,808**	**24,808,687**	**46,894,824**	**1,849,767**	**574**	**258**	**0.833**

VOMS = Vehicles Operated in Maximum Service

These data are for fixed-route service ('bus' in National Transit Database) only.

Agencies are listed from smallest to largest, based on VOMS per capita

Sources:

2007 City Population: NC Office of State Budget and Management, State Demograpics Branch website. Concord and Kannapolis are combined.

The City population will not necessarily correspond exactly to the service area population, but is reasonable approximateion for the purposes of this table.

FY 06 NTD transit statistics: NDCOT Summary of agency stats

FY 07 NTD transit statistics: NTD agency profiles

FINANCIAL CHARACTERISTICS

Cost Allocation Model

TRT's urban system operating expenses for FY 2008-09 are shown in Table 5.7. Expenses for the fiscal year totaled $793,167. The specific operating cost line items were allocated to a quantity of service (vehicle service hours, vehicle service miles, vehicle, or fixed cost) for the purposes of constructing a cost allocation model. Employee services, for example, were allocated to fixed costs, while vehicle fuel costs were allocated to vehicle service miles. When this information is combined with unit quantities of service, the following cost allocation model can be developed:

Urban Operating Cost = $33.06 x Annual Vehicle Service Hours + $0.03 x Annual Vehicle Service Miles + $913 x Number of Revenue Vehicles + $100,268 in Annual Fixed Costs.

The fully-allocated hourly cost is calculated by dividing the total operating cost by the annual vehicle service hours operated, which yields $33.69. The cost equation and fully-allocated hourly cost, scaled to account for inflation, can be used to estimate costs associate with service changes, such as the addition of a new route or changes in the hours of service.

Similar information was collected and reviewed for the rural system, as shown in Table 5.8. The fully-allocated hourly cost of operating rural system is calculated by dividing the total operating cost by the annual vehicle service hours operated, which yields $26.89, about 20 percent lower than the hourly cost of operating the TRT urban system.

TABLE 5.7
TRT URBAN TRANSIT COST MODEL (FY 2008-09)

Line Item	Expense	Fixed Costs	Vehicle Service		Revenue Vehicle
			Hours	Miles	
Employee Services	$21,184	$21,184			
Office Expense	$15,992	$15,992			
Advertising	$0	$0			
Insurance	$25,000				$25,000
Utilities	$13,803				
Communications	$30,069				
Operating Supplies	$0		$0		
Vehicle & Equipment Operating	$179,600			$179,600	
Contract Services	$416,910		$416,910		
Professional Development	$87,307	$87,307			
Department Service Allocation and Administrative	$3,302		$3,302		
Total	**$793,167**	**$124,483**	**$420,212**	**$179,600**	**$25,000**
Unit Quantities		N/A	23,542	388,503	7
Cost Per Unit		*$124,483*	*$17.85*	*$0.46*	*$3,571*
Fully Allocated Cost per Hour of Service		**$33.69**			

Source: 2009 TRT OPSTATS

TABLE 5.8
TRT RURAL TRANSIT COST MODEL (FY 2008-09)

Line Item	Expense	Fixed Costs	Vehicle Service		Revenue Vehicle
			Hours	Miles	
Employee Services	$55,670	$55,670			
Office Expense	$3,655	$3,655			
Advertising	$1,431	$1,431			
Insurance	$25,000				$25,000
Utilities	$15,866	$15,866			
Communications	$1,379				$1,379
Operating Supplies	$3,938		$3,938		
Vehicle & Equipment Operating	$320,118			$320,118	
Contract Services	$777,640		$777,640		
Professional Development	$86,683	$86,683			
Department Service Allocation and Administrative	$21,416		$21,416		
Total	**$1,312,796**	**$163,305**	**$802,994**	**$320,118**	**$26,379**
Unit Quantities		N/A	48,817	1,112,829	27
Cost Per Unit		*$163,305*	*$16.45*	*$0.29*	*$977*
Fully Allocated Cost per Hour of Service		**$26.89**			
Source: 2009 TRT OPSTATS					

Revenue Sources

Operating Costs

In FY 2008-09, TRT received revenues from four sources to subsidize its operating costs, as shown in

TABLE 5.9
TRT REVENUE SOURCES: OPERATING COSTS (FY 2008-09)

. The operating costs of operating TRT's urban fixed-route service were funded primarily by federal funds (35 percent) and farebox revenue (31 percent). State funding and local funding contributed 17 percent each to the total revenues. In terms of urban demand-responsive service (DARTS), federal funding comprised the bulk of revenue (51 percent), followed by state assistance (42 percent), and farebox revenue (7 percent). Lastly, rural demand-resonsive service revenue in FY 2008-09 came primarily from farebox revenue and contracts (92 percent), followed by state assistance (8 percent).

TABLE 5.9 TRT REVENUE SOURCES: OPERATING COSTS (FY 2008-09)			
Source	**Urban Revenue**	**Urban Paratransit**	**Rural Revenue**
Federal assistance	$273,048	$76,535	$0
State assistance	$136,525	$64,291	$116,401
Local assistance	$136,525	N/A	$0
Farebox/Contracts	$244,945	$10,442	$1,298,076
Total Assistance	**$791,042**	**$151,267**	**$1,414,477**
Source: 2009 TRT OPSTATS			

Capital Costs

In FY 2008-09, TRT received revenues from four sources to subsidize its capital costs, as shown in Table 5.10.

TABLE 5.10 TRT REVENUE SOURCES: CAPITAL COSTS (FY 2008-09)			
Source	**Urban Revenue**	**Urban Paratransit**	**Rural Revenue**
Federal assistance	$212,121	N/A	N/A
State assistance	$59,036	N/A	$194,839
Local assistance	$26,516	N/A	N/A
Farebox/Contracts			$21,649
Total Assistance	$297,674		$216,488
Source: 2009 TRT OPSTATS			

Performance Analysis

An analysis of ridership and operating data on a service category basis was conducted in order to gain further insight into the efficiency and effectiveness of TRT services. The available FY 2008-09 data was reviewed to identify passenger activity levels, marginal costs, allocated costs, allocated subsidy, farebox recovery ratio, and average fares. The results of this performance analysis are shown in Table 5.11.

Service effectiveness is perhaps best measured by "productivity," which is defined as the number of one-way passenger trips provided per each service hour. As seen in Table 5.11, systemwide TRT productivity was at 5.1 one-way passenger trips per vehicle service hour in Fiscal Year 2008-09. Individually, the fixed-route portion of TRT had a productivity of 11.9, while the rural paratransit achieved a productivity of 1.8.

Another measure of transit's effectiveness is the number of one-way passenger trips provided per vehicle service mile. As seen in Table 5.11, systemwide, TRT stood at 0.25 one-way passenger trips per vehicle service mile in Fiscal Year 2008-09. Individually, the fixed-route portion of TRT had this measure of productivity calculated at 0.72, while the rural paratransit section stood at 0.08.

The financial efficiency of a given transit system can be measured by the operating cost per one-way passenger trip. Systemwide, TRT's operating cost per one-way passenger trip in Fiscal Year 2008-09 was $5.68, with the fixed-route segment performing better than the rural demand-responsive segment at $2.82 and $14.59 in operating cost per passenger trip, respectively. As expected, TRT has subsidized each passenger trip – subtracting farebox revenue from the total cost and dividing it by the number of one-way passenger trips yields the subsidy required per one-way passenger trip. The operating subsidy per passenger is an important measure of a transit system performance particularly because it directly compares the most significant public input (public subsidy funding) with the most significant output (one-way passenger trips). Systemside, TRT required a subsidy of $4.98 per one-way passenger trip in Fiscal Year 2008-09. Again, the fixed routes segment of the system fared better than the rural demand-responsive segment – the former required a subsidy of $1.95 per one-way passenger trip, and the latter required $14.42.

Lastly, one known measure of a transit system's cost-effectiveness is the farebox recovery ratio. The measure is particularly useful in finding out whether the mandated minimums required for obtaining state funding were met. The systemwide farebox recovery ratio was at 12.4 percent, with the urban segment achieving a farebox recovery ratio of around 30.9 percent and the rural segment only 1.2 percent.

TABLE 5.11
TRT PERFORMANCE ANALYSIS (FY 2008-09)

Line Item	Fixed Routes/ Paratransit Urban	Paratransit Rural	Systemwide
One-way Passenger Trips	280,902	89,962	370,864
Operating Expenses	$793,167	$1,312,796	$2,105,963
Passenger Fares	$244,945	$15,178	$260,123
Vehicle Service Hours	23,542	48,817	72,359
Vehicle Service Miles	388,503	1,112,829	1,501,332
Passenger Trips / Vehicle Service Hours	11.9	1.8	5.1
Passenger Trips / Vehicle Service Miles	0.72	0.08	0.25
Operating Cost per Passenger - Trip	$2.82	$14.59	$5.68
Operating Subsidy per Passenger - Trip	$1.95	$14.42	$4.98
Farebox Recovery Ratio	30.88%	1.16%	12.35%
Fare per passenger trip	**$0.87**	**$0.17**	**$0.70**

Source: 2009 TRT OPSTATS

Capital Assets

Vehicle Fleet

TRT has a fleet of 43 vehicles – seven Orion full-size urban buses (used to operate fixed-routes), two Ford van coaches (used to operate fixed-route shuttles) and 34 paratransit vans (used to operate RGP, DARTS, and ADA demand-responsive service in the (data as of April 2010). Nearly all vehicles are ADA-accessible. Table 5.12 presents more details about TRT's vehicle fleet along with a projected replacement schedule based on industry standards.

Vehicle Utilization

The fixed routes segment of TRT typically utilizes four of the seven available Orion buses in order to provide consistent service throughout the service day. The paratransit segment typically uses the majority of the available vans with a reasonable spare ratio.

TABLE 5.12
TRT VEHICLE FLEET (FY 2008-09)

YEAR	MODEL	VEHICLE TYPE	SEATING CAPACITY	# WHEELCHAIR TIEDOWNS	ODOMETER READING	YEAR OF PLANNED REPLACEMENT
Urban Vehicles						
2004	Orion	M. Bus	30	2	163,217	2016
2004	Orion	M. Bus	30	2	161,282	2016
2004	Orion	M. Bus	30	2	13,287	2016
2004	Orion	M. Bus	30	2	160,623	2016
2004	Orion	M. Bus	30	2	163,315	2016
2004	Orion	M. Bus	30	2	161,501	2016
2004	Orion	M. Bus	30	2	149,612	2016
2006	Ford	Coach	22	2	89,331	2011
2006	Ford	Coach	22	2	102,849	2011
Rural Vehicles						
2006	Ford	Lift	10	2	173,073	2011
2006	Ford	Lift	10	2	191,393	2011
2006	Ford	Lift	10	2	203,438	2011
2006	Ford	Lift	10	2	144,188	2011
2006	Ford	Lift	10	2	183,166	2011
2006	Ford	Lift	10	2	98,228	2011
2006	Ford	Lift	10	2	107,944	2011
2006	Ford	Lift	10	2	88,902	2011
2006	Ford	Lift	10	2	93,348	2011
2006	Ford	Lift	10	2	136,385	2011
2007	Ford	Lift	10	2	101,515	2012
2008	Ford	Lift	10	2	39,229	2013
2008	Ford	Lift	10	2	80,680	2013
2008	Ford	Lift	9	2	73,706	2013
2008	Ford	Lift	9	2	78,176	2013
2008	Ford	Lift	9	2	83,697	2013
2008	Ford	Lift	9	2	87,956	2013
2009	Ford	Lift	9	2	27,522	2014
2009	Ford	Lift	9	2	31,018	2014
2009	Ford	Lift	9	2	20,201	2014
2009	Ford	Lift	9	2	35,008	2014
2009	Ford	Lift	9	2	35,240	2014
2006	Ford	Std	14	0	135,993	2011
2006	Ford	Std	14	0	111,884	2011

2006	Ford	Std	14	0	161,324	2011
2006	Ford	Std	14	0	136,042	2011
2006	Ford	Std	14	0	197,551	2011
2007	Ford	Std	14	0	53,170	2012
2007	Ford	Std	14	0	28,401	2012
2007	Ford	Std	10	2	81,688	2012
2007	Ford	Std	10	2	89,406	2012
2007	Ford	Std	10	2	98,494	2012
2007	Ford	Std	10	2	109,968	2012
2009	Ford	Std	14	0	36,815	2014
Source: TRT (data as of May 2010). Year of Planner Replacement schedule – M/A/B.						

OTHER TRANSIT OPTIONS IN THE STUDY AREA

Taxi Companies

There are a limited number of taxicab companies that operate within Rocky Mount city limits, including City Cab Company, Rocky Mount Cab, United Cab, and Modern Taxi. Checker Cab serves Tarboro in Edgecombe County. These companies provide demand responsive service with standard fees based on mileage, waiting time, and number of stop locations.

Greyhound Bus Service

Greyhound Lines, Inc. is the only provider of scheduled inter-city bus service within the Study Area. The only Greyhound stop in the Study Area is in Rocky Mount at the TRT transfer Center. Greyhound serves many locations directly from Rocky Mount, including three daily departures and arrivals from Raleigh and four daily departures and three daily arrivals from Richmond. A wide range of other destinations (such as Charlotte, Atlanta and Washington D.C.) can be reached by making transfers, particularly in Raleigh and Richmond.

Passenger Rail Service

The AMTRAK Train Station serving the Study Area is located at 101 Coastline Street in downtown Rocky Mount. The train station is open 24 hours a day and is currently served by eight Amtrak trains each day (see **Error! Reference source not found.**):

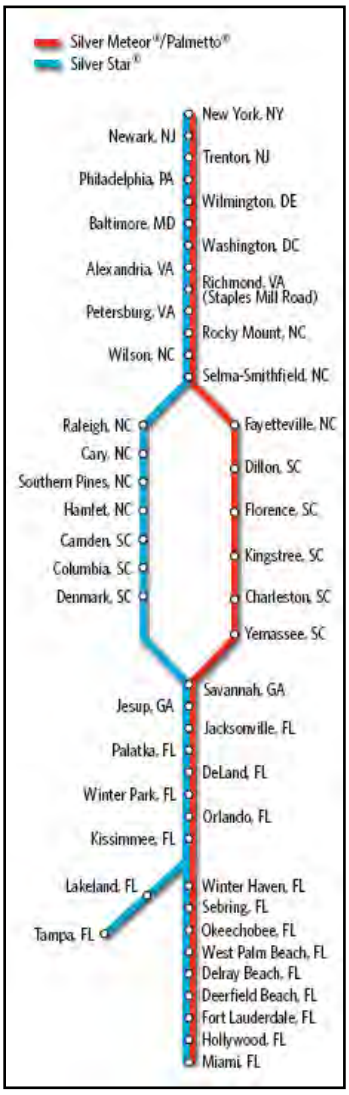
- The Palmetto (train 89 southbound and 90 northbound), between New York, NY and Savannah, Georgia.

- The Carolinian (train 79 southbound and 80 northbound), between New York, NY and Charlotte. This is a state-supported service and provides links to North Carolina destinations including Raleigh, Durham and Greensboro.

- Silver Star (train 91 southbound and 92 northbound), between New York, NY and Jacksonville, FL.

- Silver Meteor (train 97 southbound and 98 northbound), between New York, NY and Jacksonville, FL.

Figure 5.3 Existing Long-Distance AMTRAK Routes Serving Rocky Mount



The scheduled times are based on the demands of the main long-distance markets the trains serve. Currently, all calls at Rocky Mount are in the afternoon or evening southbound, and early morning and afternoon northbound thus offering convenient daytime service to many nearby destinations as well as overnight long-distance travel opportunities (see

Figure 5.4).

Figure 5.4 Existing North Carolina AMTRAK Routes and Stations

Source: AMTRAK website

Air Travel

There are two small airports in the Study Area. The nearest regional airport serving the Study Area is the Rocky Mount-Wilson Regional Airport (RWI) located on Highway 97 just 6.5

miles south of the city of Rocky Mount. RWI has a 7,000 foot lighted runway with instrument landing system, making it ideal for corporate traffic. The Tarboro-Edgecombe Airport, located in Tarboro, the county seat of Edgecombe County, is a general aviation facility with a 4,000 foot, paved and lighted runway. Smaller corporate planes doing business in Tarboro frequently use that facility.

The main airport serving the Study Area is Raleigh-Durham International Airport (RDU). RDU, the nation's 36th largest airport is located in Raleigh, approximately a one hour drive from the Study Area. RDU offers 400 daily departures by several major airlines and regional carriers that provide direct non-stop flights to over 40 U.S. destinations, the Caribbean, Canada and Europe. In nearby counties, Fayetteville Regional Airport currently offers service to Charlotte on US Airways Express and to Atlanta on Delta. Pitt Greenville Airport currently offers service to Charlotte on US Airways Express. Kinston Regional Jetport no longer has scheduled service.

6. CURRENT TAR RIVER TRANSIT SERVICE REVIEW

FIXED-ROUTES SYSTEMWIDE REVIEW

This section summarizes the issues with the existing fixed-route service in Rocky Mount, based on the analyses presented earlier and input from stakeholders. This diagnosis forms a key input into the proposals for the future route structure.

Overall, the fixed-route system provides a basic level of access to most parts of Rocky Mount, including all of the major destinations. Most residential areas are within a quarter of a mile of fixed-route service (see Figure 6.1). The main areas of public housing are served directly, and the majority of traditional grid-pattern neighborhoods are within a quarter-mile of a transit stop. The key destinations, such as the downtown public offices, Golden East Crossing Mall, Wal-Mart, and Nash General Hospital, are served directly. Most commercial and institutional areas are also served directly.

The ease and directness of trips is inevitably limited by the level of available resources, the dispersed nature of the key destinations, and lack of any transfer points aside from the existing Transfer Center downtown. Despite these limitations, the current route network offers many direct trips. In particular, all routes offer residents a direct trip to or from downtown. All routes serve at least one retail area, meaning that residents have a direct trip to or from a pharmacy and a grocery store.

The opportunities for improvement generally fall into three categories:

1. Increasing the service span for fixed-route service to include later evening runs and Sunday service. Currently, evening trips are only available until 6:45PM at the latest, Monday-Saturday, and there is no Sunday service at all.

2. Providing a basic level of fixed-route service to the parts of Rocky Mount that are not currently served. This includes (a) peripheral residential areas, such as Cokey Road, or Northwest Rocky Mount past the intersection of Benvenue Road and Gold Rock Road; (b) additional employment areas, such as the establishments along US 301; and (c) nearby areas that are beyond the city limits but are part of Rocky Mount's area of influence, such as the US 301 corridor toward Sharpsburg.

3. Improving the quality (including directness and frequency) where there is already service – particularly for the most important destinations such as Golden East Mall, US 301 Highway area, and Nash General Hospital, where additional capacity is also required at peak times.

Balancing any new resources between these three groups of opportunities will inevitably be an important policy decision.

Figure 6.2 portrays the survey data of boardings and alightings. The data shows that the Golden East Crossing Mall and Wal-Mart stop located on the Golden Eats route are the two

busiest system-wide transit stops. The Oakwood Shopping Center stop is the busiest stop in the area served by Meadowbrook and Oakwood routes, while Rolling Meadows Apartments is the busiest stop in the area served by South Rocky Mount and Ravenwood routes. A more detailed analysis of each route is provided in the following section.

Figure 6.1 TRT Fixed-Route Service Area Diagnosis

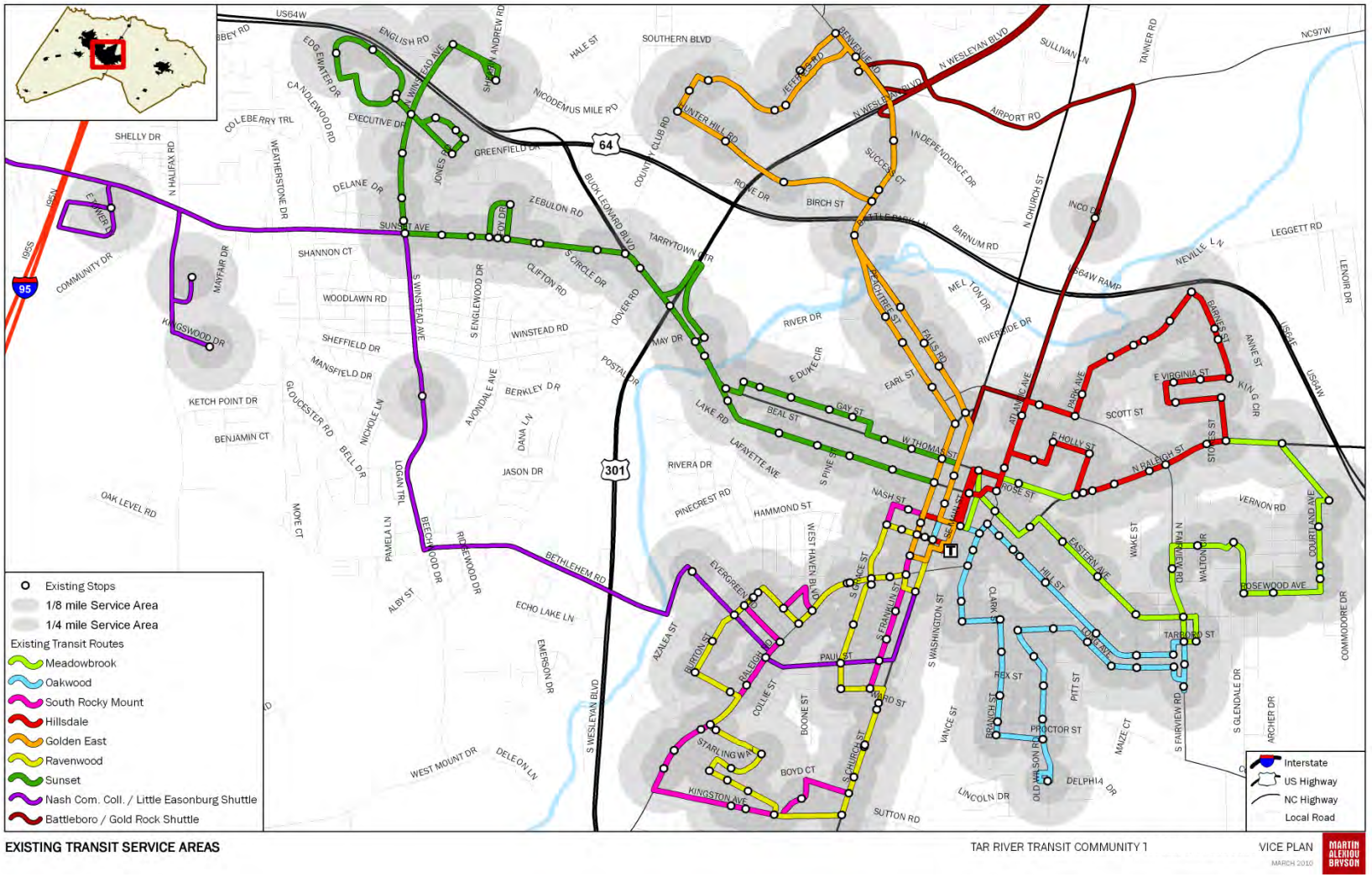
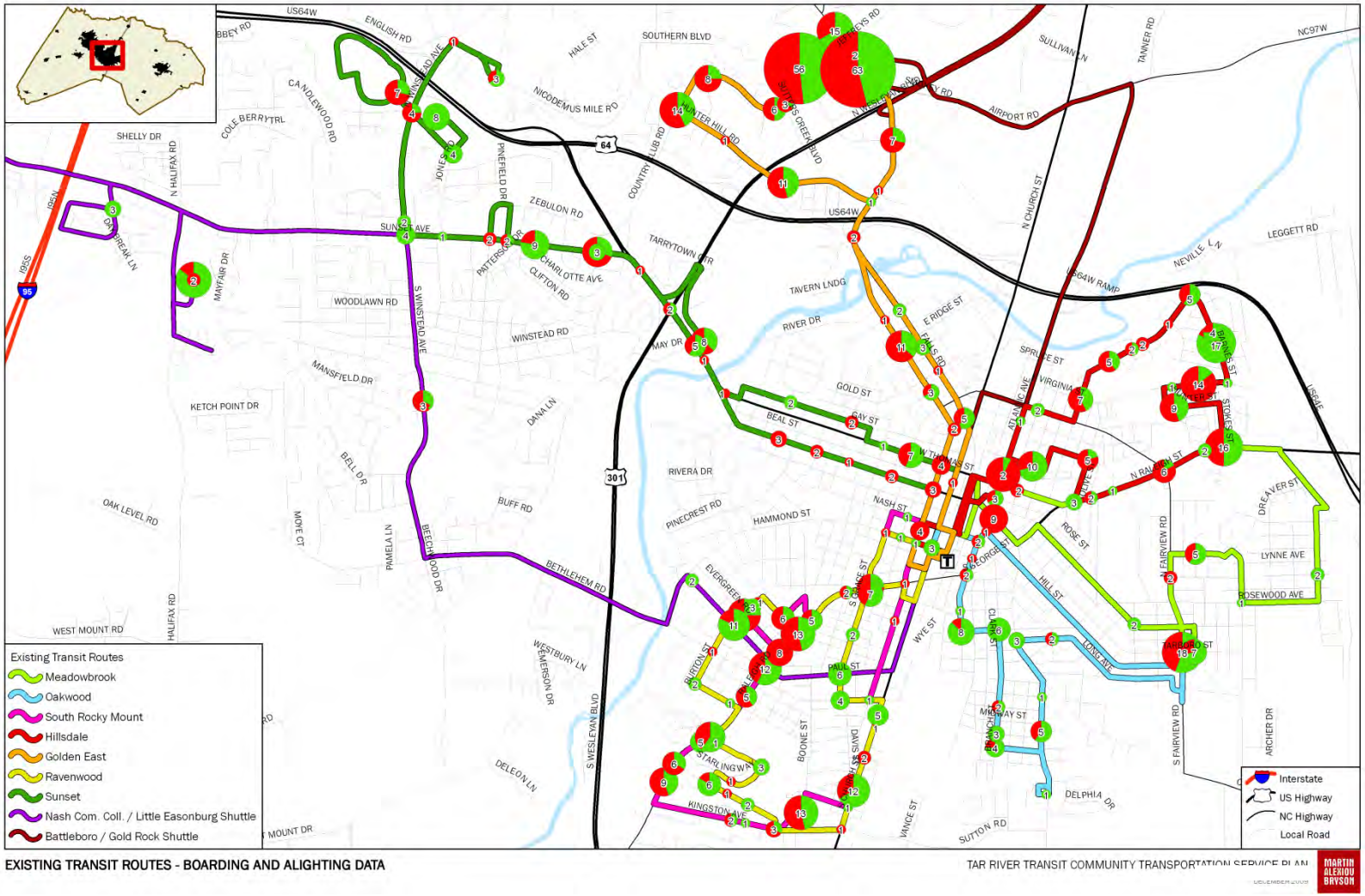


Figure 6.2 TRT Fixed-Route Boarding and Alighting Data Diagnosis



ROUTE BY ROUTE ANALYSIS

Meadowbrook – Route #1

Description

Meadowbrook – Route #1 operates in east Rocky Mount. It serves busy commercial corridors along Raleigh Street and Fairview Road. It is currently interlined with Oakbrook – Route #2. Therefore, transfers between those two routes are unnecessary. In FY 2008-09, Meadowbrook had approximately 2,221 monthly riders, making it the fifth busiest fixed route systemwide.

Good points

- A fairly productive route serving a few important destinations in east Rocky Mount: Oakwood Medical Center, Oakwood Shopping Center and Edgecombe Community College (ECC)

- The outbound Eastern Avenue is a good residential transit corridor connecting downtown and ECC to Oakwood Shopping Center and the hospital with the rest of Rocky Mount, while the inbound Raleigh Street/ US Business 64 is a good commercial transit corridor connecting east Rocky Mount to downtown (Hillsdale route provides outbound service along Raleigh Street).

- Timekeeping is fair. Meadowbrook/Oakwood often arrives late at the Transfer Center. In addition, if a trip leaves the Transfer Center late, it is likely to return late, thus perpetuating the route's tardiness.

Issues to address

- Currently, this route is connected to the Oakwood Route (Route #2). This coupled route often experiences delays, suggesting that routing adjustments and modifications to the number of stops is needed. In general, there exists some overlap in terms of coverage area so there is potential for disconnecting this route from Oakwood and connecting it to a route servicing a different area, such as South Rocky Mount

- Edgecombe Community College (Tarboro Street/Atlantic Avenue) is the single busiest stop along the route. The Meadowbrook Route currently services the College outbound while the Oakwood Route services it inbound (back to the Transfer Center)

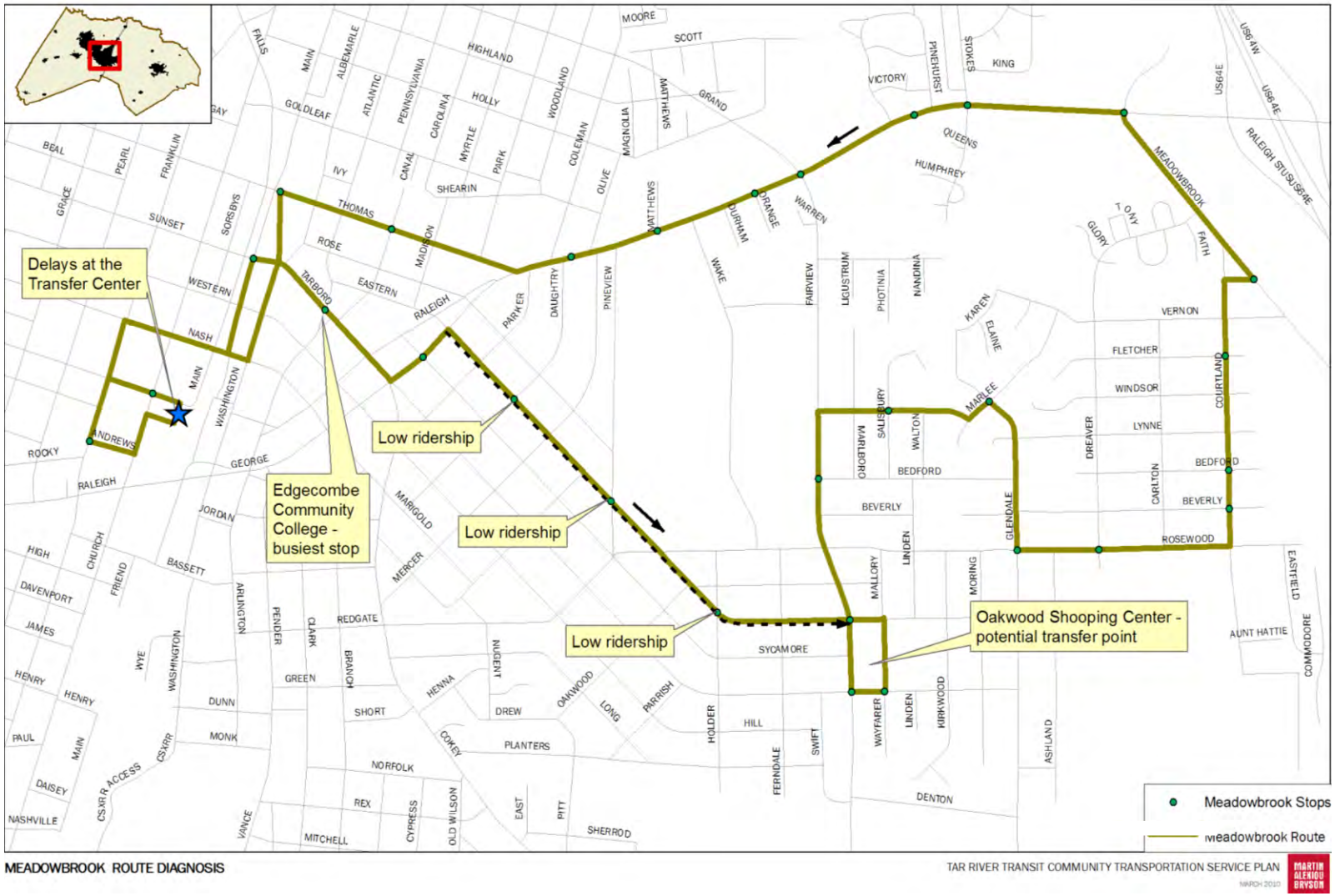
- Oakwood Shopping Center area is serviced by several transit stops that together comprise the busiest area in terms of the number of boardings/deboardings. There might be potential to at least consolidate the two stops at the Oakwood Shopping Center in order to improve timing. In addition, the Oakwood Shopping Center stop is currently an informal transfer point (transfer opportunity to the Oakwood Route). It could potentially become an official transfer point

- The residential part of the route along Eastern Avenue from George Street to Fairview Road has relatively low demand and uses neighborhood grid streets. However, it is also the only route servicing that neighborhood and a logical route to Oakwood Medical Center and Oakwood Shopping Center, which are both significant destinations

In summary, this route is essentially sound but the timekeeping must be addressed, most likely with a range of adjustments to save time. Despite being a lengthy route, ridership is mediocre. Disconnecting it from Oakwood route and connecting it to a different route could improve this route's timing.

Figure 6.3 shows the issues that relate to specific Meadowbrook route locations.

Figure 6.3 TRT Meadowbrook Fixed-Route Diagnosis

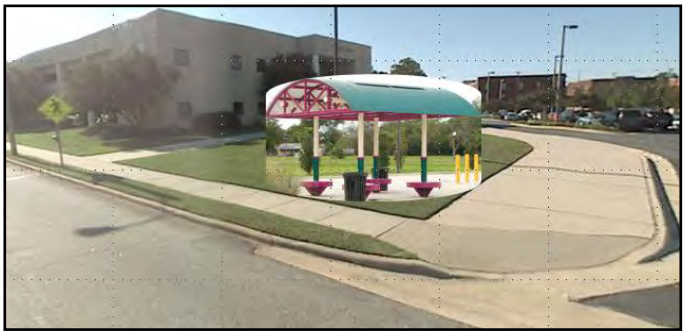


Meadowbrook Options

- The current alignment of the Meadowbrook route being interlined with the Oakwood Route (Route #2) results in significant delays that trickle down systemwide at the Transfer Center. In terms of coverage area, there is a lot of overlap between the two interlined routes, specifically around the US Business 64/Raleigh Street area. The number of busy destinations serviced by Oakwood in particular is essentially too large to result in efficient and timely service. It would be sensible to disconnect Meadowbrook from Oakwood and connect it to a route servicing a different area of Rocky Mount, preferably South Rocky Mount (Route #3).

- Formalize the existing informal satellite transfer point at the Oakwood Shopping Center (OSC)(see image on the right). In result, three routes in the future would formally meet at the OSC transfer point: Meadowbrook (scheduled hourly outbound departure at :20), Oakwood (scheduled hourly inbound departure at :00), and a new East Rocky Mount route (see discussion of this route below for details; hourly inbound departure at :30). The formal satellite transfer point along with the addition of the third route serving the busy OSC/ Fairview Road area would offer more convenience and choices to riders and mitigate present timekeeping concerns.

- Install a "superstop" transit stop at the Edgecombe Community College (see image on the right)



- There is potential to improve timekeeping on this route by realigning a few segments of its run (see Figure 6.4), namely by:

  - Rerouting the Meadowbrook Route so that buses use Lynne Avenue instead of Rosewood Avenue from Glendale Drive to Courtland Avenue. This option

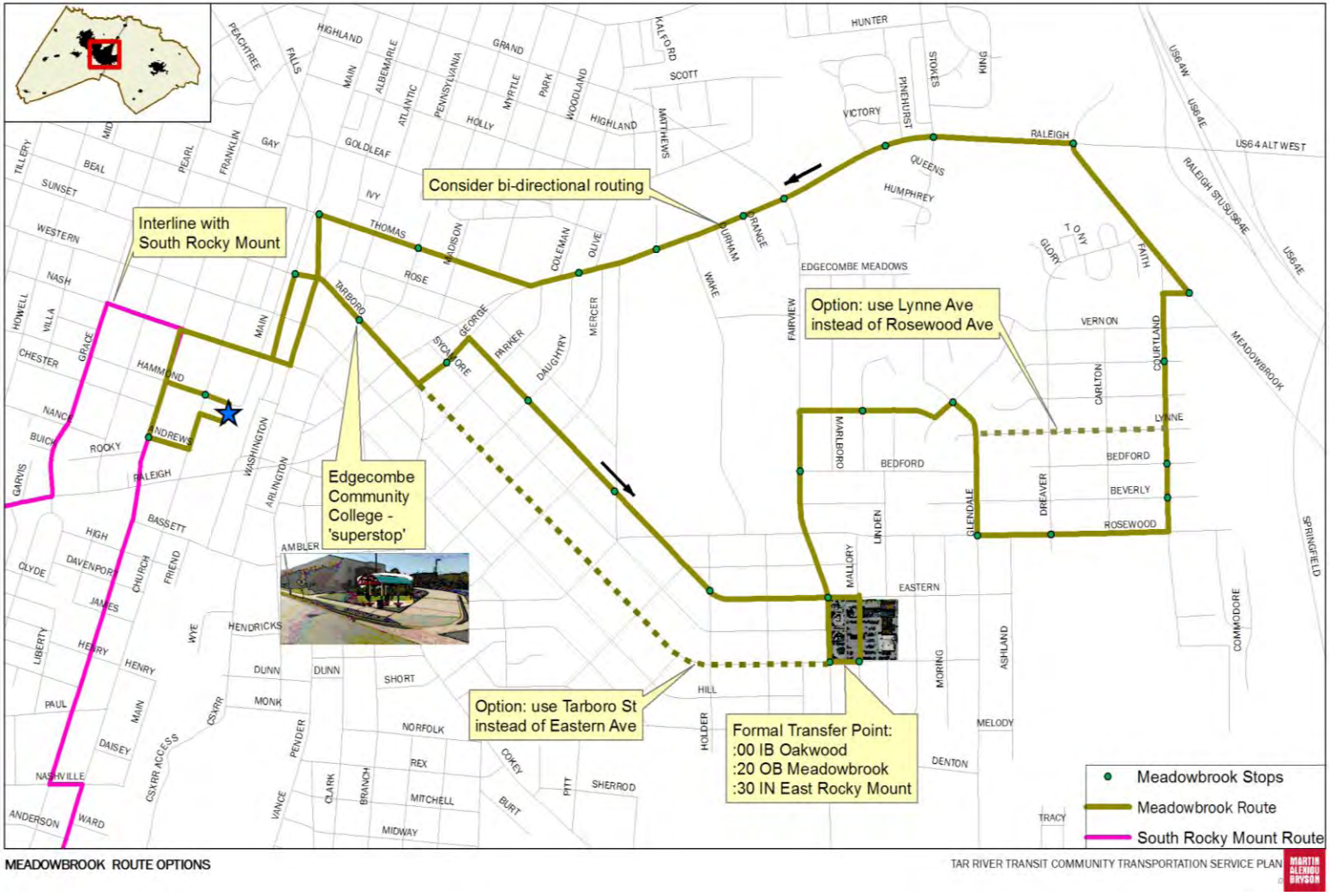
would reach more potential TRT riders since the southern portion of Rosewood Avenue is not built.

- Rerouting the route so that buses use Tarboro Street instead of Eastern Avenue from George Street to Fairview Road. This option would offer quicker access to the OSC and also offer another opportunity to serve the commercial/institutional facilities south of it. The Eastern Avenue corridor could still be serviced by the new proposed East Rocky Mount route (albeit inbound rather than outbound).

- The route could be made bi-directional if necessary. However, the need would not necessarily justify the expense.

Figure 6.4 shows the discussed Meadowbrook route options.

Figure 6.4 TRT Meadowbrook Fixed-Route Options



Oakwood Route

Description

Oakwood – Route #2 operates in southeast Rocky Mount. It serves a range of residential, commercial, and institutional destinations. It is currently interlined with Meadowbrook – Route #1. Therefore, transfers between those two routes are unnecessary. In FY 2008-09, Meadowbrook had approximately 2,606 monthly riders, making it the third busiest fixed route systemwide.

Good points

- Strong ridership, with most sections of the route making a contribution

- Good range of residential areas and commercial destinations including: downtown; dense residential neighborhoods such as Edgemont Historic District, the Arlington/Branch Street area, and the area around Cokey Road; a busy commercial area along South Fairview Road; institutional facilities such as Edgecombe County Social Services building, Employment Security Commission building and Main Post Office; and medical facilities such as Oakwood Medical Center and East Rocky Mount Kidney Center

Issues to address

- Poor timekeeping. If use of the wheelchair lift is required, or if the bus must wait for a train at an at-grade crossing, there is little or no time available to recover before the next trip. In addition, if a trip leaves the transfer center late, it is likely to return late, thus perpetuating the tardiness. Essentially, the route takes too long for reliable service. The number of busy destinations serviced by this route is simply too great given existing time constraints.

- Not many obvious opportunities for faster routing exist at locations along the route. The sheer number of important locations served by the route is staggering, and transit stops located in residential neighborhoods are well-patronized as well. However, disconnecting this route from Meadowbrook (due to some overlap in coverage area) and connecting it to Hillsdale Route instead could result in improved timing. Oakwood is also a very likely candidate for becoming an hourly route akin to the Sunset route.

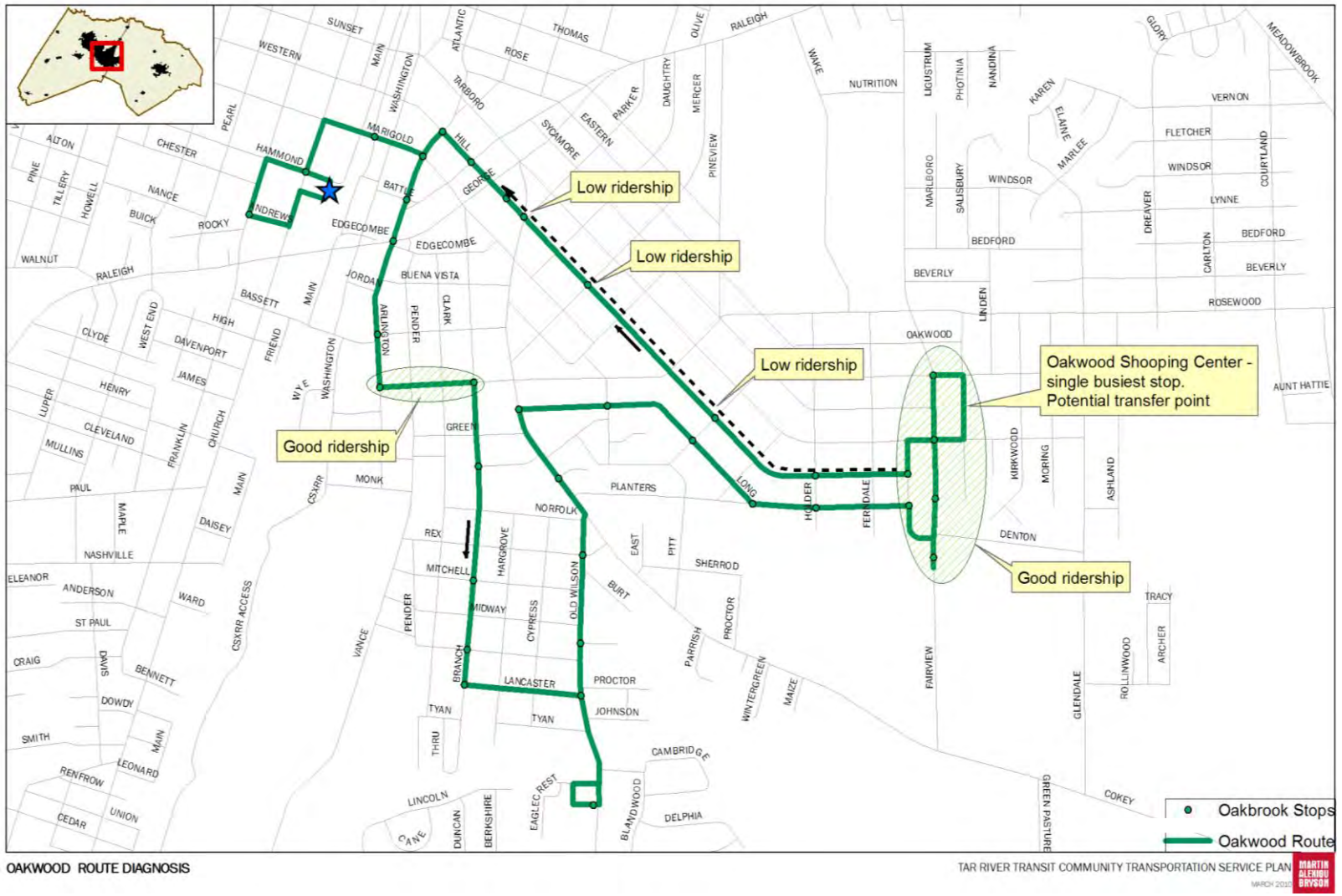
- The busy commercial area along Fairview Road has the single busiest stop along the route, Oakwood Shopping Center, along with other stops that are very busy, namely Edgecombe County Social Services and Employment Security Commission stops. High ridership levels at those locations warrant a higher level of service on this route. The passenger loads at the two latter stops can be shared by the newly proposed East Rocky Mount route in the near future.

In summary, this route is sound but the timekeeping must be addressed, most likely with a range of adjustments to save time or, if necessary, a total reorganization of the route. The

busy commercial areas would benefit from additional resources, if available, to provide shorter trips and to relieve pressure on the existing route.

Figure 6.5 shows the issues that relate to specific Oakwood route locations.

Figure 6.5 TRT Oakwood Fixed-Route Diagnosis



Oakwood Options

The current alignment of the Oakwood Route being interlined with the Meadowbrook Route results in significant delays that trickle down systemwide at the Transfer Center. In terms of coverage area, there is a lot of overlap between the two interlined routes, specifically around the U.S. Business 64/Raleigh Street area. The number of busy destinations serviced by the Oakwood route is essentially too high to result in efficient and timely service. Thus, it is sensible to disconnect Oakwood from Meadowbrook and connect it to a route servicing a different area of Rocky Mount, preferably Hillsdale (Route #4).

- Formalize the informal satellite transfer point at the Oakwood Shopping Center (OSC). In result, three routes in the future would formally meet at the OSC transfer point: Oakwood (scheduled hourly inbound departure at :00), Meadowbrook (scheduled hourly outbound departure at :20), and the new East Rocky Mount route (see discussion of this route below for details; hourly inbound departure at :30). The formal satellite transfer point along with the addition of the third route serving the busy OSC/Fairview Road area would offer more convenience and choices to riders and mitigate present timekeeping concerns.

- Despite this route not offering many obvious rerouting opportunities, some potential service routing changes could include (see Figure 6.8):

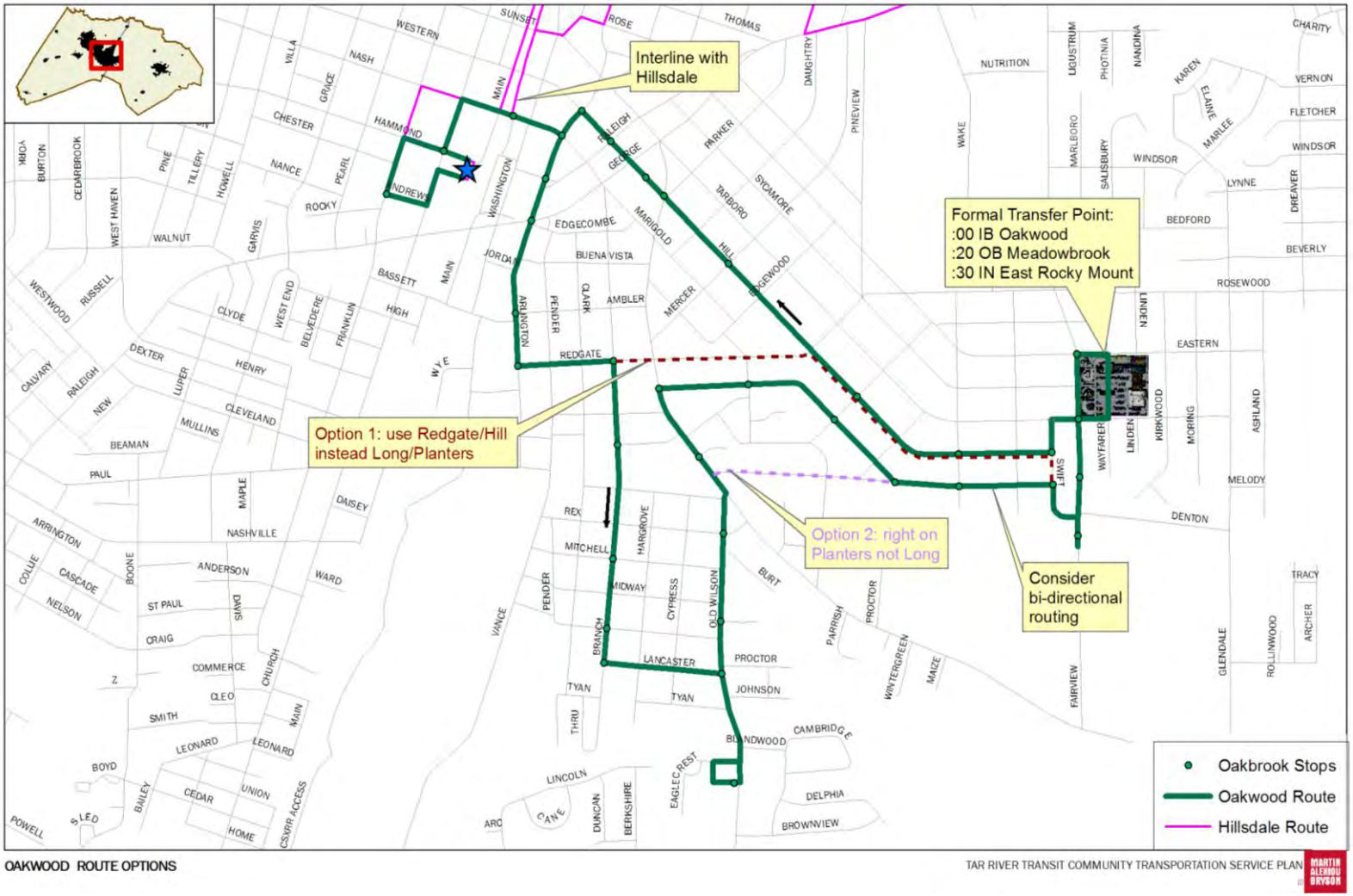
    - Option 1: Rerouting the route so that buses use Redgate Avenue and Hill Street on the way to the OSC rather than Long Avenue and Planters Street. This option could reach more potential TRT riders since the southern portion of Planters Street is not build up. In addition, Option 1 would serve additional locations of interest such as Playschool Child Care Center on Redgate Avenue and We Care Family Homes and Refreshing Springs Church on Hill Street. The potential downsides of Option 1 include the fact that Oakwood already has service along Hill Street (albeit inbound rather than outbound) and that potential timekeeping savings resulting from implementing this Option might be negligible.

    - Option 2: Rerouting the route so that buses stay on Cokey Road only until Planters Street, where they make a right, rather than making a left turn on Long Avenue. The advantage of this alternative as compared to Option 1 is that the potential timekeeping savings resulting from implementing this Option would be significant and every minute counts as far as this tight route is concerned. The residents in the Long Avenue area would still be within walking distance of a bus stop.

The route could be made bi-directional. In this particular instance, the expense might be justified considering the strong ridership, with most sections of the route making a contribution.

Figure 6.6 shows the discussed Oakwood route options.

Figure 6.6 TRT Oakwood Fixed-Route Options



South Rocky Mount Route

Description

South Rocky Mount – Route #3 operates in south Rocky Mount. It serves a range of residential, commercial, and social/recreational destinations. It is currently interlined with Hillsdale – Route #4. Therefore, transfers between those two routes are unnecessary. In FY 2008-09, South Rocky Mount had approximately 2,060 monthly riders, making it the least busy fixed route systemwide (not including the two shuttles).

Good points

- Good ridership, particularly from the apartment complexes, community buildings, and recreational facilities, in particular Rolling Meadows Apartments, West End Terrace Apartments, Gregg Court Rocky Mount Housing for the Elderly, South Rocky Mount Community Center, Wright Center, Boys & Girls Club, Home Street Park, and Buck Leonard Park

- As it currently exists, South Rocky Mount routing nearly mirrors Ravenwood (Route #6) routing, providing essentially a bi-directional service in this part of Rocky Mount.

- Timekeeping is quite good. The route could absorb a few additional minutes of run time if required

Issues to address

- Low ridership along Kingston Avenue (this area of Rocky Mount has a very low density residential land use pattern), thjogh this routing represents the only service to Gregg Court Rocky Mount Housing for the Elderly at the corner of Raleigh Road and Kingston Avenue. One option is to service Gregg Court Rocky Mount Housing for the Elderly via demand-responsive van service only, but the high ridership at the stop suggests the need for fixed-route service.

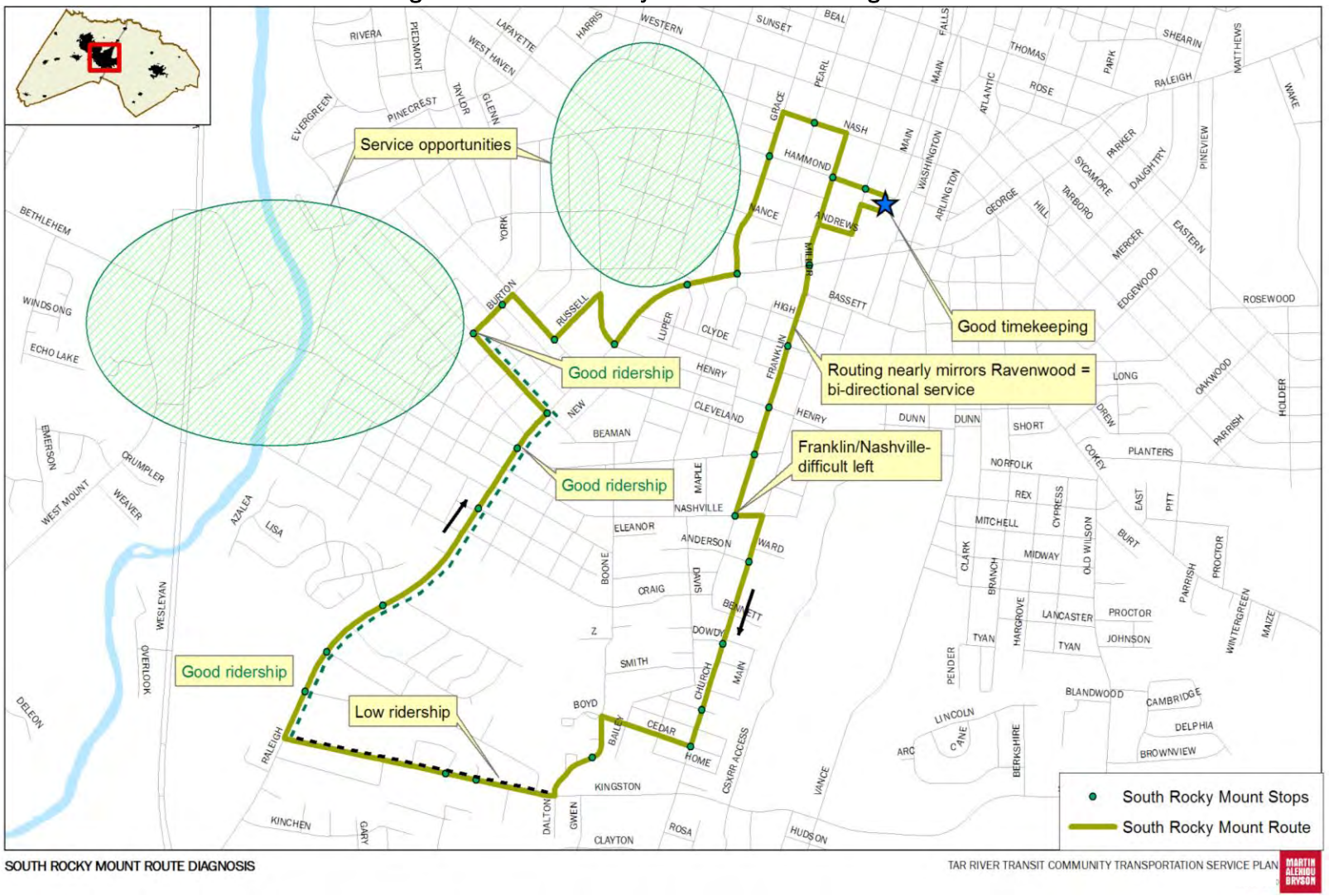
- The corner of Franklin Street and Nashville Avenue results in significant delays as buses are often left waiting for a chance to find a break in traffic on Nashville Road to make a left turn from Franklin to Nashville (see image on the right). One solution would be to install four-way stop signs (essentially adding stop signs to Nashville Avenue). Another option would involve rerouting the route so that it makes a right (rather than left) turn on Nashville Avenue.

- There are areas near its current routing that the South Rocky Mount line could possibly serve directly, notably the Food Lion shopping area at Bethlehem Road and South Wesleyan Boulevard, the U.S. Post Office at 1033 Hammond Street, and Rocky Mount Senior High School.

In summary, this route is sound but some routing adjustments could be made to increase the number of places served and improve the overall route efficiency.

Figure 6.7 shows the issues that relate to specific South Rocky Mount route locations.

Figure 6.7 TRT South Rocky Mount Fixed-Route Diagnosis



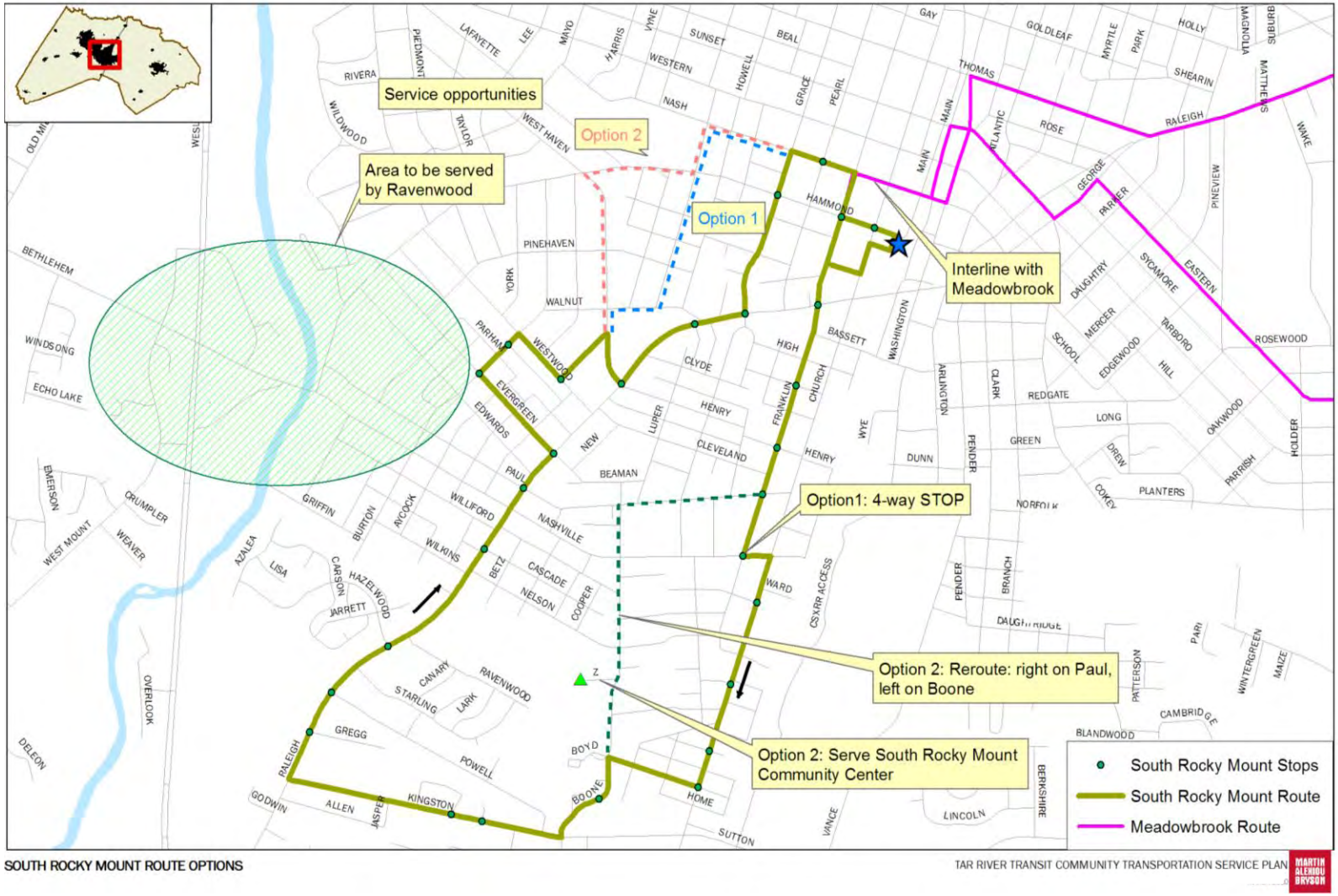
South Rocky Mount Options

- The current alignment of the South Rocky Mount route being interlined with Hillsdale (Route #4) works fine, but due to issues with delays on the interlined Meadowbrook/Oakwood routes, it is sensible to consider interlining South Rocky Mount with Meadowbrook instead (Hillsdale would be interlined with Oakwood).

- In terms of coverage area, there is a lot of overlap between the South Rocky Mount and Ravenwood routes, specifically around the U.S. Business 64/Raleigh Street area. While the benefit of South Rocky Mount route nearly mirroring Ravenwood route is obvious (bi-directional service), potential for serving more nearby locations is greater if the routes would diverge a bit more. In particular, South Rocky Mount could serve the following additional locations if routing was slightly adjusted: residential area in the West Haven Boulevard/South Pine Street/South Tillery Street, the U.S. Post Office on Hammond Street, and Rocky Mount Senior High. These areas are currently not served by any other Rocky Mount transit routes. The possible rerouting of South Rocky Mount that would enable serving those places is shown in Figure 6.8. In essence, a combination of West Haven Boulevard, Hammond Street and Nash Street, or South Tillery Street and Nash Street would be used in lieu of South Grace Street Northbound (on the final leg back to the Transfer Center)
- The problematic left turn from Franklin onto Nashville could potentially be solved by (see Figure 6.8):
    - Option 1: Four-way stop signs a this intersection
    - Option 2: Rerouting to avoid the left turn: right on Paul Street, serve residential and commercial and institutional facilitates along Paul (includes Salvation Army), left on Boone Street, follow Boone Street and serve South Rocky Mount Community Center (this will allow discontinuation of Ravenwood service to the center), follow Boone to Kingston Avenue, make a right on Kingston and follow the existing routing until Russell Street.

Figure 6.8 shows the discussed South Rocky Mount route options.

Figure 6.8 TRT South Rocky Mount Fixed-Route Options



Hillsdale Route

Description

Hillsdale – Route #4 operates in northeast Rocky Mount. It serves a range of residential, institutional, and recreational destinations. It is currently interlined with South Rocky Mount – Route #3. Therefore, transfers between those two routes are unnecessary. In FY 2008-09, Hillsdaile had approximately 2,359 monthly riders, making it the fourth busiest fixed route systemwide.

Good points

- Strong ridership, with most sections of the route making a contribution. Many busy stops in residential neighborhoods, which is fairly unique when compared to other routes, and also shows great existing demand for service

- Good range of residential areas and some commercial and recreational destinations, including: downtown; dense residential neighborhoods along Barnes Street, Virginia Street, and Stokes Street; Parker Middle School, O.R. Pope Elementary School, and Baskerville Elementary School; OIC/BTW Community Center; and Martin Luther King Jr. Park.

- Possible to switch routes along Raleigh Street from Hillsdale (outbound) to Meadowbrook (Route #1, inbound)

- Timekeeping is good. The route could absorb a few additional minutes of run-time if required.

Issues to address

- Low number of boardings/alightings around the downtown area might create some opportunities for rerouting

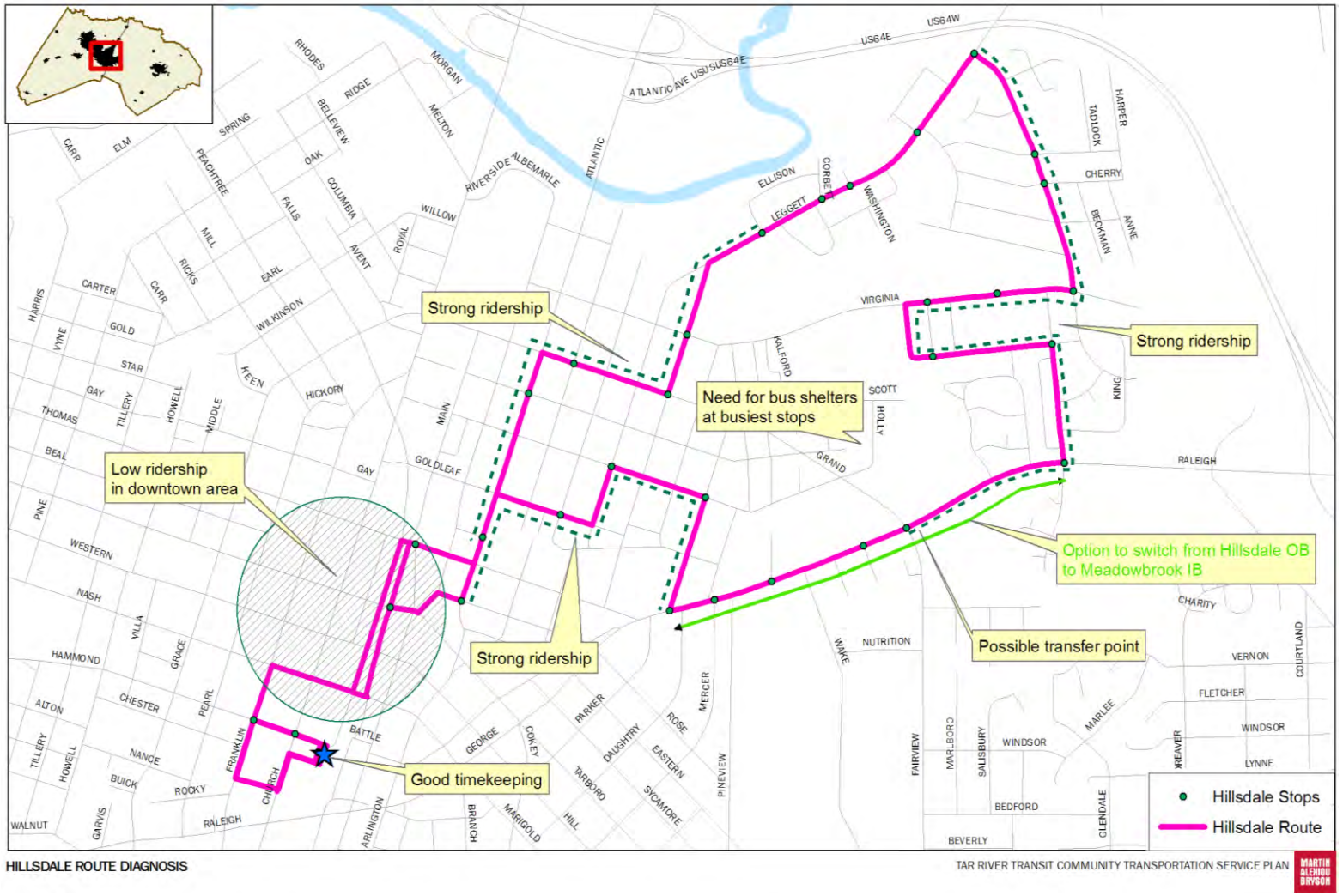
- Need for more bus shelters at the busiest stops

- Opportunity for a formal Hillsdale/Meadowbrook transfer point, preferably at the Edgecombe Shopping Center

In summary, this route is sound but could use some improvements in terms of rider convenience.

Figure 6.9 shows the issues that relate to specific Hillsdale route locations.

Figure 6.9 TRT Hillsdale Fixed-Route Diagnosis



Hillsdale Options

- The current alignment of the Hillsdale route being interlined with South Rocky Mount (Route #3) works, but because of the way other routes are interlined (essentially in order to improve timekeeping on the current Meadowbrook/Oakwood interline), it would be more sensible to interline the Hillsdale route with Oakwood (Route #2).

- A formal satellite transfer point at the Edgecombe Shopping Center (ESC). In result, two routes in the future would formally meet at the ESC satellite transfer point: Hillsdale (scheduled hourly outbound departure at :58) and Meadowbrook (scheduled hourly inbound departure at :38). The formal satellite transfer point would offer more convenience and choices to riders and help mitigate present timekeeping concerns.

- Install bus shelters at the following locations:

    - Goldleaf Street/Carolina Avenue

    - Hunter Street/Whitehead Drive

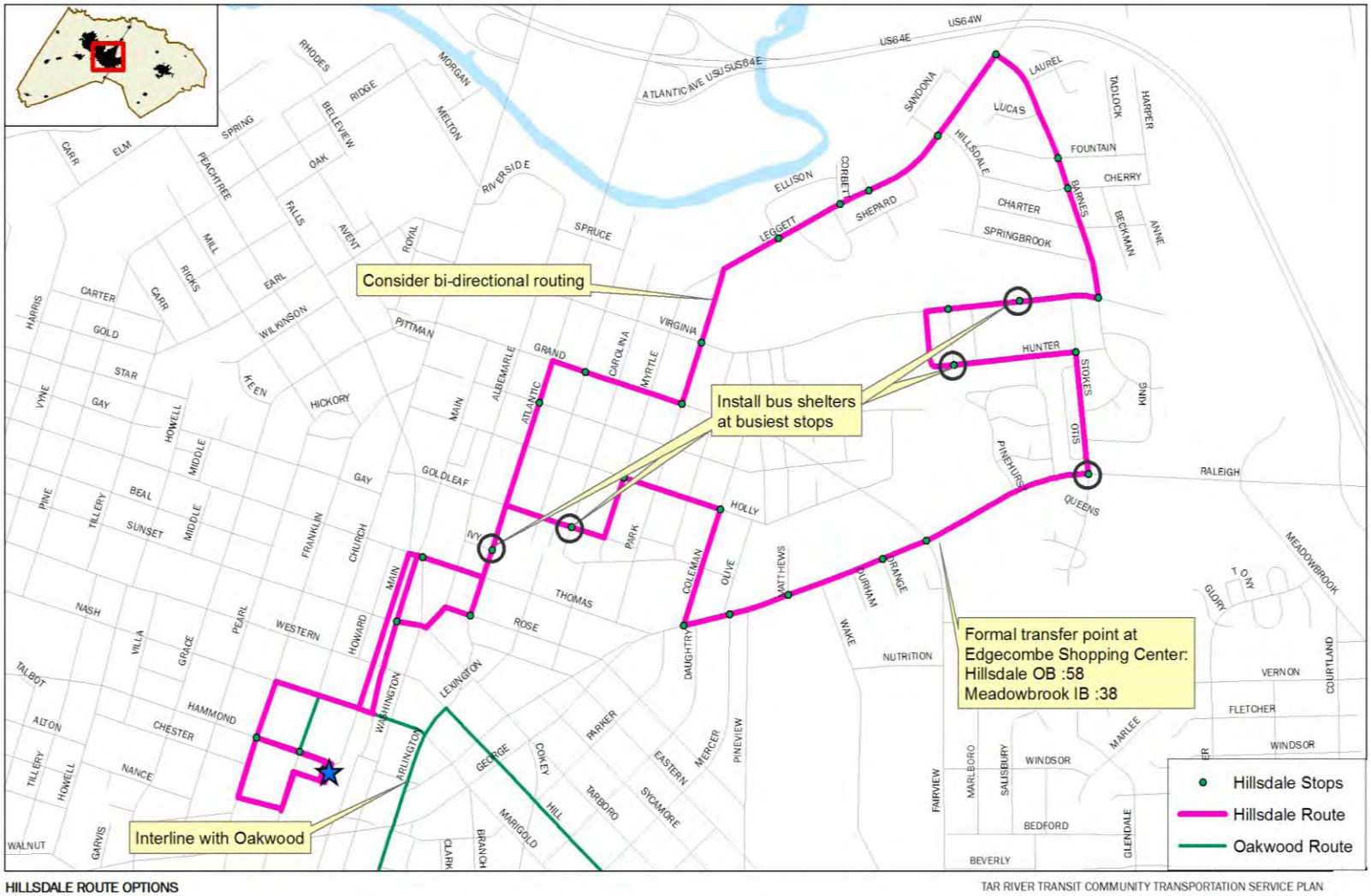
    - Virginia Street (behind Baskerville School)

    - Atlantic Avenue/Ivey Street

- Lastly, in the future the route could be made bi-directional if necessary. However, the expense would not necessarily justify that need.

Figure 6.10 shows the discussed Hillsdale route options.

Figure 6.10 TRT Hillsdale Fixed-Route Options



Ravenwood Route

Description

Ravenwood – Route #6 operates in south Rocky Mount. It serves a range of residential, commercial, and social/recreational destinations. It is currently interlined with the Golden East Route #6. Therefore, transfers between those two routes are unnecessary. In FY 2008-09, Ravenwood had approximately 2,080 monthly riders, making it the second least busy route systemwide (not including the two shuttles).

Good points

- Good ridership, particularly from the apartment complexes, community buildings, and recreational facilities, in particular Rolling Meadows Apartments (not directly), West End Terrace Apartments, South Rocky Mount Community Center, Wright Center, Boys & Girls Club, Home Street Park, and Buck Leonard Park. All segments of the route contribute to the overall loads.

- As it currently exists, Ravenwood routing nearly mirrors the South Rocky Mount (Route #3) routing, providing essentially a bi-directional service in this part of Rocky Mount.

- Timekeeping is poor. However, this is due to issues associated with the Golden East routing rather than Ravenwood. If disconnected from the Golden East route, Ravenwood could easily absorb another couple of minutes' running-time if required.

Issues to address

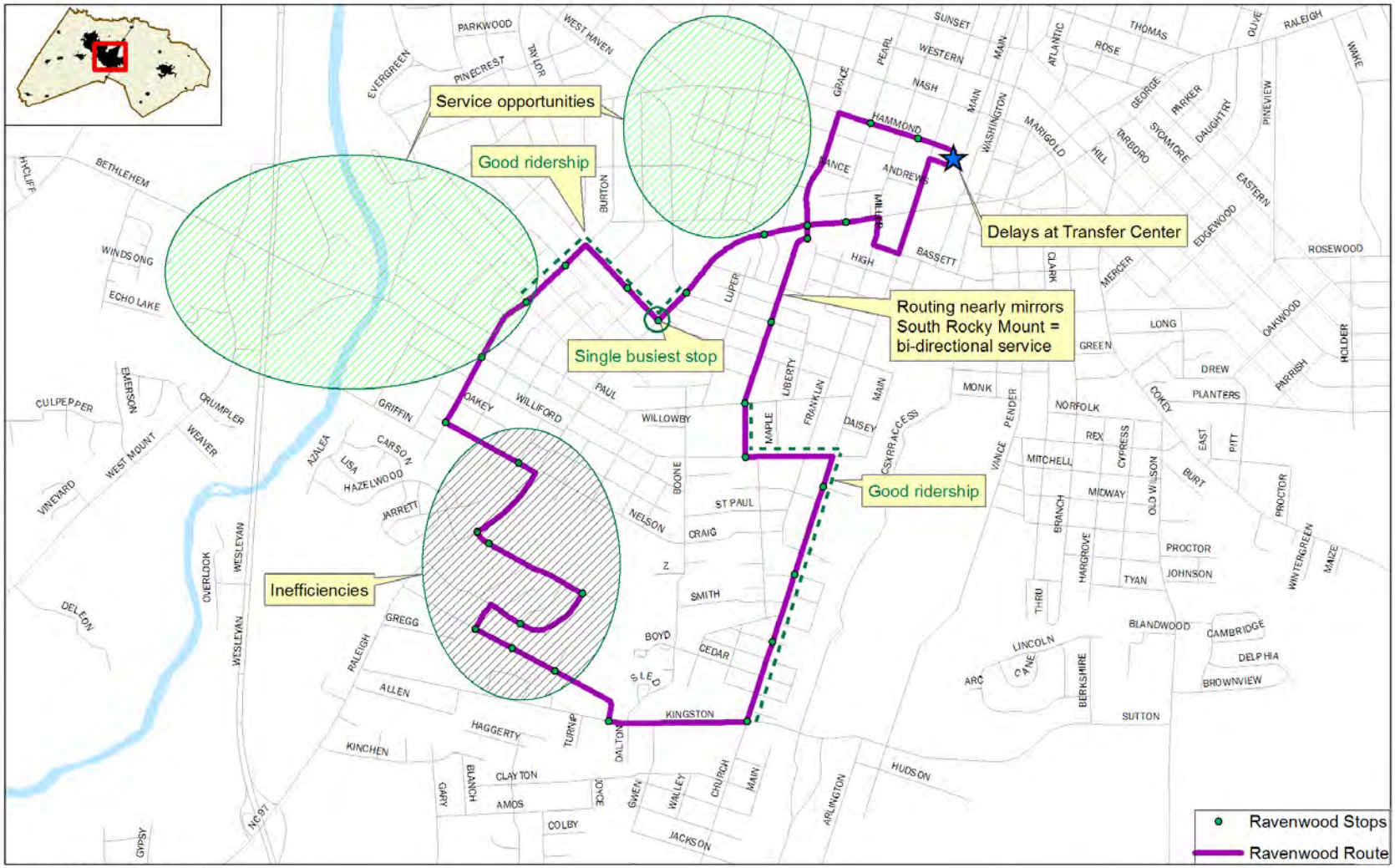
- This route is probably the least problematic systemwide when considered alone. However, since it is currently interlined with the Golden East route, it suffers from delays caused by Golden East routing. Ravenwood should be disconnected from Golden East in the future and connect to the new proposed East Rocky Mount route instead. That change would help mitigate delays and improve Ravenwood's timekeeping.

- Once Ravenwood is disconnected from Golden East, it could easily serve a few extra destinations, most notably Edwards Middle School and the Food Lion shopping center at Bethlehem and South Wesleyan Boulevard. It could also serve Rolling Meadows Apartments and South Rocky Mount Community Center directly.

In summary, this route is sound but some routing adjustments could be made to increase the number of places served and improve the overall route efficiency.

Figure 6.11 shows the issues that relate to specific Ravenwood route locations.

Figure 6.11 TRT Ravenwood Fixed-Route Diagnosis



Ravenwood Options

- The current alignment of the Ravenwood route being interlined with Golden East (Route #5) causes delays at the Transfer Center due to Golden East inefficiencies rather than Ravenswood's. Ravenwood would benefit from interlining it with the new proposed East Rocky Mount route.

- In terms of coverage area, a lot of overlap exists between the Ravenwood and South Rocky Mount routes, specifically around the U.S. Business 64/Raleigh Street area. While the benefit of this route nearly mirroring the South Rocky Mount route is obvious (bi-directional service), potential for serving more nearby locations exist once Ravenwood is disconnected from the Golden East route and connected to the "lighter" new East Rocky Mount. If that becomes reality, Ravenwood could potentially serve Edwards Middle School and the Food Lion shopping center at Bethlehem and South Wesleyan Boulevard. The route could also serve Rolling Meadows Apartments and South Rocky Mount Community Center directly. The advantage of serving these locations is that the area they are located in is currently not served by any other Rocky Mount transit routes. The possible rerouting of Ravenwood that would enable service those places is shown in Figure 6.12 and described below:

    - Option 1: serve Edwards Middle School and the Food Lion shopping center at Bethlehem and South Wesleyan Boulevard. Three different alignment versions are shown – the first one (1A) would be the most efficient time-wise. The other versions (1B and 1C), however, serve more destinations including McDonald's, St Paul United Methodist Church, Hunter's World, Binswanger Glass (Option 1B), and red Wing Shoe Store, WRMT radio station, and Express Employment (Option 1C).

    - Option 2: Streamline routing in the Ravenwood Drive/Ellen Drive area in order to further improve timekeeping and be able to implement Option 1 – either by not turning on Ellen Drive and continuing on Starling Way to Raleigh and then further on Kingston Avenue (Option 2A), or by not turning left onto Ravenwood Drive and continuing on Raleigh Road and then to Kingston Avenue (this Option 2B would be essentially a mirror of the South Rocky Mount route in this area). Both Option 2A and Option 2B would serve Gregg Court Rocky Mount Housing for the Elderly directly. Apartments located along Ravenwood Drive and Sterling Way would still be within walking distance of a bus stop.

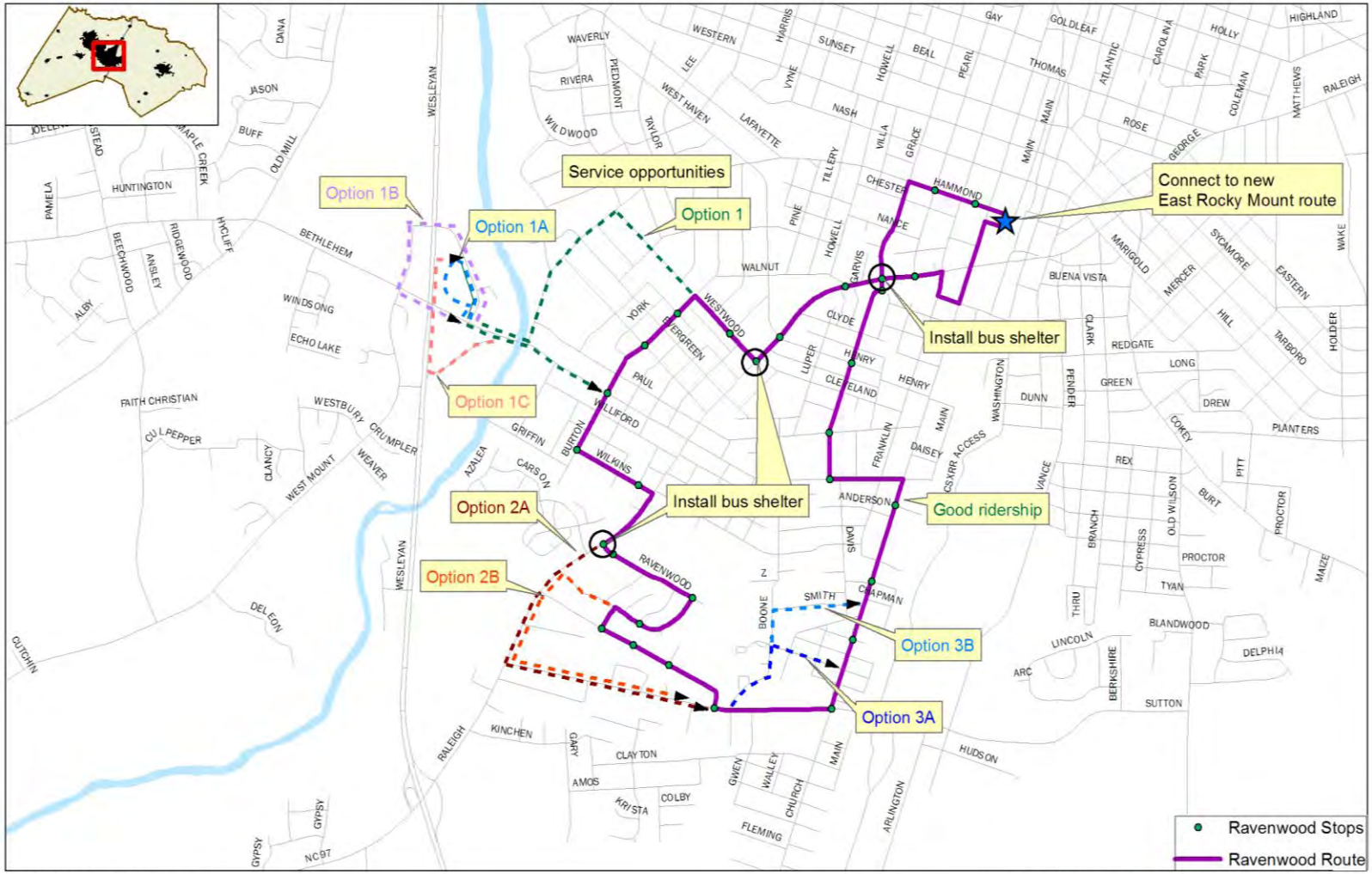
- Realign routing in the Rolling Meadows Apartments area – instead of the existing alignment that follows Kingston Avenue to South Church Street, the route would follow Kingston Avenue until Boone Street, make a left on Boone Street, follow it until Cedar Street – serve Rolling Meadows Apartment complex directly, and then either: make a right onto Cedar Street and left on South Church Street (Option 3A) or continue on Boone Street until Smith Street (serving the South Rocky Mount Community Center directly), make a right onto Smith Street, and left onto South

Church Street (Option 3B). The purpose of these changes is to serve as many important destinations along the route as possible given anticipated time constraints.

- Install bus shelters at some of the busiest existing bus stops that currently lack them: Raleigh Road at Westwood Drive; Ravenwood Drive/Raleigh Road, and Grace Street/Raleigh Road

Figure 6.12 shows the discussed Ravenwood route options.

Figure 6.12 TRT Ravenwood Fixed-Route Options



Sunset Route

Description

Sunset – Route #7 operates in western and northwestern Rocky Mount. It operates between downtown Rocky Mount and the Nash General Hospital/Rocky Mount Medical Park in the Winstead Avenue area. It runs mostly along Sunset Avenue from downtown to US Bypass 64. The route leaves the Transfer Center downtown at 15 minutes past every hour. It is also the only fixed route with a one-hour running cycle that is not interlined. Some of the major trip generators include the Nash General Hospital, Edgecombe-Nash Mental Health facility, Englewood Shopping Center, and hotels along Gateway Boulevard. In FY 2008-09, Sunset had approximately 4,018 monthly riders, making it the busiest route systemwide.

Good points

- Good ridership, particularly to/from medical facilities, shopping centers, and hotels. The bus stops around Englewood Shopping Center are the busiest along the route in terms of the number of boardings and deboardings, followed by the Stone Rose Drive area, Gateway Boulevard hotels area, and the Nash General Hospital.

- The only TRT route serving important medical facilities in the northwestern part of Rocky Mount and the densely populated areas around Sunset Boulevard

- Timekeeping is quite good. The route could potentially absorb a few additional minutes run-time if required.

Issues to address

- This route is isolated from other TRT routes. If possible, it should at some point cross paths with the Golden East route, particularly if the latter is extended to an hourly route as well. A formal satellite transfer point and/or making the two routes as nearly bi-directional would be of benefit as well.

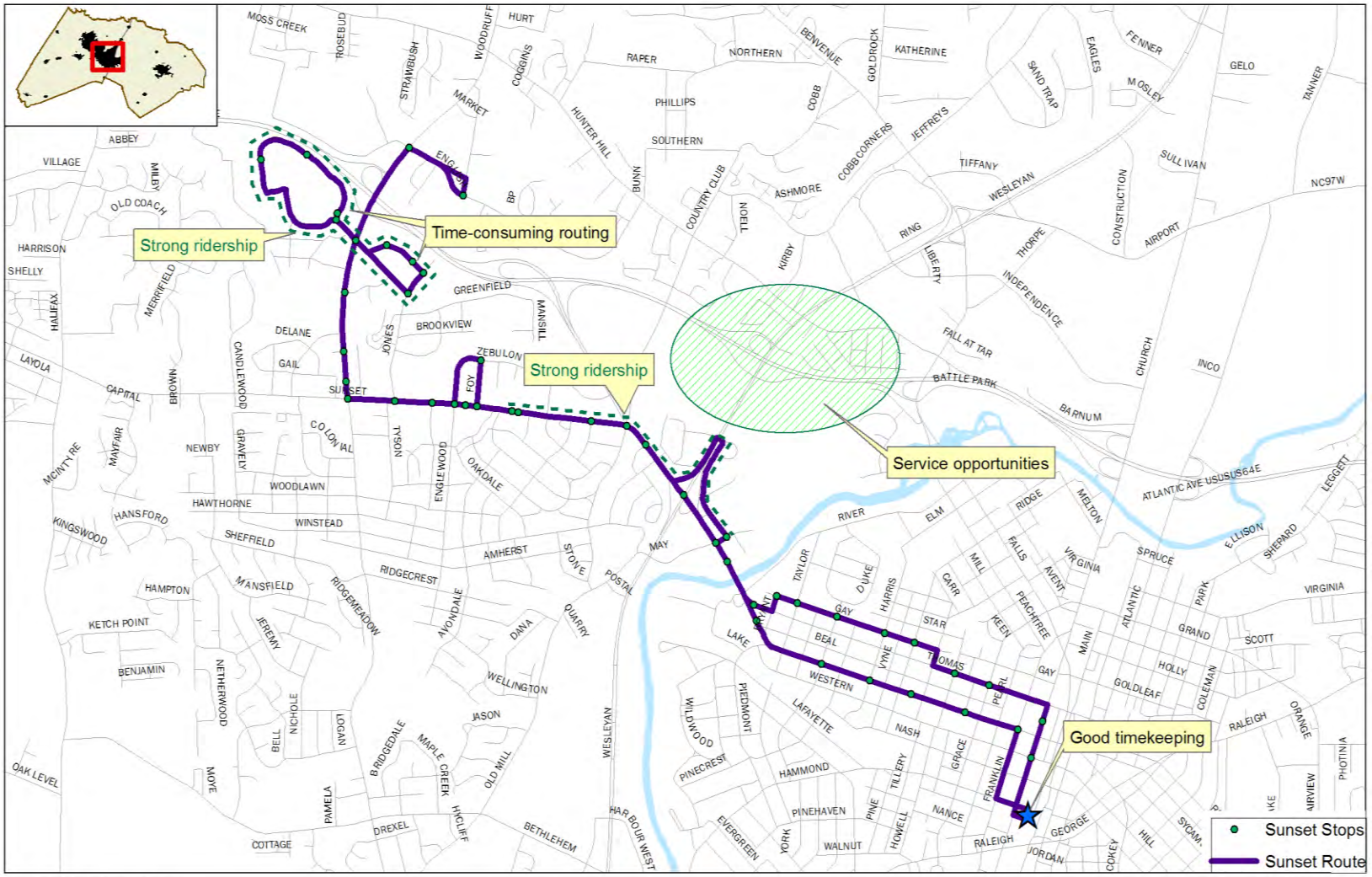
- The area with no transit service between Sunset Boulevard and Hunter Hill Road could be addressed by realigning the route.

- Routing around the Nash General Hospital is very time-consuming

In summary, this route is sound but some routing adjustments could be made to increase the number of places served, while establishing a transfer point to/from the Golden East route would further strengthen the route's timekeeping and increase rider convenience (better access to more locations)

Figure 6.13 shows the issues that relate to specific Sunset route locations.

Figure 6.13 TRT Sunset Fixed-Route Diagnosis



Sunset Options

- The current alignment of the Sunset route isolates the route – transfer to any other TRT routes is not possible. A Recommended alternative is to realign the routing so that it overlaps with Golden East, establishing a transfer point between the two busiest TRT routes, preferably in the Golden East Mall area. The following options outline possible realignment of the Sunset route (see Figure 6.14):

    - Option 1 – the initial alignment would follow existing Sunset routing Outbound along Sunset Boulevard until Zebulon Court. The Zebulon Court/North Englewood Drive segment could be eliminated to further improve timekeeping – the boarding/alighting data shows that the ridership along the loop is not very significant, and only one existing bus stop would be eliminated – at Foy Drive and Zebulon Road. Riders would still be able to easily walk to destinations located at the corner of Foy Drive and Zebulon Road.

    - Option 1 continued: a different order of places served in the hospital/medical/hotels area is recommended. Rather than the existing Gateway-Rocky Mount Medical Park-Nash General Hospital order of places served, the recommended routing of places served would be as follows: Gateway-Nash General Hospital-Rocky Mount Medical Center. This alignment would allow continuation of the Sunset Route eastbound from Rocky Mount Medical Center.

    - Option 1 continued: recommended routing would leave Rocky Mount Medical Center and continue Eastbound along English Road, making a right onto Shearin Andrew Road, making a left onto Nicodemus Mile Road, serving Benvenue Elementary School, following Nicodemus Mile Road until Hunter Hill Road, making a right onto Hunter Hill Road, following Hunter Hill Road until its intersection with US 301 Bypass/North Wesleyan Boulevard, at which point the routing could continue under several scenarios discussed in more detail below:

        - Option 1A: under this scenario, Sunset would continue along Hunter Hill Road until Benvenue Road where it would essentially follow existing Golden East routing Inbound back to the Transfer Center downtown

        - Option 1B: make a right onto US 301 Bypass/North Wesleyan Boulevard, right on Independence Drive, right on Benvenue Road, follow Option 1A Inbound from the intersection of Benvenue Road and Hunter Hill Road

        - Option 1C: follow Option 1B initially along US 301 Bypass/North Wesleyan Boulevard, right on Ring Road towards the Golden East Mall and the existing Golden East route shelter where transfers between Sunset and Golden East could be made (Sunset :03 each

hour Inbound; Golden East :33 each hour Outbound). Afterwards, the Sunset Route would follow Ring Road counter-clockwise until Tiffany Boulevard, make a right on Benvenue Road, and follow Benvenue Road Inbound along the proposed Option 1B and 1A alignment.

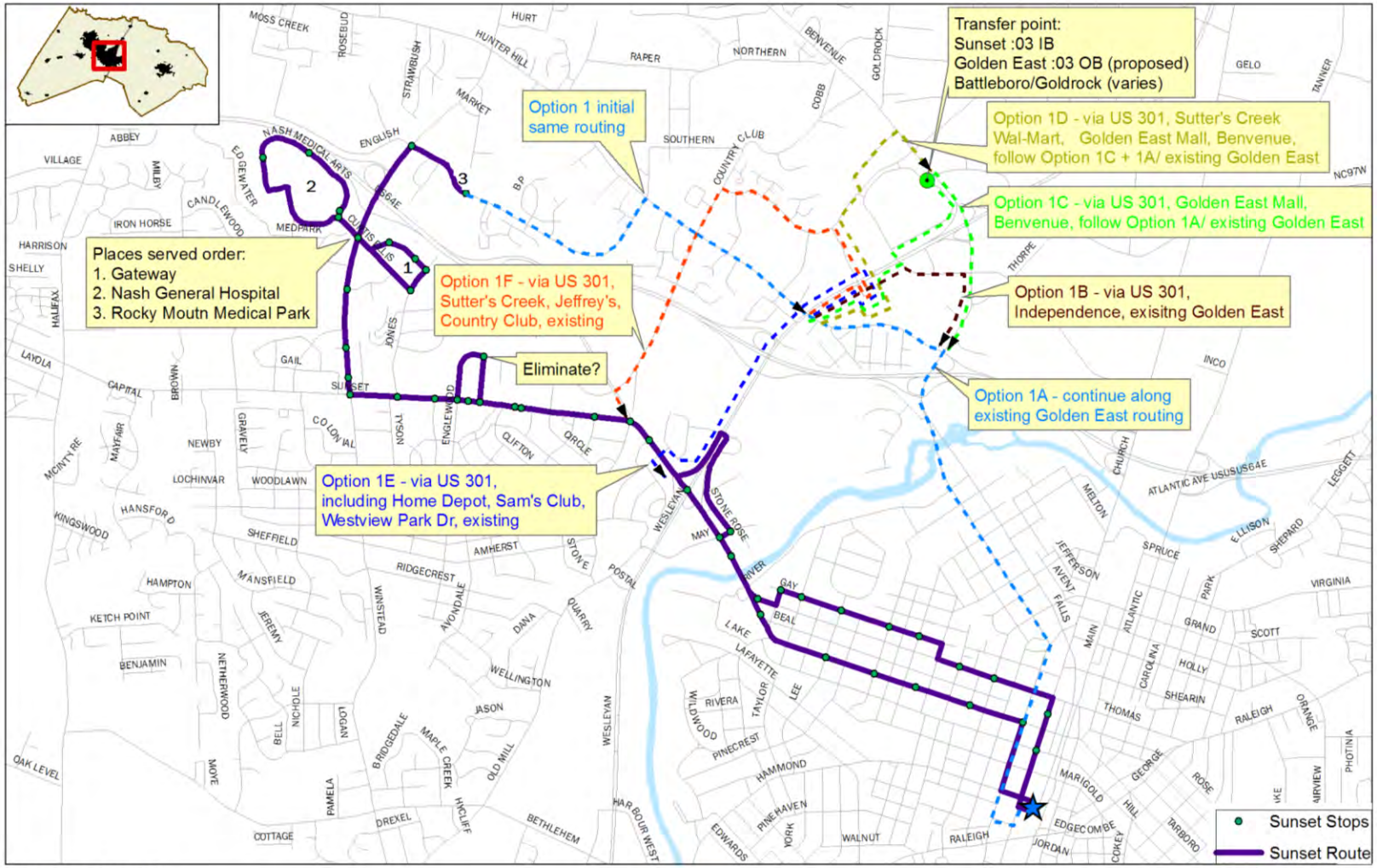
- Option 1D: follow Option 1 C, go back on Sutter's Creek Boulevard, make a right onto Jeffrey's Road, serve Wal-Mart shopping center, make a right on Benvenue Road, follow it to Golden East Mall stop where transfers between Sunset, Golden East and Battleboro/Goldrock shuttle could be made (Sunset :03 each hour Inbound; Golden East :03 each hour Outbound, Battleboro/Goldrock – varies). Afterwards, follow Option 1C routing back to the Transfer Center downtown.

- Option 1E: left onto US 301 Bypass/North Wesleyan Boulevard, right on Sutter Creek's Boulevard, serve the Big Lots Shopping center, exit back on Sutter Creek's Boulevard, follow it to back onto US 301 Bypass/North Wesleyan Boulevard – make a left, follow US 301 (serve Home Depot) until Sunset Boulevard. Option 1D could potentially serve Sam's Club by making a right at Hardee's (ingress point), and existing Sam's Club at Westview Park Drive (egress point). The routing would then follow Sunset Boulevard Inbound towards the Transfer Center downtown along the currently existing Sunset route alignment.

- Option 1F: follow Option 1D initially but continue straight on Sutter's Creek Boulevard across US 301 Bypass/North Wesleyan Boulevard, left on Jeffrey's Road, follow Jeffrey's Road to Country Club Road, make a left onto Country Club Road, follow Country Club Road to Sunset Boulevard (including a small section on US Business 64), continue on Sunset Boulevard using the currently existing Sunset Boulevard alignment back to the Transfer Center downtown

Figure 6.14 shows the discussed Sunset route options.

Figure 6.14 TRT Sunset Fixed-Route Options



SUNSET ROUTE OPTIONS

TAR RIVER TRANSIT COMMUNITY TRANSPORTATION SERVICE PLAN

Golden East Route

Description

Golden East – Route #5 operates in northwestern Rocky Mount. It is currently interlined with Ravenwood – Route #6. Therefore, transfers between those two routes are unnecessary. In FY 2008-09, Golden East had approximately 3,302 monthly riders, making it the second busiest route systemwide (not including the two shuttles), right behind the Sunset Route. Golden East primarily serves very busy commercial areas on the edges of Rocky Mount – these areas are not easily accessible by walking and/or are not within walking distance to/from where most TRT riders reside. The major destinations along the route include the Golden East Mall, Wal-Mart Shopping Center, and Hunter Hill Shopping Center.

Good points

- Good ridership, particularly to/from commercial destinations, particularly Golden East Mall, Wal-Mart shopping center, and Hunter Hill Shopping Center. The bus stops at the Golden East Mall and in front of Wal-Mart/Chick-Fil-A are the two busiest stops along the route in terms of the number of boardings and deboardings, followed by Taco Bell at Cobb Corner, and Hunter Hill Shopping Center

- The only TRT full-size bus serving major commercial areas in the northwestern part of Rocky Mount, including the Golden East Mall, Wal-Mart, and Hunter Hill shopping center

Issues to address

- Poor timekeeping is the major existing problem with the route. On-time performance is the worst of all TRT routes and delays at the Transfer Center caused by Golden East trickle down to the rest of routes since buses typically wait for Golden East to arrive at the Transfer Center before departure (to allow riders to transfer to/from Golden East and systemwide). The route circulates through the Golden East Crossing Mall, Wal-Mart shopping center and other commercial areas around US 301/North Wesleyan Boulevard, but due to the sheer length of the routing and the fact that route typically offers door-to-door service (rather than curb service), slow speeds and missed timepoints result in significant delays. In short, routing around these commercial areas is very time-consuming. The most obvious solution to Golden East timekeeping problems would be to extend the route to an hourly route and if possible enable transfers to the Sunset route.

- This route, akin to Sunset, is isolated from other TRT routes. If possible, it should at some point cross paths with the Sunset Route, particularly if the latter is extended to an hourly route as well. Establishing a formal satellite transfer point and/or making the two routes nearly bi-directional would also be of benefit.

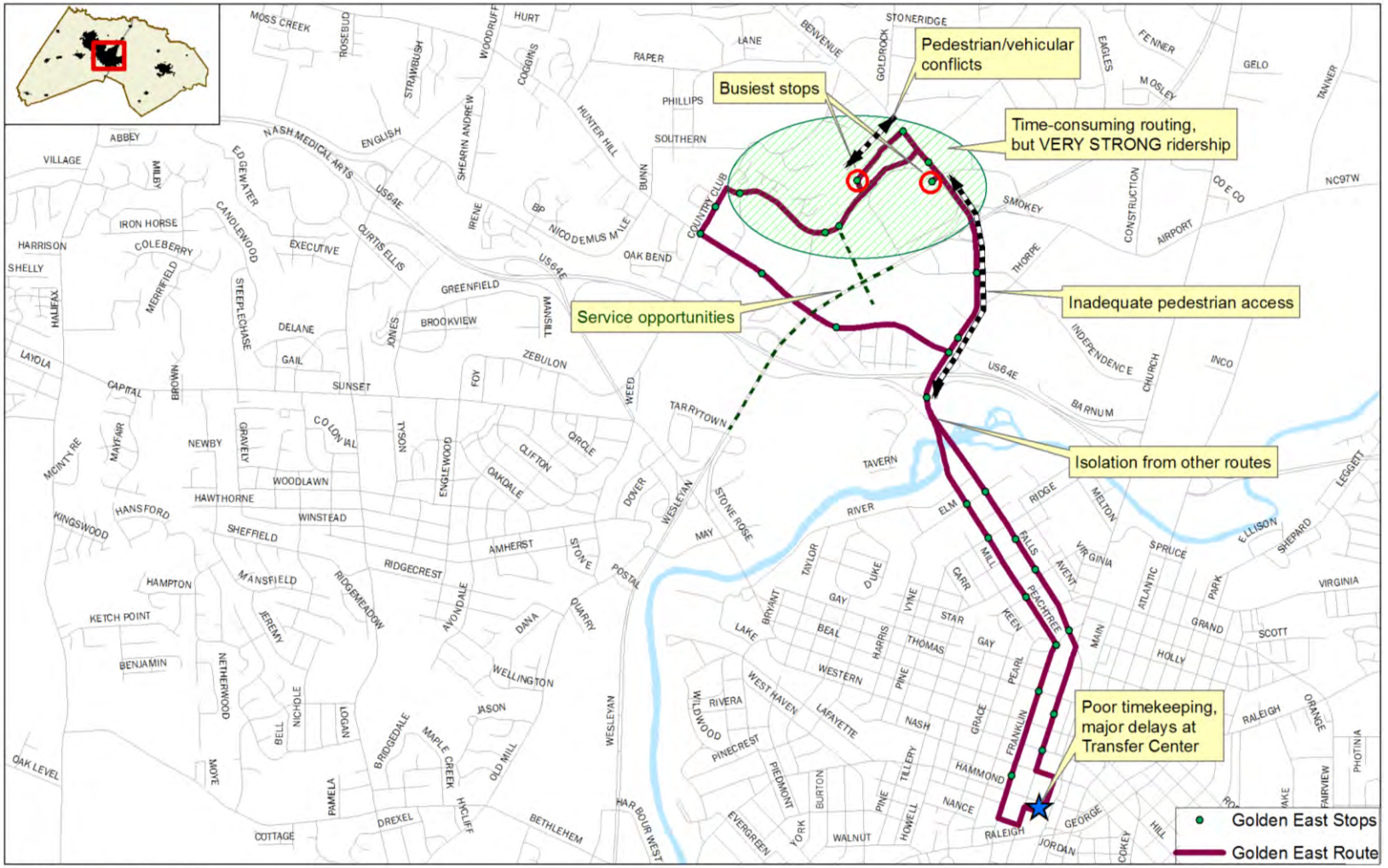
- The area with no transit service between Sunset Boulevard and Hunter Hill Road could be addressed by realigning this route.

- Pedestrian/vehicular conflicts exist along the route, most notably around the Wal-Mart shopping center area, and inadequate pedestrian accessibility persists along Benvenue Road.

In summary, this route requires modifications to improve its timekeeping. Extending the scheduled run-time to one-hour would yield systemwide benefits. Establishing a transfer point to/from the Sunset route would increase rider convenience (better access to more locations) and increase this route's coverage area.

Figure 6.15 shows the issues that relate to specific Golden East route locations.

Figure 6.15 TRT Golden East Fixed-Route Diagnosis



Golden East Options

- The current alignment of the Golden East route makes it nearly impossible to achieve good timekeeping. Once decoupled from Ravenwood, Golden East would be an hourly route. A recommended alternative would be to realign the routing so that it overlaps with the Sunset route, establishing a transfer point between the two busiest TRT routes, preferably in the Golden East Mall area. The following options outline possible realignment of the Golden East route (see Figure 6.16):

    - Option 1: the initial alignment would follow the existing Golden East routing Outbound until the intersection of Country Club Road and Hunter Hill Road. From that point, Golden East would follow Hunter Hill Road westwards, make a left onto Nicodemus Mile Road, and continue along the existing Sunset route alignment.

    - Option 2: under this scenario, Golden East would remain very similar to its existing alignment, but it would add the Sutter's Creek extension to its run – when completing the terminal loop in the Golden East Mall area, the route would make a left onto Sutter's Creek and follow it past US 301 /North Wesleyan Boulevard to the shopping area that includes Big Lots, where a bus stop has been frequently requested by TRT riders. The route would then turn around and go back along Sutter's Creek Road to its intersection with Jeffrey's Road, where it would make a left turn and continue along its existing alignment.

    - Option 3 would extend the Golden East route to serve the commercial node at the corner of Goldrock Road and Benvenue Road. The extension would follow Benvenue Road serving Bridgewood Apartments and Dairy Queen, and Goldrock Road, serving Food Lion, Brookdale Sterling Retirement House, and apartments and residential areas, including possibly Hornbeam Park on Cunningham Drive.

    - Improve pedestrian access to bus stops along Benvenue Road, particularly from Thorpe Road to Jeffry's Road. In general, all TRT bus stops should be ADA-accessible and include shelters if possible

    - Note: Option 2 and 3 could possibly be combined. Option 1 and 2 could possibly be combined as well, but the preferred alternative would include Option 1 as the future alignment of Golden East route coupled with Sunset's Option 1D. Under this scenario, Sunset and Golden East routes would nearly mirror each other and offer bi-directional service to/from the Golden East Crossing Mall, Wal-Mart shopping center, and Sunset Boulevard. The Golden East route would leave the Transfer Center at :45 every hour to arrive at the Golden East Crossing Mall at the same time as the Sunset route. This would be an important timepoint. To ensure that timekeeping is sound, in terms of the Sunset route, the following improvements would be made:

        - The Foy Drive/Zebulon Drive bus stop would be eliminated

- The route would no longer serve the Nash General Hospital (it would be served by Golden East instead)

- Streamlined routing around Rocky Mount Medical Center

Figure 6.16 shows the discussed Golden East route options. Figure 6.17 shows the preferred routing of the Golden East and Sunset routes.

Figure 6.16 TRT Golden East Fixed-Route Options

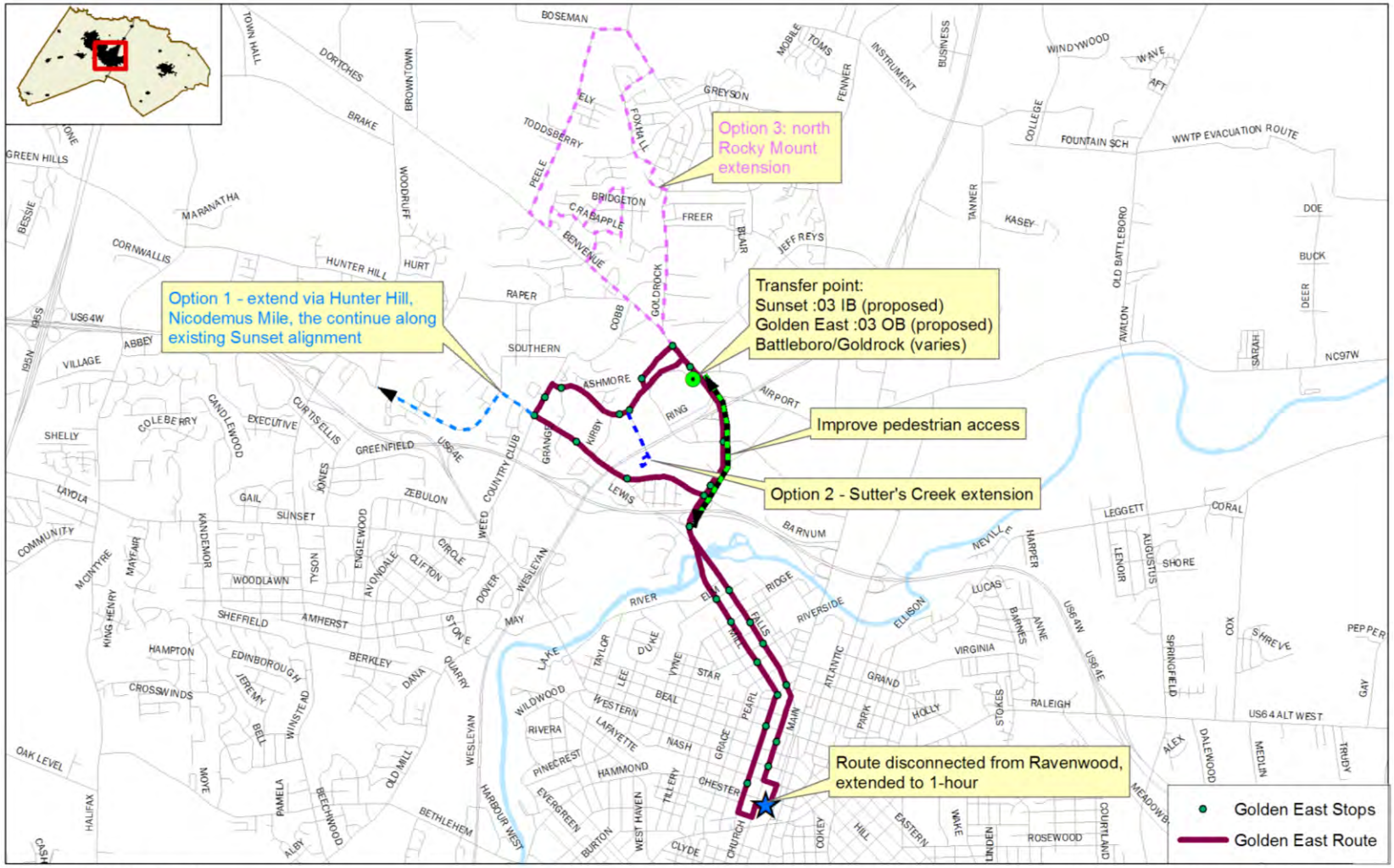
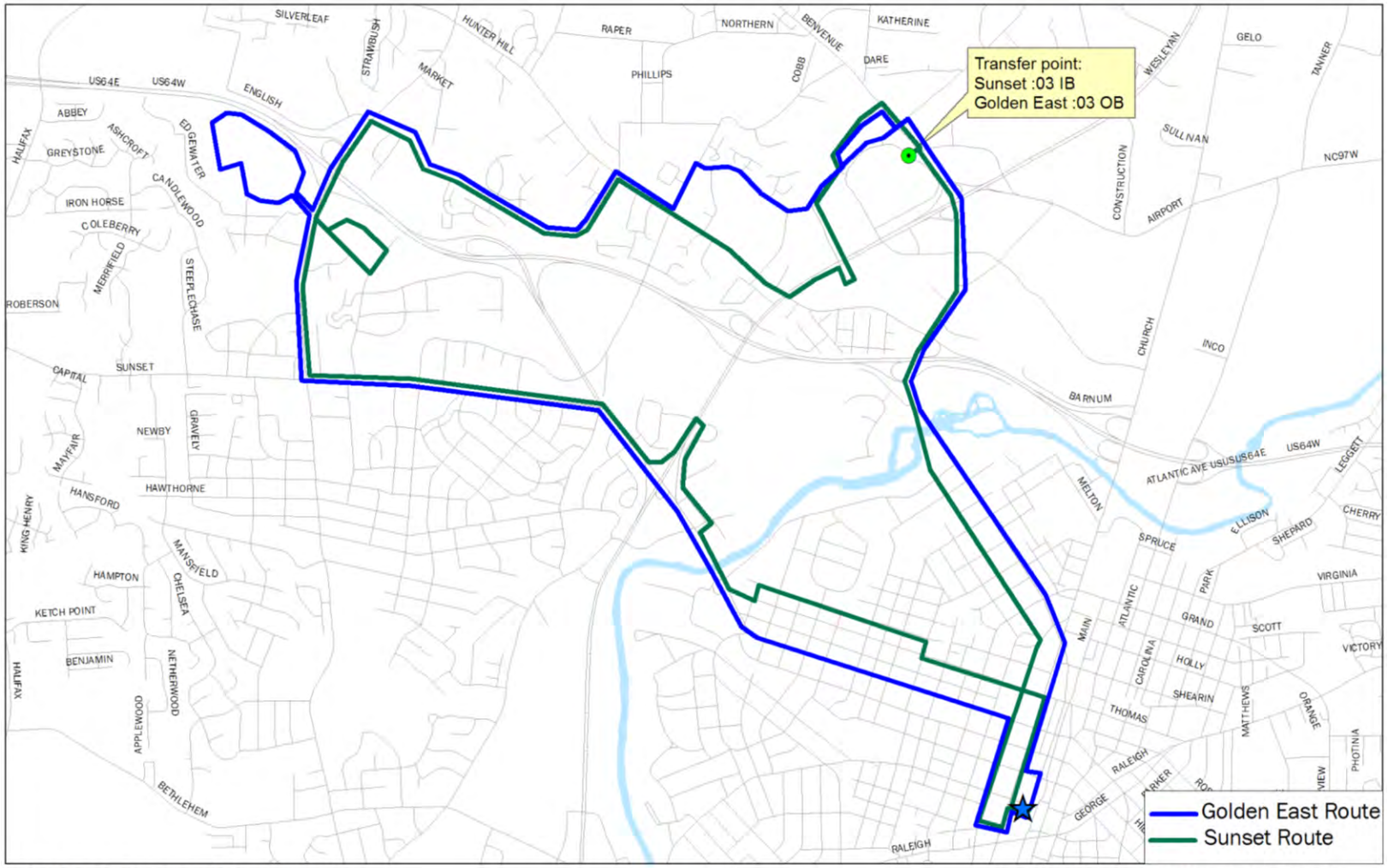


Figure 6.17 TRT Golden East and Sunset Fixed-Routes Routing



GOLDEN EAST & SUNSET RECOMMENDED ALTERNATIVE

TAR RIVER TRANSIT COMMUNITY TRANSPORTATION SERVICE PLAN

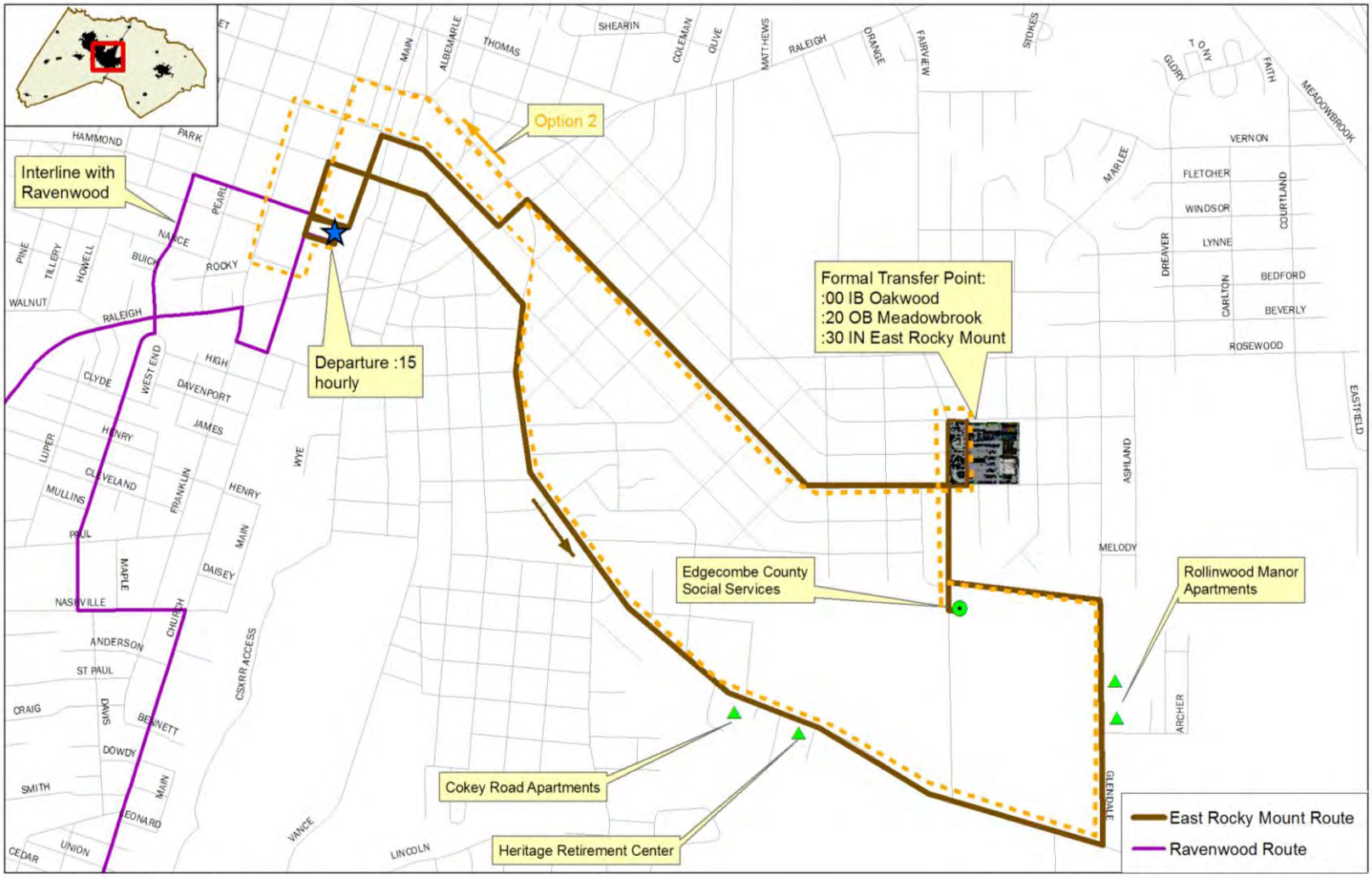
East Rocky Mount Route

Description

East Rocky Mount is a proposed future Route #8 that would operate in east Rocky Mount. The area in question is currently served by Meadowbrook and Oakwood routes. The purpose of this route is to strengthen existing service to locations such as Edgecombe County Social Services and Oakwood Shopping Center, and serve new locations along Cokey Road such as Cokey Road Apartments and Heritage Retirement Center, and Rollinwood Apartment Complex at Rollinwood Drive/South Glenwood Drive. The new East Rocky Mount route is a 30-minute route that would be interlined with the Ravenwood route (after Ravenwood is disconnected from the Golden East route).

The potential new route would leave the Transfer Center at :15 every hour and arrive back at the Transfer Center at :44 every hour (it would be interlined with the Ravenwood route, so from there it would continue as Ravenwood). The proposed routing, along with Option 2 alignment is shown on Figure 6.18.

Figure 6.18 TRT East Rocky Mount Fixed-Route Options



EAST ROCKY MOUNT ROUTE OPTIONS

TAR RIVER TRANSIT COMMUNITY TRANSPORTATION SERVICE PLAN

Nash Community College /Little Easonburg Shuttle

Description

Nash Community College/Little Easonburg Shuttle #1 (also referred to as Route #8) operates between the Transfer Center in downtown Rocky Mount and the Nash Community College in Nash County in west Rocky Mount. It has limited stops, serving the Nash Community College, Edwards Junior High, Winstead Elementary School, Kingsway/McIntyre Acres, and Sunset West MHP (see Figure 6.19). The route operates on hourly headways, from 7:15AM to 4:15PM, leaving the Transfer Center at :15 every hour and leaving its main destination, the Nash Community College at :50 every hour. In FY 2008-09, Nash Community College/Little Easonburg had approximately 1,213 monthly riders, making it the second least busy route systemwide (including the two shuttles). Only the Battleboro/Goldrock Shuttle has experienced a worse performance level.

Good points

- Provides service to locations not served by any other TRT routes
- Bi-directional service
- Timekeeping is very good. The route could absorb several additional minutes of run-time if required

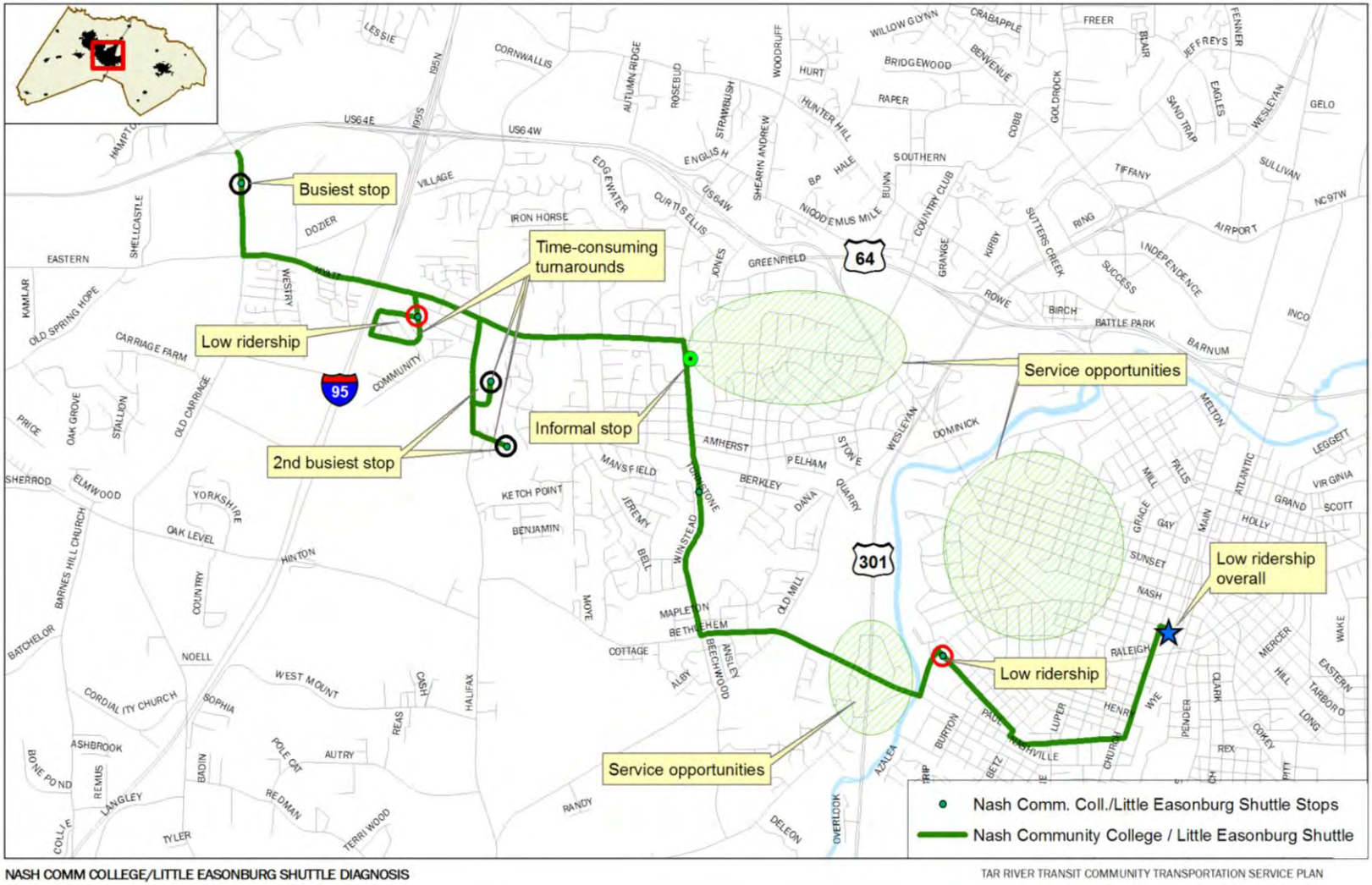
Issues to address

- Low overall ridership does not make the route very cost-effective. One possible solution would be to eliminate the route and replace it with demand-responsive service. A preferred option would be to enhance and expand service provided by the route so that it reaches more potential riders and locations. In addition, the one-way fare on this shuttle could be raised to $2 from the current $1.25 to help offset the higher cost of operating this shuttle service as compared to other fixed routes.
- There are three time-consuming dead-end turnarounds: Kingsway/McIntyre Acres, and Sunset West MHP. These locations are important residential stops, but also include speed bumps.
- Due to excellent timekeeping (field data shows that the shuttle often arrives at the Transfer Center downtown 10 or more minutes early), opportunities to expand service exist, as well as opportunities to formalize existing informal stops such as the one at the intersection of South Winstead Avenue and Sunset Avenue. Stops could be added along the existing alignment (i.e. the already mentioned stop in the Westridge Shopping Center area; the Food Lion Shopping Center at the Harbour West Drive – where transfers to the newly expanded Ravenwood route could be made).

In summary, this shuttle route is sound but some routing and pricing adjustments could be made to increase the number of places served and improve the overall route's cost-effectiveness.

Figure 6.19 shows the issues that relate to specific Nash Community College/Little Easonburg Shuttle locations.

Figure 6.19 TRT Nash Community College/Little Easonburg Shuttle Diagnosis



Nash Community College/Little Easonburg Options

- Expanding service to reach and attract more potential riders would be a viable option to increase the route's cost-effectiveness and performance. The specific places served would include:

    - Formalizing the Westridge Shopping Center bus stop, adding a Food Lion bus stop at Harbour West Drive

    - Consider an alternative outbound routing that would essentially follow the existing Sunset route alignment from the Transfer Center along Sunset Avenue until its intersection with South Winstead Avenue, where the shuttle would continue outbound toward Nash Community College along its existing alignment. This alignment would serve more popular destinations and offer more convenient access to commercial areas along Sunset Avenue for residents of McIntyre Acres, Kingsway and Sunset West MHP. They would be able to take a one-seat ride from their residences not only to downtown Rocky Mount, but also commercial destinations currently served by the Sunset route. If this option were to be implemented, the Nash Community College/Little Easonburg could still leave the Transfer Center downtown at :15 every hour, which would be the same departure time as that of Sunset route. Rather than amend the Sunset's departure time, the preferred alternative would be to change Nash Community College/Little Easonburg's departure from the Transfer Center downtown to :45 every hour. This change would also mean the shuttle would arrive at the Nash Community College at :20 every hour. Thus, it is recommended that the first shuttle leaves the Transfer Center at 6:45AM (rather than the current 7:15AM) and that two additional runs are added to the shuttle's schedule, with the last run leaving the Transfer Center at 4:45PM and arriving back at the Transfer Center at 5:45PM

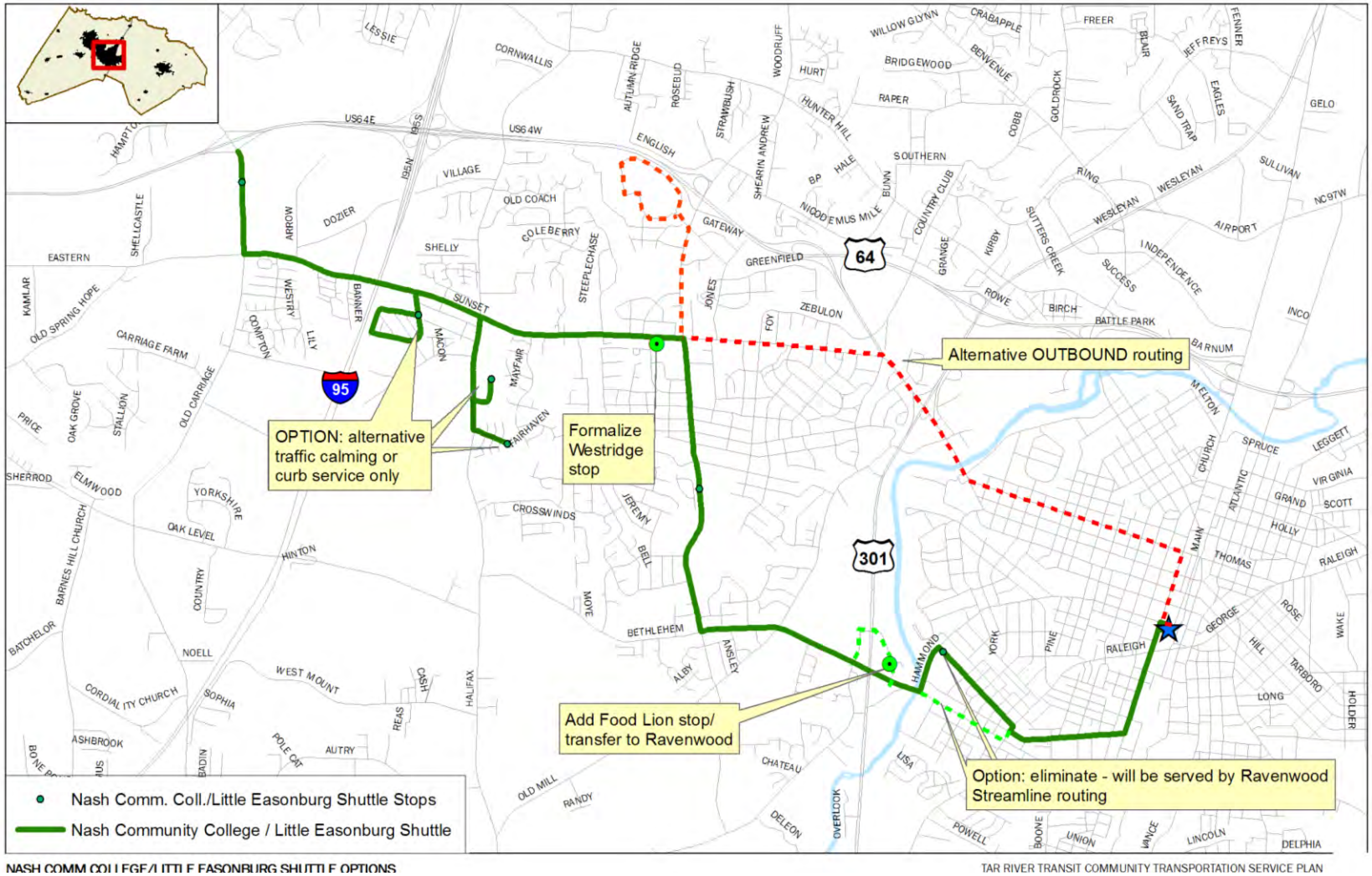
- There are three time-consuming dead-end turnarounds: Kingsway/McIntyre Acres and Sunset West MHP. These important residential locations also include speed bumps. Other innovative traffic calming techniques, ranging from less costly bright LED lights and stop signs and optical speed bars should be considered at these locations. One option would be to stop providing door-to-door service at these locations and offer only curb service at the entrance to each respective apartment complex

- Consider eliminating Edwards Junior High school shuttle stop – its load levels are low and the route could be streamlined and use Nashville Road instead of Edwards Street

- Consider raising one-way fare to $2 from the current $1.25 to help offset the higher cost of operating this shuttle service, as compared to other fixed routes. In the future, when ridership increases, the fare could be rolled back to systemwide levels.

Figure 6.20 shows the discussed Nash Community College/Little Easonburg Shuttle options.

Figure 6.20 TRT Nash Community College/Little Easonburg Shuttle Options



NASH COMM COLLEGE/LITTLE EASONBURG SHUTTLE OPTIONS

TAR RIVER TRANSIT COMMUNITY TRANSPORTATION SERVICE PLAN

Battleboro/Goldrock Shuttle

Description

Battleboro/Goldrock Shuttle #2 (also referred to as Route #9) operates between the Transfer Center in downtown Rocky Mount and the North Carolina Wesleyan College area in northernmost Rocky Mount, Battleboro, and Goldrock. It has limited stops and aside from the North Carolina Wesleyan College it serves Tri-County Industries (TCI), Golden East Mall, Hospira, Battleboro, and Goldrock (see Figure 6.21). The route operates on 1½ hour headways, from 7:15AM to 5:45, with a midday break in service from 11:45AM to 1:15PM. In FY 2008-09, the Battleboro/Goldrock Shuttle had approximately 1,025 monthly riders, making it the least patronized route systemwide (including the two shuttles) and the worst overall performing route.

Good points

- Provides service to locations not served by any other TRT routes such as TCI and Wesleyan College

- Provides very convenient access to the Golden East Crossing Mall (an alternative to Golden East route and proposed Sunset route service), both for Rocky Mount residents, including those transferring to the shuttle at the Transfer center and accessing the Mall via Outbound service, and Wesleyan College students taking the shuttle service Inbound towards the Mall

- Bi-directional service

- Timekeeping is very good. The route could easily absorb several additional minutes run-time if required

Issues to address

- Low overall ridership and the huge distance of each individual run do not make the route very cost-effective. One possible solution would be to eliminate the route and replace it with demand-responsive service. A preferred option would include eliminating segments of the route in the rural areas, notably any areas to the north of Wesleyan College. In addition, one-way fare on this shuttle could be raised to $2 from the current $1.25 to help offset the higher cost of operating this shuttle service as compared to other fixed routes.

- There are rural areas enroute that are very time-consuming, while the ridership is very low and does not justify fixed-route service. Any areas north of Wesleyan College, notably Hospira, Battleboro, and Goldrock locations could probably be better served by demand-responsive service. Eliminating those locations would also cut the shuttle's run time in half, to 45 minutes from the current 1½ hour (bi-directional round trip). This would make the route more in tune with other TRT

routes in terms of run-time, and enable it to function more like a fixed route service, hopefully improving its performance and load levels

- The TCI and Wesleyan College are the most patronized locations along the route (along with the Golden East Crossing Mall stop). Alternative arrangements with the college and TCI could be sought by TRT in order to make the service cost-effective. For instance, a form of partnership could be sought, whereas Wesleyan College provides financial revenue to TRT for providing service to Wesleyan College, while TCI could do the same or independently provide shuttle service to its employees.

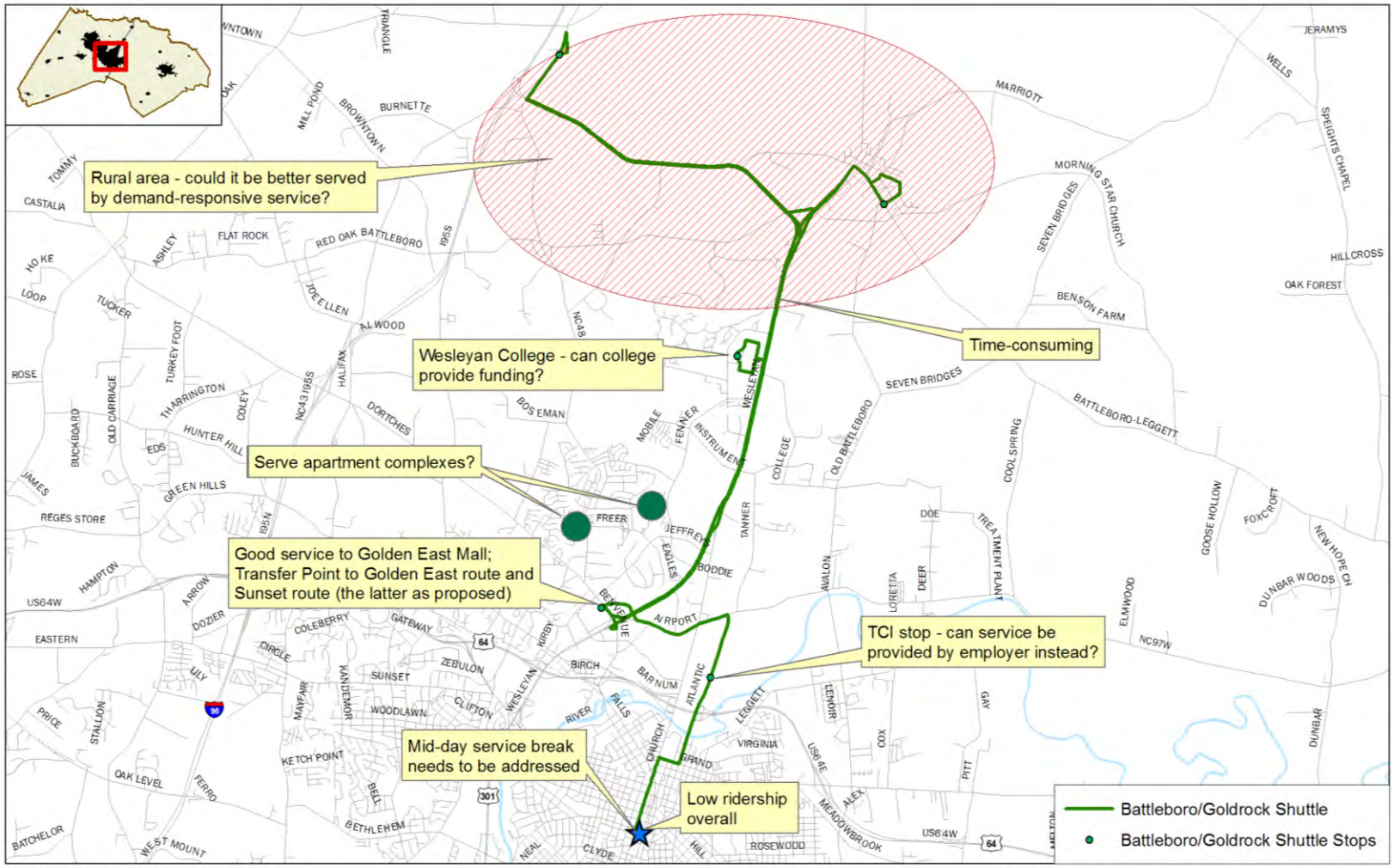
- Mid-day break in service from 11:45AM to 1:15PM needs to be addressed

- When surveyed, North Carolina Wesleyan College students indicated in that the drop off/pick-off point on Campus is not located at the most convenient location.

In summary, this shuttle route is still sound but the some routing and pricing adjustments, including the elimination of certain route segments could be made to improve the overall route's cost-effectiveness and performance level.

Figure 6.21 shows the issues that relate to specific Battleboro/Goldrock Shuttle locations.

Figure 6.21 TRT Battleboro/Goldrock Shuttle Diagnosis



Battleboro/Goldrock Options

- This is the worst performing TRT route. One possible solution would be to eliminate the route and replace it with demand-responsive service. A preferred option would include eliminating segments of the route in the rural areas, notably any areas north of Wesleyan College. The shorter route would cut its overall run-time in half, with each shuttle leaving and arriving at the Transfer Center and Wesleyan College every 45 minutes.

- In addition, one-way fare could be raised to $2 from the current $1.25 to help offset the higher cost of operating this shuttle service as compared to other fixed routes.

- Alternative arrangements with the college and TCI should be sought by TRT in order to make the service more cost-effective. For instance, a form of partnership could be sought, whereas Wesleyan College provides financial revenue to TRT for providing service to Wesleyan College, while TCI could either do the same or independently provide shuttle service to its employees.

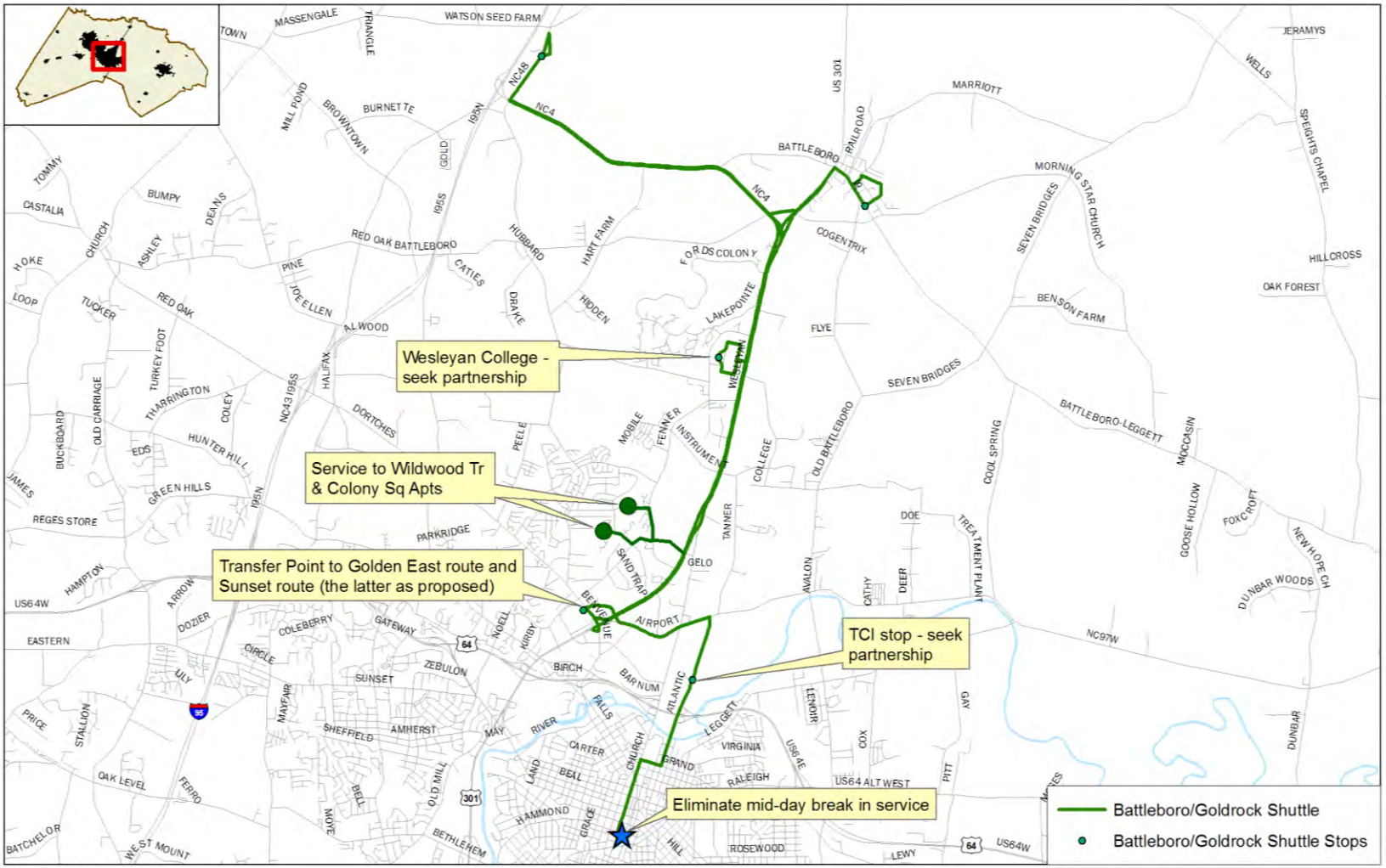
- The mid-day break in service from 11:45AM to 1:15PM should be eliminated to provide continuous service.

- A possible new location for the Shuttle's stop on Campus should be examined

- New service should be offered to Wildwood Trace Apartments, Colony Square Apartments and possibly Premiere Theatre

Figure 6.22 shows the discussed Battleboro/Goldrock Shuttle options.

Figure 6.22 TRT Battleboro/Goldrock Shuttle Options



BATTLEBORO/GOLDROCK SHUTTLE OPTIONS

TAR RIVER TRANSIT COMMUNITY TRANSPORTATION SERVICE PLAN

DEMAND RESPONSIVE SERVICE

Synopsis of Existing Rural Situation

Overall, TRT's demand-responsive services are currently in a good position. TRT offers a full Rural General Public service within the Study Area, and has several cost-effective agency contracts. The financial position is relatively stable.

TRT's demand-responsive services have recently been the subject of a "Performance Plan and Analysis" (PPA), conducted by ITRE in June of 2009. PPA is part of a structured process coordinated by ITRE and NCDOT aimed at helping transit agencies achieve higher performance measures and improve business practices. The CTSP process does not duplicate the Performance Plan process. However, the Performance Plan is an important input to the CTSP, and its findings regarding the rural side of TRT are described here in more detail.

In terms of overall system performance, the PPA noted that TRT's strengths were its good distribution of subscription and demand response trips. The area needing the most improvement was the agency's future growth and improvement in performance statistics. The specific steps TRT should take to improve its demand-responsive service target areas include:

1. **Improved performance measures:** TRT has had low passengers per service mile/hour and revenue mile/hour. The agency needs to: constantly strive to attract new riders, constantly strive to improve performance, and explore additional funding sources for service durring non-peak hours.

2. **Vehicle Utilization**:
    a. **Capital Assessment:** there is a significant reduction in the number of vehicles in service and the number of passengers carried most days between 8:30am and 2:30PM. TRT should explore options for providing more service during this time period. Other funding sources may be available for clients transported during these hours.
    b. **Route Analysis**: TRT should try to reduce the number of routes run each day, as some routes currently only have one or two passengers. A large number of routes also means that there are a large number of manifests creating more paperwork for both drivers and data entry persons.

3. **Route Efficiency:**
    a. TRT should reduce deadhead hours (currently higher than its peers) by exploring the use of a free, web based mapping tool to map a selection of routes and evaluate their efficiency – make changes based on this evaluation.
    b. Train dispatchers and schedulers to use the CTS mapping feature when it is available.
    c. Create and enforce a policy to reduce will calls.
    d. Regularly reevaluate routes using mapping software to maintain efficiency.

e. Explore moving towards implementation of Advanced Scheduling Software to improve efficiency.

4. **No Show and Cancellation Policy:**
   a. Collect information on "late cancellations" that occur less than two hours before the scheduled pick up time or after the driver has been given the manifest.
   b. Revise the no show policy to include cancellations that occur less than two hours before the scheduled pick-up time if there are many cancelations.

5. **Ordered Manifests:**
   a. Request a new manifest report that allows schedulers to order pick-ups and drop-offs separately.
   b. Have drivers and schedulers work together to create manifests that accurately reflect the most efficient routes.
   c. Have drivers review manifests before conducting the route to check if changes are needed.
   d. Longer-term: reevaluate routes to ensure that they are still accurate and efficient.

6. **Complete Origin/Destination Information:**
   a. Explore manifest display options to see if a manifest is available with complete street address and city/town). If a report in this style is not available, request it.
   b. Begin using a manifest style that includes complete stop addresses.
   c. Check each address and add any missing information when scheduling a given trip.

Opportunities to Expand Rural Services

Table 6.1 summarizes the main opportunities for expanding TRT demand-responsive services (the actual recommendations are presented in Section 11 of this Plan), along with an order-of-magnitude cost estimate and potential funding sources. Any chosen options would need more detailed cost estimates to be prepared as part of the budgeting and/or grant-application processes.

Each of these options would be expected to produce increased ridership, either by allowing trips that cannot be made today, or by making the service more attractive and convenient. However, ridership rates will likely increase at a lesser rate than the service increase.

Extend Weekday Evening Service Hours

This option would provide longer evening service using existing vehicles– currently DARTS and RGP operate until 5:15PM, while ADA paratransit operates until 5:30PM. This option would particularly address riders' concerns about having to use a taxi to and from evening shifts at employment locations, which can use up mcuh of that day's earnings. Additional driver hours would be required and there would be a proportional increase in other

operating costs. For planning purposes, it is assumed that the evening operating hours and level of demand would be similar to daytime hours. The net cost would be approximately $110,000 annually.

Provide Sunday Service

This option would provide Sunday service that currently does not exist at all using existing vehicles. It would particularly address riders' concerns about having to use a taxi to and from Sunday shifts at employment locations, which can use up much of that day's earnings. Additional driver hours would be required and there would be a proportional increase in other operating costs. For planning purposes, it is assumed that the Sunday operating hours and level of demand would be similar to Saturdays. The net cost would be approximately $45,000 annually.

Provide Saturday RGP Service

This option would provide Saturday service that currently does not exist at all in terms of RGP service. Existing vehicles would be used. Additional driver hours would be required and there would be a proportional increase in other operating costs. For planning purposes, it is assumed that the Saturday operating hours and level of demand would be similar to weekdays. The net cost would be approximately $22,000 annually

Provide Area or Deviated Fixed-route Services with fixed-route segments to/from Rocky Mount

This option would aim to provide the 'best of both worlds': fixed-route service between Rocky Mount and the main towns, along with demand-responsive service beyond the fixed-route segment. It could also provide demand-responsive service along the fixed-route corridors themselves. To meet ADA requirements, a flexible route service must be able to shift off the fixed-route within the ¾-mile limit without substantially altering fixed-route schedules or denying paratransit service to disabled customers. While there are bus stops along the generally fixed scheduled route, the bus may deviate from the established route to respond to a request for service. Pick-ups on the deviated route are curb-to-curb rather than door-to-door. Once the requested pick-up is made, the bus returns to the fixed-route to serve the next bus stop.

The potential areas and corridors include:

- Tarboro, Nashville, Momeyer, Springg Hope (U.S. 64 corridor, with potential extension to Zebulon from where an express bus to downtown Raleigh can be taken)

- Whitakers, Battleboro, Sharpsburg (U.S.-301 corridor, with potential extension to Wilson)

- Dortches and Red Oak (NC 43 corridor)

Each new fixed-route service is estimated to cost approximately $55,000 per year for a service level similar to that on the existing fixed routes, or approximately $82,000 for an all-day service. Farebox revenue and potential savings in RGP trip costs would likely cover a portion of the costs.

Provide local "circulator" service in towns

This option would provide local connectivity within towns, allowing riders to make local errands, shopping trips or work trips without the need to schedule a ride, and at a fixed-route fare that is more appropriate to the short distances involved. Each circulator would connect residential areas with the main local destinations. Where a fixed-route service also operates between the town and Rocky Mount, a designated transfer point and coordinated schedules would allow for transfers. Initially, each circulator would use one vehicle, probably a cutaway, with service ideally every 30 minutes if this can be accommodated within the desired length of route. Tarboro and Nashville are the most obvious possibilities, but other towns are also possible.

Each circulator service would cost approximately $82,000 for an all-day service. Farebox revenue and potential savings in RGP trip costs would likely cover a proportion of the costs. However, most agencies require a local funding commitment from the town concerned, and this should be the case for TRT as well.

Paratransit Feeder Service

Under this scenario, TRT would provide a paratransit transit feeder service option for a portion of a trip that lacks accessibility and then would shift passengers to an existing TRT fixed-route bus for the remainder of the trip. To maximize the potential for this type of service, the service area needs to be reviewed for accessibility, a strict paratransit eligibility determination process must be in place, and the agency must have a travel training program. This option would support TRT's efforts to shift paratransit customers from paratransit to fixed-route services. This service would be designed to mirror fixed-route area of coverage and hours of service.

Overall, demand-responsive feeder service could lower paratransit costs, as vehicle miles and hours of service and thus operating expenses decline. Essentially, some of the existing TRT paratransit demand could be served by this service. In addition to benefiting disabled passengers, accessible stops are also an added benefit to non-disabled passengers, who might be enticed by a bus shelter or concrete pad, the types of transit amenities often requested by regular TRT riders.

Paratransit feeder service would cost approximately $439,000 for an all-day Monday-Friday service annually (or $658,000 annually if TRT fixed-route service hours are expanded in the evening as proposed). This kind of service would cost about $67,000 extra if it were implemented on Saturdays. Farebox revenue and potential savings in RGP, DARTS, and ADA-accessible trip costs would likely cover a proportion of the costs. Targeted competitive programs such as S.5310, S.5311 and S.5317 could be used for both capital and operating costs as well (as long as the project is a part of a locally-adopted Coordinated Plan).

Taxi Vendors Partnership

Under this scenario, a portion of the paratransit service would be provided by the local taxi vendors in Rocky Mount. This service would be available to residents of the Study Area with disabilities who also have no valid driver's license. Some of the taxi vehicles would have to be wheelchair-accessible. TRT clients would call any participating taxi service directly and be responsible for paying 60 percent of the total fare; the remaining 40 percent would be funded by TRT. The estimated budget for this option is $200,000 annually. Since TRT would no longer need to use their own vehicles and/or drivers, their operating and capital costs would decrease dramatically if this option was successfully implemented. In recent Fiscal Years, the average subsidy per rider in terms of TRT paratransit service has been around $14. If a given taxi ride in Rocky Mount costs $10 (and subsequently, that would be the cost of this taxi paratransit service option per ride), TRT would only be responsible for $4, a very significant decrease from the average current TRT subsidy of $14 per rider. Targeted competitive programs such as S.5310, S.5311 and S.5317 could be used for both capital and operating costs as well (as long as the project is a part of a locally-adopted Coordinated Plan).

One regional transit agency that has been successful in implementing taxi vendor paratransit service is Accessible Raleigh Transportation (ART) in Raleigh, serving the City of Raleigh, the capital of North Carolina. In Raleigh, taxi vendor service is offered along with flexible ADA-accessible paratransit feeder service that operates curb-to-curb service within a 3/4th of a mile buffer around the existing fixed-route Capital Area Transit (CAT) service. Combined, these two paratransit services in Raleigh yielded more than 300,000 annual one-way trips in FY 2008.

This is not to say that all trips can or should be shared. For the easternmost counties, it will rarely be cost-effective to "pass on" a rider to TRT at Rocky Mount, because this would create high deadhead (empty) time and mileage; in that situation the county might as well provide the trip direct.

Grouping of Trips

Lastly, with assistance from human services transportation providers, TRT could potentially group trips for common destinations during off-peak hours. One option would be to offer a weekly shared-ride transportation service. During a set off-peak time and day, the shopping service would pick passengers up at their homes or certain housing developments for grocery shopping trips. This option would fit TRT model well since there are significant gaps in mid-day ridership on many of its paratransit routes (this finding was also noted and documented in the ITRE's Performance Plan and Analysis – Tar River Transit in 2009. The reduction in deadbeat hours coupled with increased farebox revenue could potentially pay for this service alone. This program could be first run on a pilot basis and implemented permanently if proved to be successful.

Regional Coordination of Human-Service Trips

TRT should continue to work with other county transit agencies as part of the effort to improve regional coordination. Three approaches could be considered:

- **Offering spare seats to other agencies**. This would only be on trips that TRT is making anyway. For example, Wilson County could bring a rider to Rocky Mount and join the TRT trip to the Triangle. TRT's fee should aim to be less than the cost of a separate trip.

- **Agencies taking turns on common trip segments**. For example, both Wilson County Transportation System (WCTS) and TRT might have trips to the Triangle today. On one day, TRT would make the trip, collecting the Wilson rider at his/her home or in Rocky Mount. The next day, WCTS would make the trip and collect the TRT rider along the way.

- **A scheduled service aimed closely at meeting human-service needs**, could support many trips. Importantly, the scheduled service would use a pre-agreed funding formula, providing an incentive for agencies to use the scheduled service whenever appropriate.

TABLE 6.1
SERVICE EXPANSION OPTIONS – STUDY AREA DEMAND-RESPONSIVE NETWORK

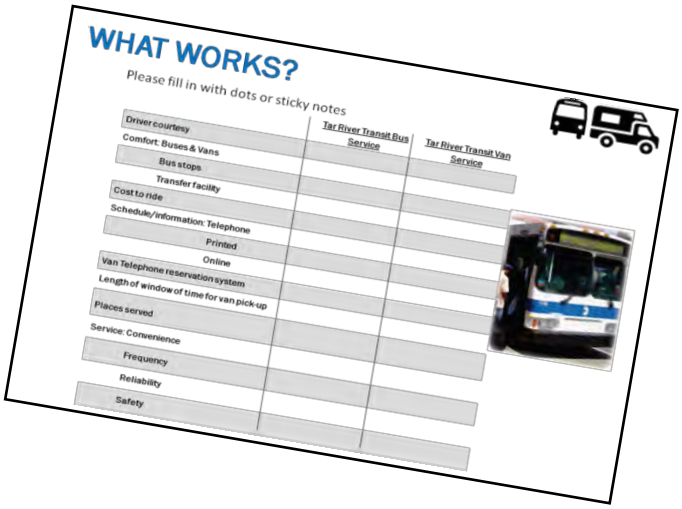
Description	Assumptions								Costs †		Potential funding sources	
	Operating	ADA service	Capital	Vehicles	Hours	Days per year	Hours per year	Rate	Annual Operating	Capital	Operating *	Capital
Sunday service	32 service hours per day (4 vehicles, assume 8 hours per day)	Same vehicles	Existing vehicles, negligible capital costs	N/A	32	52	1,664	26.89	**$44,749**	**Negligible**	– Fares and billing – Increased local funding	N/A
Evening service -extended hours	Service extended by 4 hours from 6:15PM to 10:15PM. Extra 16 service hours per day (4 vehicles, assume 4 hours per day)	Same vehicles	Existing vehicles, negligible capital costs	N/A	16	255	4,080	34.77	**$141,857**	**Negligible**	– Fares and billing – Increased local funding – Could be a substitute for evening fixed-route service	N/A
Saturday RGP service	Same hours as Monday-Friday. 16 service hours per day (2 vehicles, assume 8 hours per day)	Same vehicles	Existing vehicles, negligible capital costs	N/A	16	52	832	26.89	**$22,374**	**Negligible**	– Fares and billing – Increased local funding	N/A

Each additional area /or deviated fixed-route service	Monday-Friday, assume 8 hours per day (split shift)	Same vehicles	Existing vehicles, negligible capital costs	1	8	255	2,040	26.89	**$54,860**	**Negligible**	– Increased local funding – Some additional farebox revenue – Some savings in demand-responsive service	S.5311
Each circulator service	Monday-Friday, assume 12 hours per day	Same vehicles	Existing vehicles, negligible capital costs	1	12	255	3,060	26.89	**$82,290**	**Negligible**	– Increased local funding (especially from municipalities) – Some additional farebox revenue – Some savings in demand-responsive service	S.5311
Paratransit feeder service Monday-Friday Option 1	64 service hours per day (8 vehicles, assume 8 hours per day)	Same vehicles	Existing vehicles, negligible capital costs	N/A	64	255	16,320	26.89	**$438,881**	**Negligible**	– Fares and billing – Substitute for some TRT demand-responsive service – Targeted competitive programs	S.5311, S.5310, S.5317
Paratransit feeder service Moday-Friday Option 2 - Fixed-route extended evening hours of service	96 service hours per day (8 vehicles, assume 12 hours per day)	Same vehicles	Existing vehicles, negligible capital costs	N/A	96	255	24,480	26.89	**$658,321**	**Negligible**	– Fares and billing – Substitute for some TRT demand-responsive service – Targeted competitive programs	S.5311, S.5310, S.5317

Paratransit feeder service Saturday	48 service hours per day (6 vehicles, assume 8 hours per day)	Same vehicles	Existing vehicles, negligible capital costs	N/A	48	52	2,496	26.89	**$67,123**	**Negligible**	-- Fares and billing -- Substitute for some of TRT demand-responsive service -- Targeted competitive programs	S.5311, S.5310, S.5317
Taxi Vendors Partnership	Service provided by local taxi vendors. TRT funds 60% of taxi fare, 40% paid by clients	Portion of taxis must be wheelchair-accessible	Negligible capital costs, mostly administrative costs	N/A - service provided by local taxi vendors		365			**$200,000**	**Negligible**	-- Substitute for some of TRT demand-responsive service -- Targeted competitive programs	S.5311, S.5310, S.5317
Grouping of Trips		Same vehicles	Existing vehicles, negligible capital costs	2	4	52	416	26.89	**$11,187**	**Negligible**	-- Fares and billing -- Reduced deadbeat hours	N/A
* Increased farebox revenue will also represent a partial funding source for each option † Order-of-magnitude costs, for planning and prioritization purposes only												

7. PUBLIC OUTREACH

PUBLIC WORKSHOPS

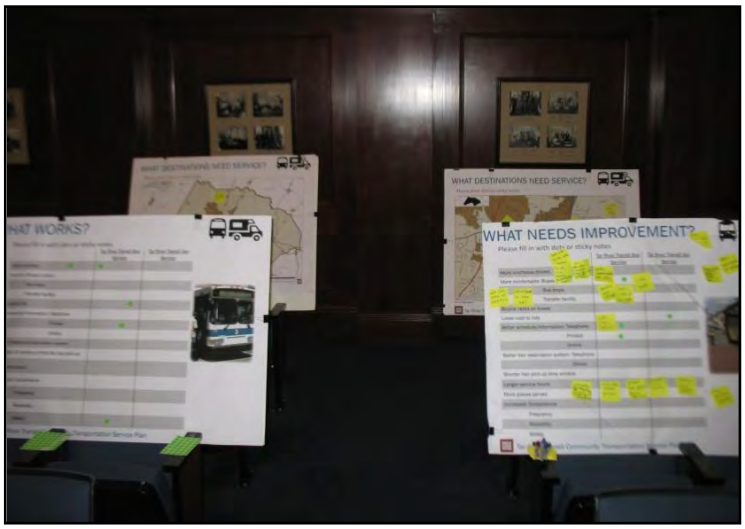


M/A/B facilitated two public workshops with the general public during the study in order to solicit general information, comments, and ideas about existing and future transit service and user needs.

The first Tar River Transit Community Transportation Service Plan Public Workshop was held in three different Study Area locations in January of 2010. The first workshop took place on January 19th from 5:00 to 7:00 PM at the Imperial Center located at 270 Gay Street in Rocky Mount. The second workshop took place on January 21st from 5:00 to 7:00 PM at the Edgecombe County Administrative Building located at 201 St. Andrew Street in downtown Tarboro. The third workshop took place on January 26th from 5:00 to 7:00 PM at the Nash County Administration Building located at 120 West Washington Street in downtown Nashville. The workshops were publicized in local media, at the Transit Center in downtown Rocky Mount, and onboard TRT buses and vans.

The aim of the public workshop was to seek public input on the issues that the Community Transportation Service Plan process should address. In particular, attendees were asked to comment on:

- What works?
- What needs improvement?
- What new transit services are needed?



The workshop was designed so that attendees could "drop in" at any time. A series of boards was displayed, explaining the study and the input sought, and inviting attendees to fill in their responses to specific questions using colored dots and handwritten comments. Staff representing the consulting team was on hand for one-on-

one discussion. This format was chosen to allow attendees a choice of verbal and/or written input, as they preferred, as well as to allow attendees to react to earlier comments.

The sections below summarize responses and comments from the workshop activities.

What Works?

The following comments summarize responses to this question at the workshop (see Figure 7.1):

- Driver courtesy and service safety are noted as TRT's leading attributes
- Acceptable cost to ride is noted
- Participants are satisfied with access to and quality of available printed transit information

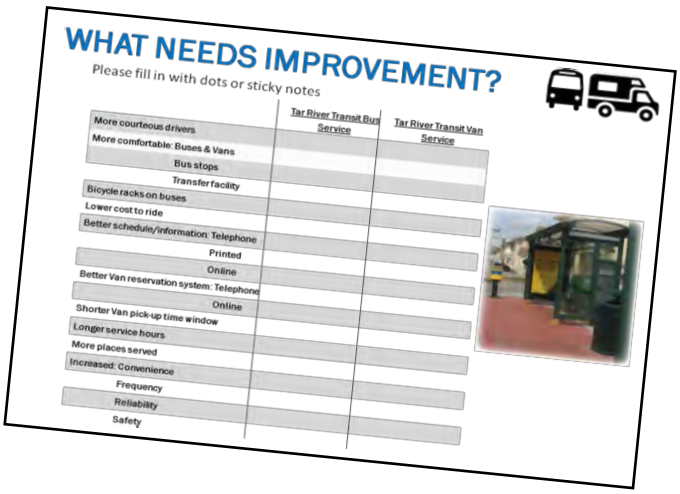
Figure 7.1 TRT Public Workshop 1: What Works?

	Tar River Transit Bus Service	Tar River Transit Van Service
Driver courtesy	✓ ✓	
Cost to ride	✓	
Schedule/information: Telephone		
Printed	✓	
Service: Safety	✓	

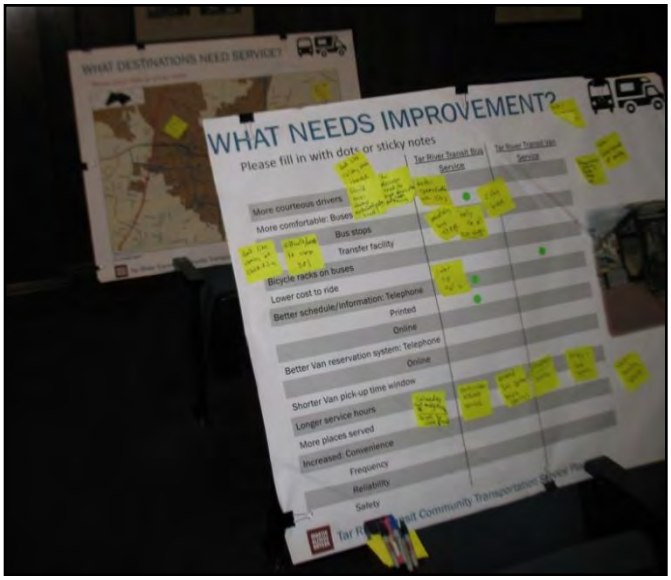
What Needs Improvement?

According to workshop participants, the following TRT service improvements could benefit the riders (see Figure 7.2):

- Lower cost to ride
  - Monthly/weekly discount pass
  - Streamlined process of obtaining senior citizen pass
  - Cater to the needs of seniors



  - RGP is too expensive



- Longer service hours
  - Early morning and late evening weekday service
  - Early morning and late evening Saturday service
  - Offer Sunday service
  - Extend service hours (particularly Hillsdale route)
- More places served outside of the City of Rocky Mount
  - Dortches
  - Tarboro
- More bus stops
  - Along Sunset route
  - In front of Dunkin Donuts and Smithfield Chicken
  - In front of Big Lots (Golden East route circulation issue)
- Enhanced bus stops
  - More shelters are needed
  - Bus stops need to be maintained better
  - Bus stops need to be marked better
- Driver courtesy (only some drivers)
- More comfortable buses and vans
  - Buses should automatically kneel down at each stop
  - Buses could be cleaner.
- Bike racks on buses
- Need to improve transit schedule and information available via phone and in print

Figure 7.2 TRT Public Workshop 1: What Needs Improvement?

	Tar River Transit Bus Service	Tar River Transit Van Service
More courteous drivers	*Some need to be more courteous*	*Some need to be more courteous*
More comfortable: Buses & Vans	✓, *Buses should automatically kneel down at each stop,* *Buses should be cleaner/ cleaned daily*	
Bus stops	*More shelters* *Maintain bus stops* *Clearly mark all bus stops* *More bus stops along Sunset route* *Better bus stop in front of Donut and Smithfield* *Have a stop in front of Big Lots (Golden East route circulation issue)*	
Bicycle racks on buses	✓ ✓	
Lower cost to ride	*Monthly/ weekly pass* *Streamline getting senior citizen pass* *Cater to seniors* *RGP service too expensive*	✓
Better schedule/information: Telephone	✓	
Printed	✓	
Longer service hours	✓✓*Extend Saturday service hours (both early and late)* *Begin service earlier weekdays* *End service later weekdays* *Offer Sunday service* *Earlier and later Hillsdale route service*	
More places served	✓ *Dortches, Tarboro*	
Increased: Convenience	*Difficult to cross US 301 (Sunset route)* *Don't like chains at Chick-fil-A*	

The second Tar River Transit Community Transportation Service Plan Public Workshop was held at the TRT's downtown Transfer Center at 111 Coastline Avenue in Rocky Mount. The workshop took place on April 13, 2010, from 4 to 6 PM. The workshop was publicized in local media, at the Transit Center in downtown Rocky Mount, and onboard TRT buses and vans.

The aim of the public workshop was to discuss proposed future public transit changes for the TRT service area. In particular, attendees were asked to comment on:

- What do you think of the proposed improvements?
- Will the proposed improvements work?
- What else might need improvement?

The workshop was designed so that attendees could "drop in" at any time and the location for this public workshop at the Transfer Center downtown facilitated that very well – the riders were able to stop by and voice their opinion before they boarded and/or after they deboarded their buses and in-between transfers. As in the case of the first public workshop, a series of boards was displayed, explaining the study and proposed service changes, and inviting attendees to fill in their comments using colored dots and handwritten comments. Staff representing the consulting team was on hand for one-on-one discussion.

In general, the attendees were very satisfied with the proposed TRT service changes, particularly extended weekday evening fixed-routes service hours, as well as new/extended service to more destinations. Two comments sum up the general feeling very well: 'Now I can work' (response to the proposed new East Rocky Mount fixed-route service) and 'Now I can get groceries' (response to extended service to the Food Lion shopping area on Ravenwood fixed-route). The riders really liked the proposed realignment of Golden East and Sunset routes and extensions to other routes. They also were very appreciative of the convenience the proposed satellite transfer points

would offer them and very much liked the proposed reverse-commute corridor service to along Us-64 from Nashville though Rocky Mount to Tarboro (comment: 'I can get to Lowes in Nashville,' 'I can get to work in Tarboro').

Some of the riders stated that the proposed hours of service – two additional hours of weekday evening service on fixed-routes – were still not enough to provide an adequate level of service to returning commuters. Other riders, while in favor of the realigned Golden East and Sunset fixed routes, were concerned with the removal of service along the portion of Hunter Hill Road once the proposed Sunset route is realigned. These comments were very helpful in finalizing the proposed TRT service changes – while the hours of service were further extended slightly on a few routes (notably on both shuttles and an extra Golden East route run), the Hunter Hill Road service between Benvenue Road and North Wesleyan Boulevard was brought back by realigning routing of the Battleboro/Goldrock Shuttle.

ON-BOARD TRT SURVEY

Introduction

M/A/B conducted an on-board survey of fixed route and demand responsive TRT riders to determine rider characteristics, trip purposes, trip origins and destinations, riding habits of the passengers, perception of service and potential improvements. The surveys were conducted on all nine fixed routes by M/A/B staff, as well as locally hired students from the North Carolina Wesleyan College. Surveyors were on hand to verbally administer the surveys to disabled or limited English proficiency persons. The survey results were used to identify existing benefits and deficiencies and help quantify transit demand.

Methodology

The on-board survey was offered to the riders of the TRT bus service on January 20, 2010. The bus riders completed a total of 263 bus surveys. Van riders completed an additional 7 surveys – those surveys were handed out to the riders by van drivers from January 20th to 26th, 2010. There were slight differences between bus and van survey design. It should be noted that the results of van surveys should be treated as less significant when compared to the bus surveys due to the smaller sample of respondents. The summary is not intended as a full statistical analysis of the results. Instead, it is intended as an easy-reading summary of the results and their possible implications for TRT. Detailed results and analysis are presented in the Appendix A.

Summary of Significant Issues

The top issues identified in the surveys can be summarized as follows:

- Overall, the perception of both Tar River Transit Bus and Van service was good among the surveyed riders.

- The majority of surveyed riders are established transit patrons. Overall, nearly 75 percent of the surveyed riders have been using Tar River Transit Bus service for longer than 1 year.

- Many aspects of the Tar River Transit service were perceived to be first-rate by the riders. The riders are particularly satisfied with the cost of service (with 72 percent of them assigning it an above average rating – "good or better"), giving high ratings to the safety aspect of service (80 percent of the respondents giving it an "excellent" or "good" rating), and acknowledging high level of driver courtesy (80 percent of the respondents giving it an "excellent" or "good" rating).

- The greatest proportion of trips, 32 percent, was for work purposes. About 21 percent of the trips were personal business trips, followed by 18 percent to and from school, 12 percent for shopping, and 11 percent for medical/dental services. Lastly, 7 percent of the trips were for human/social services and recreation/social purposes. Thus, regular riders (those riders who use TRT to get to work and school) constitute nearly half, or 49 percent of the riders, followed by variable riders (who use TRT for personal business and recreation/social reasons, as well shopping trips) who comprise 36 percent, and, lastly, scheduled riders (who use TRT for medical/dental services and human/social services) at 15 percent.

- Most riders are captive transit users rather than choice users – they depend on Tar River Transit to get around. In fact, about 63 percent of the responses could be categorized as originating from captive riders (disability, limited mobility, lack of alternatives, and cost of service). The remaining 37 percent were choice riders who deliberately chose to ride Tar River Transit either because they perceived the service to be convenient, environmentally-friendly, or to avoid traffic.

- In terms of captive riders, about 17 percent of the respondents would not make the transit trip if service was not available and 2 percent would have sent someone else on this trip for them. Thus, 19 percent of the respondents would not have made the trip at all if TRT service was not available. An additional 6 percent would have relied on TRT. In addition, 30 percent of the respondents would get a ride from someone else and 14 percent would take a cab. In terms of choice riders, some of them would opt to drive if TRT services were not available: nearly 5 percent of the respondents stated they would rather rent or buy a vehicle choose to drive alone, while 2 percent

would drive alone instead. Non-motorized transportation would be the mode of choice for nearly 26 percent of the surveyed respondents if TRT service was not available; 22 percent would walk to their destinations while 3 percent would bicycle instead.

- The vast majority of the respondents, 86 percent, reached their respective TRT bus stops by walking, 10 percent transferred from another bus, and the remaining 4 percent used other alternatives.

According to the surveyed riders, several service improvements would result in a significant increase in ridership levels:

- Expanding service hours, particularly weekday evening hours. Nearly 81 percent of the respondents claimed that longer evening weekday hours would result in them becoming regular TRT riders (taking an additional 2 or more trips on average per week). Longer evening weekend service hours would result in 79 percent of them becoming regular TRT riders, followed by early weekday service at 78 percent and early weekend service at 76 percent.

- Increased frequency of service and serving more destinations, particularly along US Hwy 301 in the City of Rocky Mount as well as Nashville and Tarboro. Almost 77 percent of the riders would become regular riders (take 2 or more additional transit trips per week) if Tar River Transit served more places in Rocky Mount. In general, the riders would like better access to shopping areas and bus service to all major housing complexes.

- Offering a weekly/monthly discount pass. Around 63 percent of all respondents claimed they would become regular riders (make at least 2 or more transit trips per week) if some sort of a fare discount was implemented.

- More courteous drivers, more comfortable buses and more bus stops along with better access to printed and phone transit information.

STUDENT TRT SURVEY

As part of the Tar River Transit Community Transportation Service Plan study, M/A/B and North Carolina Wesleyan College (NCWC) conducted a survey of NCWC students to determine transit rider characteristics, trip purposes, trip origins and destinations, riding habits of the passengers, perceptions of service and potential improvements. The surveys were geared specifically towards the Wesleyan College student body and the existing Battleboro/Goldrock Shuttle service, which serves the NCWC campus. The summary is not intended as a full statistical analysis of the results. Instead, it is intended as an easy-reading summary of the results and their possible implications for Tar River Transit and Wesleyan College. Detailed results and analysis are presented in the Appendix A.

Summary of Significant Issues

The top issues identified in the surveys can be summarized as follows:

- Most students are not aware of the transit services available to them and have little knowledge of the variety of destinations served by the Shuttle
- About 5 percent of the respondents are captive transit riders and fully depend on the Shuttle to get around, including getting to and from NCWC
- More students would be willing (and able) to use the Battleboro/Goldrock Shuttle if it operated without the mid-day break in service and had extended evening weekday service hours
- Students would support a Student Transit Fee, particularly if the above service improvements were implemented
- Alternatively, students would ride the Shuttle more often if a Student Ride Pass was available
- Many of the requested destinations that students believe should be served by the Shuttle will be served by the proposed modified Shuttle service in the future

8. URBAN TRANSIT DEMAND ANALYSIS

One of the key steps in developing and evaluating public transportation plans is an analysis of the mobility needs of population segments and their potential transit usage. Transit demand analysis refers to demand for public transportation in a project area. Not all factors affecting transit demand can be forecasted, but several methods have been developed to help estimate it. The analysis makes extensive use of the demographic data and trends discussed in Section 4 of this report.

Transit demand in the Study Area and the City of Rocky Mount (analyzed both together and separately for the purpose of this estimation) is analyzed in order to help identify and evaluate transit service alternatives. Three different methods were used to estimate the maximum transit trip *need* and feasible *demand* for existing services in the Study Area. Due to a much higher population density, the City of Rocky Mount's transit demand analysis was based on existing methodologies focusing on estimating *urban* transit demand. For the rest of the Study Area (rural in character, consisting of Edgecombe and Nash Counties excluding the city of Rocky Mount), two other existing methods were used in order to estimate the potential transit demand:

- Rural Transit Demand Estimation Model
- Greatest Transit Needs Index Model

All methods and findings are described in detail in the following sections.

URBAN TRANSIT DEMAND IN THE CITY OF ROCKY MOUNT

Methodology

The following methods are used to estimate potential transit trip demand in the City of Rocky Mount:

1. **Total Urban Demand**: estimate of the total demand for transit trips in by all residents of the City of Rocky Mount. This estimate is based on analyzing total transit modal split and motor vehicle availability.

2. **Total Demand By Ridership Segment**: estimate of transit demand segmented into the following categories:

    a. **Employee Demand**

    b. **Demand by seniors and mobility-impaired persons**

    c. **General public non-work demand**

    d. **Commuter demand.**

It should be noted that the methods described above yield estimates of potential transit demand for an idealized transit service in an area with a very high level of transit service. In reality, no transit agency would be able to meet 100 percent of the estimated potential demand. Additionally, the data used for the demand analysis is based on the 2000 U.S. Census. While this data may be considered quite dated compared to the current analysis year, it is the most reliable source of information available at the block group demographic level, which is required to disaggregate the Study Area for the purpose of this analysis. Lastly, it should be noted that the actual city limits of Rocky Mount differ quite substantially from how U.S. Census set up limits for its tracts and block groups. An effort was made to align the borders of the City of Rocky Mount with appropriate block groups as closely as possible. In the end, the resulting census groups used to estimate urban transit demand were populated by 55,982 residents, which is very close to the actual 55,893 as reported by the 2000 U.S. Census.

Total Urban Demand

Total Demand by Modal Split

The analysis of total demand by modal split relies on the national percentage of all trips (not just employee work trips) made via transit. Nationwide, between 0.5 (for new service) and 1.2 percent of all trips are made on transit where it is available, and each person makes 3.5 one-way trips per day on average. Once the demographic characteristics of the City of Rocky Mount are taken into consideration, the optimal modal split for the city is estimated to be around 1.0 percent. The 2000 U.S. Census population data for Rocky Mount is shown in

TABLE 8.1
ANNUAL TRANSIT TRIP DEMAND ESTIMATION BY MODAL SPLIT (CITY OF ROCKY MOUNT)

. The data is organized by census tracts and census block groups, as well as respective counties since the City of Rocky Mount is located in both Edgecombe and Nash Counties.

The 2000 general population demand by modal split for the urban area defined as the City of Rocky Mount can be estimated at close to half a million annual one-way transit trips, as shown:

- 55,982 × 255 days/year × 3.5 trips per day = 49,963,935 person-trips per year.
- 49,963,935 × 1.0% = 499,639 annual one-way transit trips per year.

Of the estimated total urban demand, the largest segments are located in the northernmost part of Rocky Mount – in the Wesleyan College area (tract 37127010600, block groups 2 and 3), as well as in the western part of Rocky Mount (tract 37127010504, block group 3; and tract 37127010300, block group 6). Altogether, these four block groups, located largely in the periphery of town and notably not presently served by Tar River Transit, account for about 23.3 percent of all one-way transit trip demand in the city.

TABLE 8.1
ANNUAL TRANSIT TRIP DEMAND ESTIMATION BY MODAL SPLIT (CITY OF ROCKY MOUNT)

Census		County	2000 Population	One-Way Transit Trip Demand	
Tract	Block Group			Number	Percent
37065020100	1	Edgecombe	330	2,946	0.6%
37065020200	1	Edgecombe	1,218	10,871	2.2%
37065020200	2	Edgecombe	947	8,452	1.7%
37065020200	3	Edgecombe	910	8,122	1.6%
37065020200	4	Edgecombe	1,528	13,638	2.7%
37065020200	5	Edgecombe	1,426	12,728	2.5%
37065020300	1	Edgecombe	1,741	15,539	3.1%
37065020300	2	Edgecombe	1,543	13,772	2.8%
37065020300	3	Edgecombe	900	8,033	1.6%
37065020300	4	Edgecombe	1,505	13,433	2.7%
37065020400	1	Edgecombe	1,405	12,540	2.5%
37065020400	2	Edgecombe	811	7,239	1.4%
37065020400	3	Edgecombe	989	8,827	1.8%
37065020400	4	Edgecombe	724	6,462	1.3%
37065020400	5	Edgecombe	1,181	10,541	2.1%
37127010100	1	Nash	413	3,687	0.7%
37127010200	1	Nash	1,327	11,844	2.4%
37127010200	2	Nash	1,321	11,790	2.4%
37127010200	3	Nash	1,701	15,182	3.0%
37127010200	4	Nash	1,031	9,202	1.8%
37127010300	1	Nash	1,030	9,193	1.8%
37127010300	2	Nash	714	6,373	1.3%
37127010300	3	Nash	992	8,854	1.8%
37127010300	4	Nash	938	8,372	1.7%
37127010300	6	Nash	2,431	21,697	4.3%
37127010400	1	Nash	606	5,409	1.1%
37127010400	2	Nash	1,707	15,235	3.0%
37127010400	3	Nash	1,366	12,192	2.4%
37127010502	1	Nash	1,811	16,164	3.2%
37127010502	2	Nash	732	6,534	1.3%
37127010502	3	Nash	891	7,953	1.6%
37127010502	4	Nash	1,669	14,896	3.0%
37127010502	5	Nash	1,184	10,568	2.1%
37127010503	1	Nash	852	7,605	1.5%

37127010503	2	Nash	2,070	18,475	3.7%
37127010504	2	Nash	1,091	9,738	1.9%
37127010504	3	Nash	3,531	31,515	6.3%
37127010600	1	Nash	1,262	11,264	2.3%
37127010600	2	Nash	3,253	29,034	5.8%
37127010600	3	Nash	3,853	34,389	6.9%
37127010700	3	Nash	1,048	9,354	1.9%
City of Rocky Mount TOTAL			**55,982**	**499,662**	**100.0%**
Source: US Census 2000					

Total Demand by Vehicle Availability

Another methodology aimed at estimating urban transit demand was presented in Transportation Research Record # 730, *Demand Estimating Model for Transit Route and System Planning in Small Urban Areas* (1979). The methodology relies on the single most statistically significant indicator of transit need, the availability of a motor vehicle, in estimating transit demand. Those residents of households with no access to vehicle at all have a transit demand rate of 0.4 trips per day, while that rate drops to 0.1 for residents of households with one vehicle.

Using those transit demand rates, the total potential urban transit in the City of Rocky Mount can be estimated as:

- (0.4 × number of residents of zero-vehicle households + 0.1 × number of residents of one-vehicle households) × 255 days/year = 1,292,105

A more reasonable single estimate for the total urban area can be derived by averaging the two estimates (mode split and vehicle availability). As shown in Table 8.6, that average for the City of Rocky Mount would be 896,284.

Table 8.2 shows total demand by vehicle availability for the City of Rocky Mount.

TABLE 8.2
ANNUAL TRANSIT TRIP DEMAND ESTIMATION BY VEHICLE AVAILABILITY (CITY OF ROCKY MOUNT)

Census		County	Residents		One-Way Transit Trip Demand	
Tract	Block Group		Zero Vehicle Household	One Vehicle Household	Number	Percent
37065020100	1	Edgecombe	147	140	18,601	1.4%
37065020200	1	Edgecombe	365	426	48,063	3.7%
37065020200	2	Edgecombe	236	549	38,053	2.9%
37065020200	3	Edgecombe	202	218	26,135	2.0%
37065020200	4	Edgecombe	297	691	47,920	3.7%
37065020200	5	Edgecombe	228	317	31,364	2.4%
37065020300	1	Edgecombe	309	706	49,482	3.8%
37065020300	2	Edgecombe	352	842	57,331	4.4%
37065020300	3	Edgecombe	62	316	14,352	1.1%
37065020300	4	Edgecombe	196	435	31,069	2.4%
37065020400	1	Edgecombe	469	598	63,111	4.9%
37065020400	2	Edgecombe	281	417	39,294	3.0%
37065020400	3	Edgecombe	428	369	53,034	4.1%
37065020400	4	Edgecombe	113	296	19,041	1.5%
37065020400	5	Edgecombe	106	131	14,202	1.1%
37127010100	1	Nash	57	163	9,988	0.8%
37127010200	1	Nash	403	348	49,917	3.9%
37127010200	2	Nash	264	601	42,241	3.3%
37127010200	3	Nash	509	797	72,284	5.6%
37127010200	4	Nash	236	345	32,912	2.5%
37127010300	1	Nash	117	389	21,812	1.7%
37127010300	2	Nash	0	221	5,623	0.4%
37127010300	3	Nash	271	466	39,558	3.1%
37127010300	4	Nash	57	467	17,695	1.4%
37127010300	6	Nash	115	718	30,051	2.3%
37127010400	1	Nash	75	241	13,826	1.1%
37127010400	2	Nash	460	676	64,193	5.0%
37127010400	3	Nash	193	561	34,017	2.6%
37127010502	1	Nash	260	728	45,068	3.5%
37127010502	2	Nash	112	359	20,574	1.6%
37127010502	3	Nash	40	426	14,941	1.2%
37127010502	4	Nash	0	519	13,226	1.0%
37127010502	5	Nash	27	264	9,458	0.7%
37127010503	1	Nash	14	195	6,453	0.5%

37127010503	2	Nash	44	536	18,167	1.4%
37127010504	2	Nash	113	289	18,866	1.5%
37127010504	3	Nash	163	533	30,202	2.3%
37127010600	1	Nash	105	583	25,615	2.0%
37127010600	2	Nash	143	924	38,189	3.0%
37127010600	3	Nash	181	1,389	53,916	4.2%
37127010700	3	Nash	62	263	13,061	1.0%
City of Rocky Mount TOTAL			**7,813**	**19,448**	**1,292,905**	**100.0%**
Source: US Census 2000						

Total Demand By Ridership Segment

Employee Transit Demand

According to American Public Transit Association and Federal Transit Administration, nationwide, approximately 1.8 to 2.5 percent of employees use transit if it is available. When considering the fact there is a mismatch between jobs and places of residence and that places of employment are generally dispersed across the City of Rocky Mount (not to mention the entire Study Area), the expected work transit mode split in Rocky Mount could be reasonably set at 2.0 percent. Typically, each worker makes two trips 250 times per year. As shown in

TABLE 8.3
ESTIMATED ANNUAL EMPLOYEE TRANSIT DEMAND (CITY OF ROCKY MOUNT)

, based on 14,373 Rocky Mount residents employed outside the home in Rocky Mount, the employee transit demand is calculated as:

- 14,373 × 2 × 250 = 7,186,500 total annual one-way person trips
- 7,186,500 × 2.0% = 143,730 annual one-way transit trips.

TABLE 8.3
ESTIMATED ANNUAL EMPLOYEE TRANSIT DEMAND (CITY OF ROCKY MOUNT)

Census		County	Residents employed		Annual One-Way Transit Trip Demand	
Tract	Block Group		Outside the home	Outside the home in City of Rocky Mount	Total	Transit
37065020100	1	Edgecombe	56	40	20,000	400
37065020200	1	Edgecombe	444	326	163,000	3,260
37065020200	2	Edgecombe	200	118	59,000	1,180
37065020200	3	Edgecombe	269	162	81,000	1,620
37065020200	4	Edgecombe	483	329	164,500	3,290
37065020200	5	Edgecombe	602	425	212,500	4,250
37065020300	1	Edgecombe	649	430	215,000	4,300
37065020300	2	Edgecombe	483	269	134,500	2,690
37065020300	3	Edgecombe	446	360	180,000	3,600
37065020300	4	Edgecombe	599	271	135,500	2,710
37065020400	1	Edgecombe	413	289	144,500	2,890
37065020400	2	Edgecombe	285	98	49,000	980
37065020400	3	Edgecombe	171	90	45,000	900
37065020400	4	Edgecombe	178	88	44,000	880
37065020400	5	Edgecombe	499	330	165,000	3,300
37127010100	1	Nash	163	94	47,000	940
37127010200	1	Nash	363	225	112,500	2,250
37127010200	2	Nash	377	208	104,000	2,080
37127010200	3	Nash	478	302	151,000	3,020
37127010200	4	Nash	389	274	137,000	2,740
37127010300	1	Nash	397	340	170,000	3,400
37127010300	2	Nash	320	273	136,500	2,730
37127010300	3	Nash	321	242	121,000	2,420
37127010300	4	Nash	398	272	136,000	2,720
37127010300	6	Nash	1,118	599	299,500	5,990
37127010400	1	Nash	186	143	71,500	1,430
37127010400	2	Nash	635	401	200,500	4,010
37127010400	3	Nash	576	406	203,000	4,060
37127010502	1	Nash	814	585	292,500	5,850
37127010502	2	Nash	279	174	87,000	1,740
37127010502	3	Nash	499	254	127,000	2,540
37127010502	4	Nash	624	480	240,000	4,800
37127010502	5	Nash	501	383	191,500	3,830

37127010503	1	Nash	401	193	96,500	1,930
37127010503	2	Nash	1,014	704	352,000	7,040
37127010504	2	Nash	374	301	150,500	3,010
37127010504	3	Nash	1,773	1,202	601,000	12,020
37127010600	1	Nash	589	362	181,000	3,620
37127010600	2	Nash	1,656	1,063	531,500	10,630
37127010600	3	Nash	1,800	1,229	614,500	12,290
37127010700	3	Nash	456	39	19,500	390
City of Rocky Mount TOTAL			**22,278**	**14,373**	**7,186,500**	**143,730**
Source: US Census 2000						

Seniors and Mobility-Impaired Persons Transit Demand

Peat, Marwick, Mitchell & Company developed the most thorough analysis of transit demand among the elderly and mobility-impaired persons in *Description of the Transportation Handicapped Population* (1975). Their methodology derives the elderly and mobility-impaired Transit demand as:

- Seniors & Mobility-Impaired Trips per year =

  Seniors & Mobility-Impaired Population × ((25 percent Mobility-Limited × 5.2 trips per week) + (5 percent Homebound × 1.4 trips per week)) × 25 percent by Transit mode × 51 weeks per year.

Applying the U.S Census Bureau's 2000 total population estimates of 9,472 seniors and 11,718 mobility-impaired persons residing within the City of Rocky Mount, the formula yields a total transit demand of 377,089 one-way trips per year made together by that segment of Rocky Mount's population, as shown in

Table 8.4
Estimated Annual Elderly and Mobility-Impaired Transit Demand (City of Rocky Mount)

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TABLE 8.4
ESTIMATED ANNUAL ELDERLY AND MOBILITY-IMPAIRED TRANSIT DEMAND (CITY OF ROCKY MOUNT)

Census		County	Residents			One-Way Transit Trip Demand
Tract	Block Group		Seniors (60+)	Mobility-Impaired	Total Persons	Number
37065020100	1	Edgecombe	112	98	210	3,669
37065020200	1	Edgecombe	166	408	574	10,027
37065020200	2	Edgecombe	105	251	356	6,219
37065020200	3	Edgecombe	143	242	385	6,725
37065020200	4	Edgecombe	233	413	646	11,285
37065020200	5	Edgecombe	189	352	541	9,450
37065020300	1	Edgecombe	239	366	605	10,568
37065020300	2	Edgecombe	87	278	365	6,376
37065020300	3	Edgecombe	156	122	278	4,856
37065020300	4	Edgecombe	184	313	497	8,682
37065020400	1	Edgecombe	266	367	633	11,057
37065020400	2	Edgecombe	223	220	443	7,739
37065020400	3	Edgecombe	121	180	301	5,258
37065020400	4	Edgecombe	197	141	338	5,905
37065020400	5	Edgecombe	238	257	495	8,647
37127010100	1	Nash	63	105	168	2,935
37127010200	1	Nash	215	441	656	11,459
37127010200	2	Nash	164	405	569	9,940
37127010200	3	Nash	148	461	609	10,638
37127010200	4	Nash	332	324	656	11,459
37127010300	1	Nash	348	312	660	11,529
37127010300	2	Nash	230	105	335	5,852
37127010300	3	Nash	177	298	475	8,298
37127010300	4	Nash	127	221	348	6,079
37127010300	6	Nash	458	427	885	15,459
37127010400	1	Nash	118	222	340	5,939
37127010400	2	Nash	261	433	694	12,123
37127010400	3	Nash	293	356	649	11,337
37127010502	1	Nash	497	427	924	16,140
37127010502	2	Nash	143	319	462	8,070
37127010502	3	Nash	122	123	245	4,280
37127010502	4	Nash	649	272	921	16,088
37127010502	5	Nash	385	154	539	9,415

37127010503	1	Nash	212	109	321	5,608
37127010503	2	Nash	408	275	683	11,931
37127010504	2	Nash	278	217	495	8,647
37127010504	3	Nash	271	458	729	12,734
37127010600	1	Nash	110	183	293	5,118
37127010600	2	Nash	315	539	854	14,918
37127010600	3	Nash	304	712	1,016	17,747
37127010700	3	Nash	185	210	395	6,900
City of Rocky Mount TOTAL			**9,472**	**12,116**	**21,588**	**377,089**
Source: US Census 2000						

General Public Non-Work Transit Demand

General public non-work demand is the last segment of non-customer transit demand. It is comprised of those non-seniors and individuals without any mobility impairments who utilize transit for activities other than work. These activities could include shopping and recreation. Subtracting the employee and seniors/mobility-impaired person transit demand from the average total non-commuter transit demand, results in an estimated general public non-work transit demand of 375,448 annual one-way transit trips in the City of Rocky Mount. The general public non-work transit demand in the City of Rocky Mount is shown in Table 8.6.

Commuter Transit Demand

The last element of the total urban transit demand in the City of Rocky Mount is commuter services. In Rocky Mount, major commuting arteries include I-95, US 64, US 301 and NC 97. The data based on which employee transit demand can be estimated is provided by the U.S. Census Bureau: place of work for workers 16 years and older. According to this data from 2000, the total number of residents working outside the City of Rocky Mount was 7,557. The relatively low density of the City of Rocky Mount outside of its downtown core area, as well as low overall density in the surrounding overall study area and, as a result of that, dispersed employment, has an impact on the feasibility of transit services in the city. If there are a lot of commuters who travel long distance to and from downtown Rocky Mount or to places of employment located along major arteries outside of Rocky Mount, the potential for commuter transit services that best serve longer trips is increased. The strong concentration of employment options in the downtown area increases viability and effectiveness of a transit system, while also reducing costs. On the other hand, it employment centers are scattered around a large area, (due to dominant land use patterns), the commuter market might be best served by a private automobile. Due to these concerns, and considering observed transit commuter mode split in similar areas, a maximum feasible mode of 3.0 percent of all commuters seems to be most appropriate for the City of Rocky Mount. Typically, each commuter makes two trips per day, approximately 250 days per year. Therefore, 7,557 commuters in the City of Rocky Mount would have made a total of about 3,778,500 commuter trips annually in the year 2000. Applying the average 3.0 percent mode

split results in an approximately 113,355 one-way commuter transit trips per year. The calculations are shown below:

- 7,557× 2 × 250 = 3,778,500 total annual one-way person trips
- 3,778,500 × 3.0% = 113,355 annual one-way trips

The commuter transit demand in the City of Rocky Mount is shown in Table 8.5.

TABLE 8.5
ESTIMATED ANNUAL COMMUTER TRANSIT DEMAND (CITY OF ROCKY MOUNT)

Census		Description	Rocky Mount Residents employed Outside City of Rocky Mount	Annual One-Way Transit Trip Demand	
Tract	Block Group			Total	Transit
37065020100	1	Edgecombe	16	8,000	240
37065020200	1	Edgecombe	118	59,000	1,770
37065020200	2	Edgecombe	82	41,000	1,230
37065020200	3	Edgecombe	113	56,500	1,695
37065020200	4	Edgecombe	128	64,000	1,920
37065020200	5	Edgecombe	153	76,500	2,295
37065020300	1	Edgecombe	249	124,500	3,735
37065020300	2	Edgecombe	223	111,500	3,345
37065020300	3	Edgecombe	104	52,000	1,560
37065020300	4	Edgecombe	214	107,000	3,210
37065020400	1	Edgecombe	124	62,000	1,860
37065020400	2	Edgecombe	187	93,500	2,805
37065020400	3	Edgecombe	81	40,500	1,215
37065020400	4	Edgecombe	108	54,000	1,620
37065020400	5	Edgecombe	156	78,000	2,340
37127010100	1	Nash	69	34,500	1,035
37127010200	1	Nash	138	69,000	2,070
37127010200	2	Nash	169	84,500	2,535
37127010200	3	Nash	180	90,000	2,700
37127010200	4	Nash	115	57,500	1,725
37127010300	1	Nash	67	33,500	1,005
37127010300	2	Nash	47	23,500	705
37127010300	3	Nash	79	39,500	1,185
37127010300	4	Nash	126	63,000	1,890
37127010300	6	Nash	256	128,000	3,840
37127010400	1	Nash	67	33,500	1,005
37127010400	2	Nash	243	121,500	3,645

37127010400	3	Nash	182	91,000	2,730
37127010502	1	Nash	255	127,500	3,825
37127010502	2	Nash	105	52,500	1,575
37127010502	3	Nash	245	122,500	3,675
37127010502	4	Nash	195	97,500	2,925
37127010502	5	Nash	126	63,000	1,890
37127010503	1	Nash	208	104,000	3,120
37127010503	2	Nash	349	174,500	5,235
37127010504	2	Nash	107	53,500	1,605
37127010504	3	Nash	616	308,000	9,240
37127010600	1	Nash	245	122,500	3,675
37127010600	2	Nash	593	296,500	8,895
37127010600	3	Nash	570	285,000	8,550
37127010700	3	Nash	149	74,500	2,235
City of Rocky Mount TOTAL			**7,557**	**3,778,500**	**113,355**
Source: US Census 2000					

URBAN TRANSIT DEMAND SUMMARY

Transit demand analysis in the City of Rocky Mount results in estimates of the total potential transit demand separated by market segments: employee demand, seniors and mobility-impaired persons demand, general public non-work demand, and commuter demand. In terms of approximate numbers, the total annual potential demand for one-way transit passenger trips is calculated to be at 1,009,639 in the City of Rocky Mount. The seniors and mobility-impaired persons and general public non-work demand both account for nearly 75 percent of the estimated transit trips. This finding suggests that a very large proportion of residents of the City of Rocky Mount are captive riders who depend on transit in their daily lives. However, the data also suggests that yet another large percentage of the City of Rocky Mount's residents would be willing to take transit for recreational purposes and to go shopping if it was made available. The employee transit demand comprises around 14 percent of the total transit demand in the city – this statistics along with the final 11 percent of the commuter transit demand suggests that private automobile is still the most preferred and dominant form of getting to work for the City of Rocky Mount residents.

It should be noted that the calculated demand represents a maximum potential under optimal conditions suitable for transit. In reality, although the estimates are a useful indicator of transit demand, the level of transit service in the City of Rocky Mount cannot reach these levels – the need for transit is based on the time and cost of using transit as compared to other modes. Table 8.6 and Figure 8.1 summarize transit demand in the City of Rocky Mount.

It is interesting to note that the existing TRT fixed bus routes in the City of Rocky Mount cover the areas with the highest estimated urban transit demand very well. As shown in Figure 8.2, the areas with the most pronounced urban transit demand are located around and nearby its downtown. Notably, these areas include:

- East Rocky Mount neighborhoods located around North Raleigh Street and in-between US 64 Business and US 64 (currently served by Tar River Transit's Meadowbrook and Hillsdale bus routes
- Southeast Rocky Mount neighborhoods around Eastern Avenue, Hill Street and Cokey Road (currently served by Tar River Transit's Meadowbrook and Oakwood bus routes)
- Southwest Rocky Mount neighborhoods located around South Church Street and US Business 64 / Raleigh Road collector spines (currently served by Tar River Transit's South Rocky Mount and Ravenwood bus routes)
- West Rocky Mount neighborhoods located around and in-between Falls Road and Sunset Avenue collector spines (currently served by Tar River Transit's Golden East and Sunset bus routes

TABLE 8.6
ESTIMATED ANNUAL URBAN TRANSIT TRIP DEMAND SUMMARY (CITY OF ROCKY MOUNT)

Census			Total Non-Commuter Demand			Average Non-Customer Demand by Segment				
Tract	Block Group	County	Mode Split	Vehicle Availability	Average	Employee	Seniors and Mobility-Impaired	General Public Non-work	Commuter	Total
37065020100	1	Edgecombe	2,946	18,601	10,774	400	3,669	6,705	240	11,014
37065020200	1	Edgecombe	10,871	48,063	29,467	3,260	10,027	16,180	1,770	31,237
37065020200	2	Edgecombe	8,452	38,053	23,253	1,180	6,219	15,854	1,230	24,483
37065020200	3	Edgecombe	8,122	26,135	17,129	1,620	6,725	8,784	1,695	18,824
37065020200	4	Edgecombe	13,638	47,920	30,779	3,290	11,285	16,204	1,920	32,699
37065020200	5	Edgecombe	12,728	31,364	22,046	4,250	9,450	8,346	2,295	24,341
37065020300	1	Edgecombe	15,539	49,482	32,511	4,300	10,568	17,643	3,735	36,246
37065020300	2	Edgecombe	13,772	57,331	35,552	2,690	6,376	26,486	3,345	38,897
37065020300	3	Edgecombe	8,033	14,352	11,193	3,600	4,856	2,737	1,560	12,753
37065020300	4	Edgecombe	13,433	31,069	22,251	2,710	8,682	10,859	3,210	25,461
37065020400	1	Edgecombe	12,540	63,111	37,826	2,890	11,057	23,879	1,860	39,686
37065020400	2	Edgecombe	7,239	39,294	23,267	980	7,739	14,548	2,805	26,072
37065020400	3	Edgecombe	8,827	53,034	30,931	900	5,258	24,773	1,215	32,146
37065020400	4	Edgecombe	6,462	19,041	12,752	880	5,905	5,967	1,620	14,372
37065020400	5	Edgecombe	10,541	14,202	12,372	3,300	8,647	425	2,340	14,712
37127010100	1	Nash	3,687	9,988	6,838	940	2,935	2,963	1,035	7,873
37127010200	1	Nash	11,844	49,917	30,881	2,250	11,459	17,172	2,070	32,951
37127010200	2	Nash	11,790	42,241	27,016	2,080	9,940	14,996	2,535	29,551
37127010200	3	Nash	15,182	72,284	43,733	3,020	10,638	30,075	2,700	46,433

37127010200	4	Nash	9,202	32,912	21,057	2,740	11,459	6,858	1,725	22,782
37127010300	1	Nash	9,193	21,812	15,503	3,400	11,529	574	1,005	16,508
37127010300	2	Nash	6,373	5,623	5,998	2,730	5,852	-2,584	705	6,703
37127010300	3	Nash	8,854	39,558	24,206	2,420	8,298	13,488	1,185	25,391
37127010300	4	Nash	8,372	17,695	13,034	2,720	6,079	4,235	1,890	14,924
37127010300	6	Nash	21,697	30,051	25,874	5,990	15,459	4,425	3,840	29,714
37127010400	1	Nash	5,409	13,826	9,618	1,430	5,939	2,249	1,005	10,623
37127010400	2	Nash	15,235	64,193	39,714	4,010	12,123	23,581	3,645	43,359
37127010400	3	Nash	12,192	34,017	23,105	4,060	11,337	7,708	2,730	25,835
37127010502	1	Nash	16,164	45,068	30,616	5,850	16,140	8,626	3,825	34,441
37127010502	2	Nash	6,534	20,574	13,554	1,740	8,070	3,744	1,575	15,129
37127010502	3	Nash	7,953	14,941	11,447	2,540	4,280	4,627	3,675	15,122
37127010502	4	Nash	14,896	13,226	14,061	4,800	16,088	-6,827	2,925	16,986
37127010502	5	Nash	10,568	9,458	10,013	3,830	9,415	-3,232	1,890	11,903
37127010503	1	Nash	7,605	6,453	7,029	1,930	5,608	-509	3,120	10,149
37127010503	2	Nash	18,475	18,167	18,321	7,040	11,931	-650	5,235	23,556
37127010504	2	Nash	9,738	18,866	14,302	3,010	8,647	2,645	1,605	15,907
37127010504	3	Nash	31,515	30,202	30,859	12,020	12,734	6,105	9,240	40,099
37127010600	1	Nash	11,264	25,615	18,440	3,620	5,118	9,702	3,675	22,115
37127010600	2	Nash	29,034	38,189	33,612	10,630	14,918	8,064	8,895	42,507
37127010600	3	Nash	34,389	53,916	44,153	12,290	17,747	14,116	8,550	52,703
37127010700	3	Nash	9,354	13,061	11,208	390	6,900	3,918	2,235	13,443
Total Rocky Mount			**499,662**	**1,292,905**	**896,284**	**143,730**	**377,089**	**375,448**	**113,355**	**1,009,639**

Source: US Census 2000

Figure 8.1 Estimated Annual Urban Transit Trip Demand Summary (City of Rocky Mount)

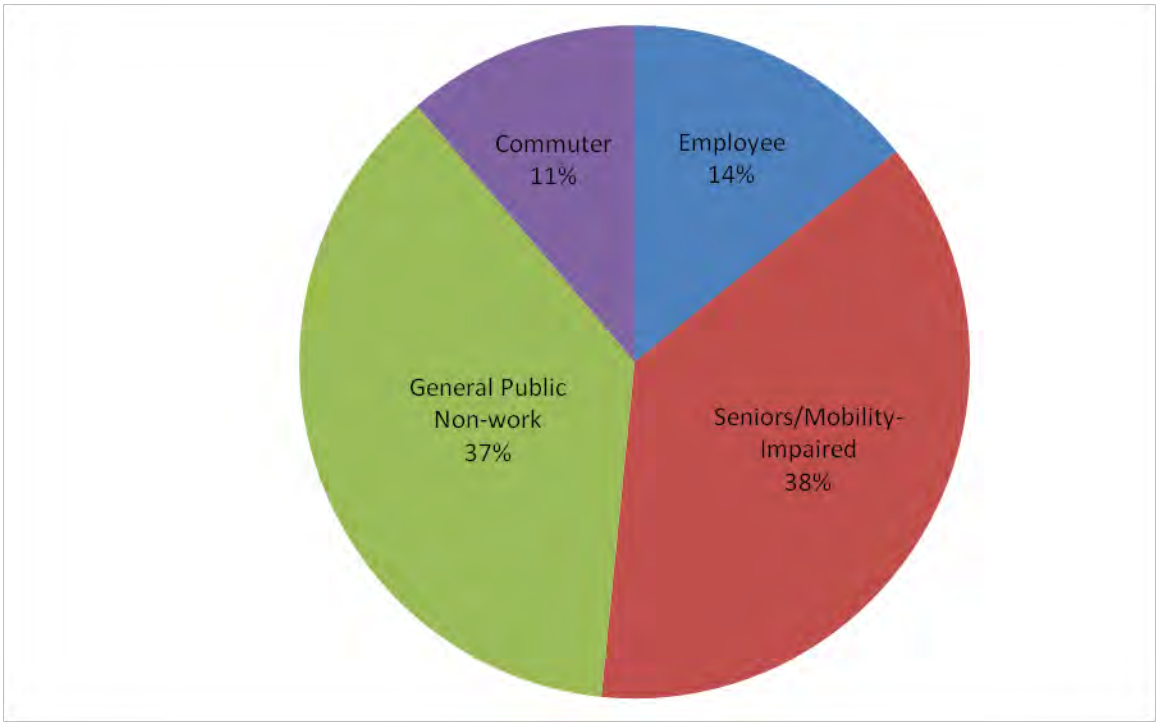
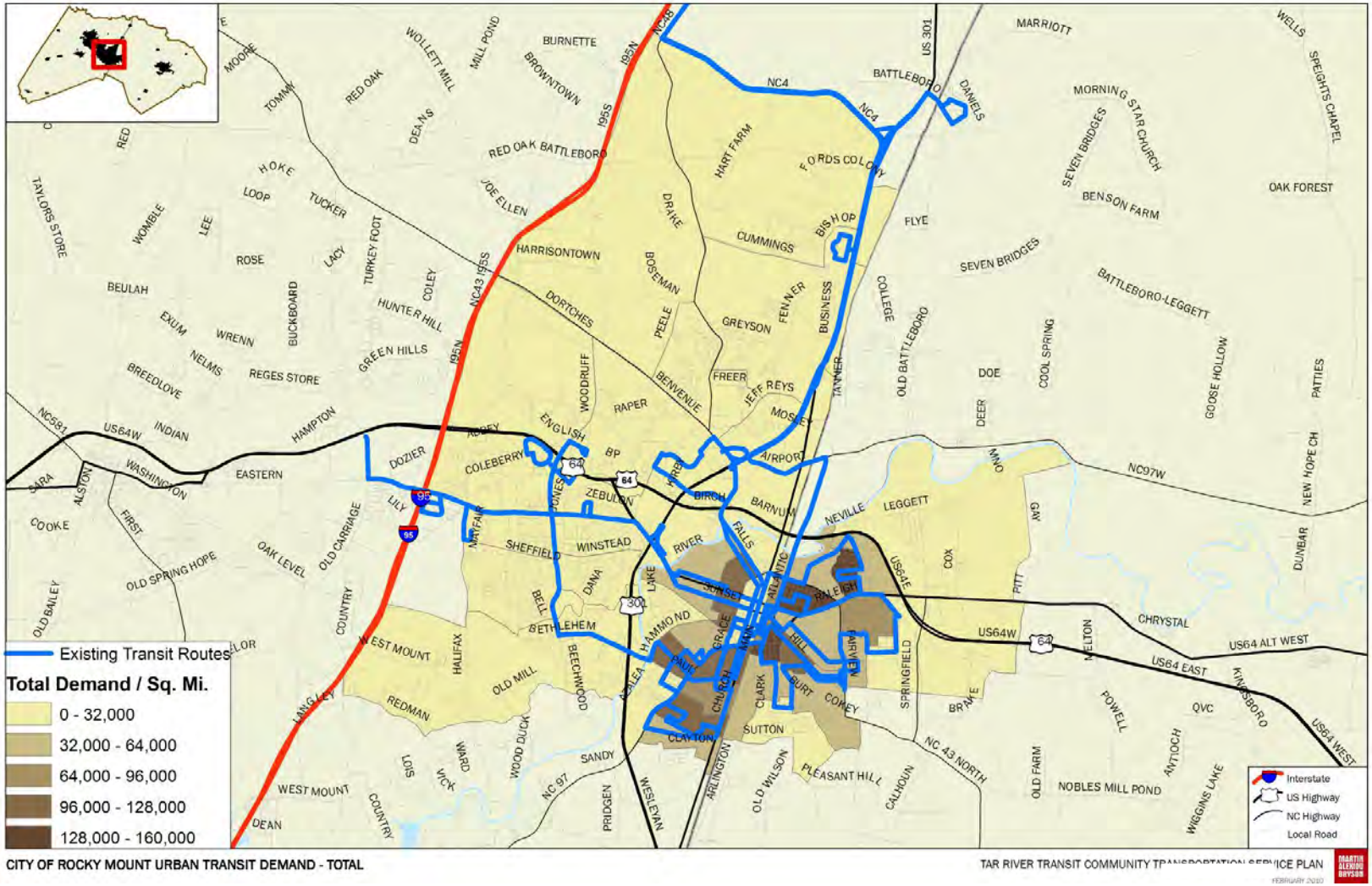


Figure 8.2 Estimated Annual Urban Transit Trip Demand and Existing TRT Routes (City of Rocky Mount)



9. RURAL TRANSIT DEMAND ANALYSIS

Two existing methods were used in order to estimate the potential rural transit demand:

- Rural Transit Demand Estimation Model
- Greatest Transit Needs Index Model

Two methods were used in order to confirm the results of each – while the methodology varies, the expected results should be fairly similar.

RURAL TRANSIT DEMAND ESTIMATION MODEL

Methodology

The Rural Transit Demand Estimation Model was first proposed in the *Transit Cooperative Research Program (TCRP) Project A-3: Rural Transit Demand Estimation Techniques*. This study represents the first substantial research into demand for transit service in rural areas and small communities since the early 1980s (this methodology was updated in 1995). The TCRP study documents present a series of formulas relating the number of participants in various types of programs, such as Medicaid, in 185 transit agencies across the country. This analytical technique uses a logit model approach to the estimation of transit demand. This model incorporates an exponential equation, which relates the quantity of service and the demographics of the area. Rural transit need estimates presented here are based upon demographics presented in Section 4 of this Plan.

This analysis procedure considers transit demand in two major categories:

- *Program demand* generated by transit ridership to and from specific social service programs
- *Non-program demand* generated by other mobility needs of elderly persons, persons with disabilities, and low-income population. Examples of non-program trips may include shopping, employment, and medical trips.The recommended methodology for estimating annual non-program related rural passenger transportation demand is estimated as a function of the following:
    - The size of the three population groups most likely to use a rural passenger transportation service
        - Elderly (persons aged 60 and over)
        - Persons with disabilities (persons aged 16 to 64 with mobility limitations)
        - Below poverty population (persons aged 64 or under, residing in households having incomes below the poverty level)
    - The size of the service area

- The amount of service (measured in annual vehicle-miles) available to each of the population groups

The Study Area is the service area unit for which these relationships were developed. In this case, it includes both Edgecombe and Nash Counties, excluding the City of Rocky Mount. To the extent the individuals not belonging to one of the above population segments made trips on services analyzed in developing these methodologies, the trip rates used for these market segments are slightly higher than they would be otherwise. As a result, the non-program estimates include "general public" demand. It should be noted that Medicaid trips are considered to be non-program related since the time of travel and destination are at the rider's discretion.

The procedure that was utilized to estimate rural transit demand in the Study Area included the following steps (as shown in

TABLE 9.2 ESTIMATED ANNUAL NON-PROGRAM RELATED RURAL TRANSIT DEMAND (STUDY AREA)

):

1. Calculate the number of persons in the planning area in each of the three population groups (utilizing available U.S. Census data from 2000)
   a. Seniors: 57,910
   b. Persons with disabilities: 50,393
   c. Below poverty population: 38,733
2. Calculate the size of the service area in square miles (utilizing available U.S. Census data from 2000) – 991 sq. miles
3. Calculate the annual vehicle-miles of service available to persons in each population group. Based on most recent data from Tar River Transit, 1,112,829 service miles available to persons in each population group was used – this number represents the actual rural demand response vehicle service in the Study Area in FY2009, which is very close to the average rural demand service miles operated by Tar River Transit in the last five Fiscal Years 2005-09 (1,138,396). The "availability" of service to a population group does not necessarily imply that the service is restricted to members of that group. In some cases, the service may be restricted to a specific group, though public transportation is generally available to all population groups. The overall purpose of calculating rural transit demand in the Study Area is to determine whether the current level of rural demand responsive Tar River Transit service is adequate.
4. Estimate a "service factor" for each group based on the annual vehicle-miles of service per square mile available to each group:
   a. Estimate Vehicle-Miles available per square mile in the Study Area: 1,112,829 available service miles/991 sq. miles= 1,123
   b. Apply predetermined factors to determine specific service factors for each population group based on available Vehicle-Miles of service:
      - Seniors service factor: [(1,123 * 2.682) + 376] / 1,000,000 = 0.003388
      - Mobility-impaired service factor: [(1,123 * 1.570)+1010] / 1,000,000 = 0.002773
      - Below poverty population service factor: [(1,123 * 2.45) + 525] / 1,000,000 = 0.003276
      - Multiply the population in each group by the appropriate trip factor (provided by TCRP, based on the Study Area's population characteristics assumed to be 1,200) and service factors (from Step 4b above) to yield the demand estimate for each group. The formula used to estimate this demand is shown in

- Figure 9.1. The following computations were used for the three population segments:

  - Seniors rural transit demand = 1,200 * 0.003388 (population group specific service factor) * 57,910 (this specific population)
  - Mobility-impaired rural transit demand: 1,200 * 0.002773 (population group specific service factor) * 50,393 (this specific population)
  - Below poverty population transit demand: 1,200 * 0.003276 (population group specific service factor) * 38,733 (this specific population)

Table 9.1 summarizes rural transit demand input data while

TABLE 9.2 ESTIMATED ANNUAL NON-PROGRAM RELATED RURAL TRANSIT DEMAND (STUDY AREA)

summarizes the results. The total rural transit demand in the Study Area excluding the City of Rocky Mount is approximately 147,035 annual one-way transit trips (or 577 one-way transit trips per day, assuming 255 service days per year). The breakdown by user group is as follows:

- Seniors comprise 39.4 percent of the total rural demand responsive demand
- Mobility-impaired persons comprise 34 percent of the total rural demand responsive demand
- Below-poverty population comprise 26 percent of the total rural demand responsive demand

The total estimated rural transit demand is about 39 percent higher than the most recent available number of rural demand responsive transit trips provided by the Tar River Transit (89,962) in FY2009. Thus, there exists an opportunity for service expansion today. As shown in

Figure 9.2, the areas with the most demand for transit services in the Study Area (excluding the City of Rocky Mount) include Tarboro, Nashville, Pinetops, and Sharpsburg.

Figure 9.1 Methodology for Estimating Annual Non-program Related Rural Transit Demand (Study Area)

$$D = R_e E\left(\frac{1}{1 + k_e e^{-U_e}}\right) + R_m M\left(\frac{1}{1 + k_m e^{-U_m}}\right) + R_p P\left(\frac{1}{1 + k_p e^{-U_p}}\right)$$

where:

D = annual demand for Non-Program Related passenger transportation. (One-Way Trips per Year)

$R_e = 1{,}200$

$R_m = 1{,}200$

$R_p = 1{,}200$

E = number of persons age sixty or over.

M = number of mobility limited persons age sixteen to sixty-four.

P = number of persons, age sixty-four or less, in families with incomes below the poverty level. The definition of the poverty level is that used for the 1990 U.S. Census.

$k_e = e^{6.38}$

$k_m = e^{6.41}$

$k_p = e^{6.63}$

$$U_e = 0.000510 \times \frac{\text{Annual Vehicle-Miles Available to Elderly Market}}{\text{Area of the County}}$$

$$U_m = 0.000400 \times \frac{\text{Annual Vehicle-Miles Available to Mobility Limited Market}}{\text{Area of the County}}$$

$$U_p = 0.000490 \times \frac{\text{Annual Vehicle-Miles Available to Low-Income Market}}{\text{Area of the County}}$$

TABLE 9.1
ESTIMATED ANNUAL RURAL TRANSIT TRIP DEMAND INPUT DATA (CITY OF ROCKY MOUNT)

County	Census Tract	Block Group	Population	Population Density	Seniors (60+)	Population (64 and over)	Mobility-Impaired (age 5-64)	Below Poverty Population Density	Population excluding Seniors (64 and over)	Below Poverty Population (64 or under)
Edgecombe	37065020200	6	991	146.8	202	142	178	128	849	110
Edgecombe	37065020600	1	2,537	166.7	240	175	496	491	2,362	457
Edgecombe	37065020600	2	1,407	36.6	202	143	241	177	1,264	159
Edgecombe	37065020700	1	905	42.1	166	129	170	292	776	250
Edgecombe	37065020700	2	1,272	20.0	229	174	182	162	1,098	140
Edgecombe	37065020800	1	1,095	27.5	199	142	223	176	953	153
Edgecombe	37065020800	2	847	13.1	131	91	149	181	756	162
Edgecombe	37065020800	3	1,786	58.1	263	199	385	254	1,587	226
Edgecombe	37065020900	1	198	618.8	43	31	49	25	167	21
Edgecombe	37065020900	2	561	167.5	72	46	166	142	515	130
Edgecombe	37065020900	3	952	293.8	127	85	243	147	867	134
Edgecombe	37065021000	1	749	1,528.6	289	262	117	61	487	40
Edgecombe	37065021000	2	373	1,554.2	102	79	40	116	294	91
Edgecombe	37065021000	3	728	2,912.0	138	108	175	38	620	32
Edgecombe	37065021000	4	801	910.2	162	110	108	222	691	192
Edgecombe	37065021000	5	476	241.6	101	80	122	134	396	111
Edgecombe	37065021100	1	2,451	260.7	276	192	468	550	2,259	507
Edgecombe	37065021100	2	715	715.0	116	84	129	124	631	109
Edgecombe	37065021100	3	1,459	264.8	246	176	268	173	1,283	152
Edgecombe	37065021200	1	1,436	533.8	234	154	258	196	1,282	175

Edgecombe	37065021200	2	1,362	2,308.5	606	533	150	122	829	74
Edgecombe	37065021200	3	961	2,184.1	231	180	137	86	781	70
Edgecombe	37065021200	4	1,120	329.4	218	165	81	65	955	55
Edgecombe	37065021300	1	1,070	62.9	219	158	201	87	912	74
Edgecombe	37065021300	2	1,918	72.6	221	158	322	303	1,760	278
Edgecombe	37065021300	3	1,423	61.8	164	100	266	127	1,323	118
Edgecombe	37065021400	1	1,494	111.7	216	133	156	214	1,361	195
Edgecombe	37065021400	2	1,878	64.9	209	151	537	101	1,727	93
Edgecombe	37065021500	1	918	212.0	201	141	151	64	777	54
Edgecombe	37065021500	2	950	508.0	182	153	151	263	797	221
Edgecombe	37065021500	3	1,064	58.1	189	132	187	116	932	102
Edgecombe	37065021600	1	856	40.3	139	108	176	121	748	106
Edgecombe	37065021600	2	885	128.6	219	160	99	47	725	39
Edgecombe	37065021600	3	810	45.0	146	103	193	94	707	82
Edgecombe County Total			**38,448**	**77.8**	**6,698**	**4,977**	**6,974**	**5,599**	**33,471**	**4,912**
Nash	37127010200	5	1,020	361.7	186	133	237	118	887	103
Nash	37127010300	5	842	262.3	190	131	194	76	711	64
Nash	37127010504	1	520	329.1	83	66	36	131	454	114
Nash	37127010700	1	1,005	67.1	192	154	184	167	851	141
Nash	37127010700	2	711	41.7	112	75	121	87	636	78
Nash	37127010800	1	1,386	48.9	193	131	187	203	1,255	184
Nash	37127010800	2	784	63.9	128	96	99	92	688	81
Nash	37127010800	3	1,642	138.0	212	152	171	112	1,490	102
Nash	37127010800	4	2,256	175.4	281	182	191	107	2,074	98
Nash	37127010900	1	1,151	27.4	147	103	240	99	1,048	90
Nash	37127010900	2	962	51.0	147	107	166	176	855	156

Nash	37127010900	3	1,519	51.2	215	151	271	194	1,368	175
Nash	37127010900	4	1,661	95.4	211	143	316	152	1,518	139
Nash	37127011000	1	1,482	90.7	272	207	251	205	1,275	176
Nash	37127011000	2	784	104.5	161	128	149	132	656	110
Nash	37127011000	3	1,897	112.5	367	280	324	355	1,617	303
Nash	37127011100	1	1,645	212.3	200	157	125	50	1,488	45
Nash	37127011100	2	656	55.2	134	100	107	34	556	29
Nash	37127011100	3	1,710	95.6	193	150	126	157	1,560	143
Nash	37127011100	4	1,010	385.5	146	106	149	73	904	65
Nash	37127011100	5	1,228	772.3	405	346	214	88	882	63
Nash	37127011100	6	2,170	691.1	350	262	401	258	1,908	227
Nash	37127011100	7	1,637	199.4	214	157	303	136	1,480	123
Nash	37127011200	1	958	143.2	159	103	179	82	855	73
Nash	37127011200	2	2,758	201.0	348	243	472	410	2,515	374
Nash	37127011200	3	1,552	98.7	300	209	159	50	1,343	43
Nash	37127011300	1	1,917	77.2	281	201	268	466	1,716	417
Nash	37127011300	2	1,119	64.5	160	114	318	155	1,005	139
Nash	37127011300	3	1,112	87.4	134	87	167	235	1,025	217
Nash	37127011400	1	1,824	85.4	246	165	292	250	1,659	227
Nash	37127011400	2	1,817	178.5	305	226	352	181	1,591	158
Nash	37127011500	1	1,209	73.1	178	123	412	94	1,086	84
Nash	37127011500	2	1,132	70.2	164	112	244	47	1,020	42
Nash	37127011500	3	1,129	78.7	180	134	176	60	995	53
Nash	37127011500	4	1,303	120.3	200	138	299	109	1,165	97
Nash	37127011500	5	1,088	112.2	153	121	270	229	967	204
Nash County Total			**48,596**	**97.8**	**7,547**	**5,493**	**8,170**	**5,570**	**43,103**	**4,940**

Study Area Total	87,044	87.8	14,245	10,470	15,144	11,169	72,799	9,341
Source: US Census 2000								

TABLE 9.2 ESTIMATED ANNUAL NON-PROGRAM RELATED RURAL TRANSIT DEMAND (STUDY AREA)

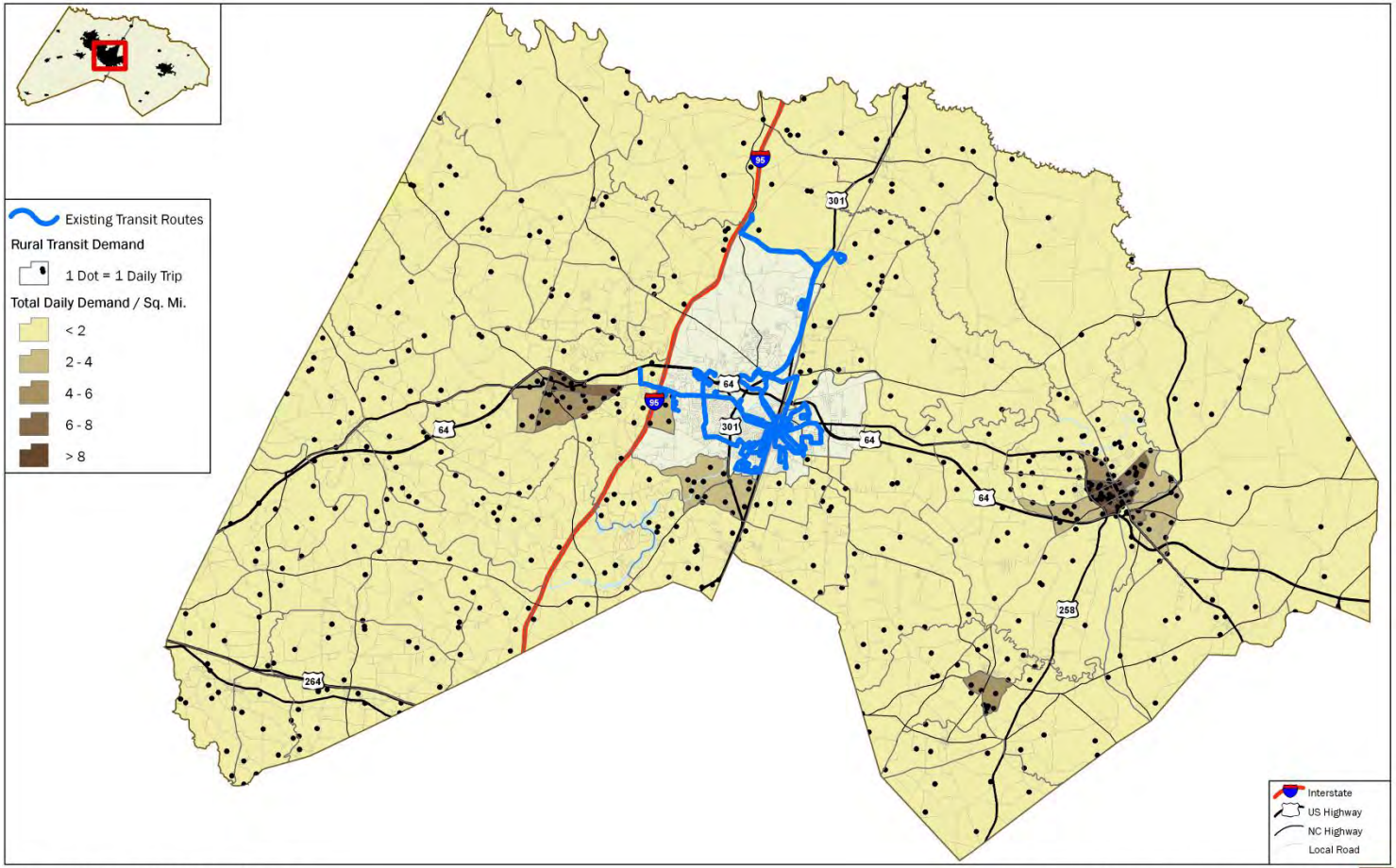
County	Census Tract	Block Group	Land Area (sq. mi.)	Seniors	Mobility-Impaired	Below Poverty	Total Annual Demand	Estimated Daily Transit Demand		Daily Demand Density (Daily Trips/sq. mile)
								#	%	
Edgecombe	37065020200	6	6.8	821	592	431	**1,845**	7	1.3%	1.1
Edgecombe	37065020600	1	15.2	976	1,650	1,797	**4,423**	17	3.0%	1.1
Edgecombe	37065020600	2	38.4	821	802	625	**2,248**	9	1.5%	0.2
Edgecombe	37065020700	1	21.5	675	566	984	**2,225**	9	1.5%	0.4
Edgecombe	37065020700	2	63.6	931	606	550	**2,086**	8	1.4%	0.1
Edgecombe	37065020800	1	39.8	809	742	602	**2,153**	8	1.5%	0.2
Edgecombe	37065020800	2	64.9	533	496	635	**1,663**	7	1.1%	0.1
Edgecombe	37065020800	3	30.8	1,069	1,281	887	**3,238**	13	2.2%	0.4
Edgecombe	37065020900	1	0.3	175	163	83	**421**	2	0.3%	5.2
Edgecombe	37065020900	2	3.4	293	552	512	**1,358**	5	0.9%	1.6
Edgecombe	37065020900	3	3.2	516	809	526	**1,851**	7	1.3%	2.2
Edgecombe	37065021000	1	0.5	1,175	389	156	**1,720**	7	1.2%	13.8
Edgecombe	37065021000	2	0.2	415	133	359	**907**	4	0.6%	14.8
Edgecombe	37065021000	3	0.3	561	582	127	**1,271**	5	0.9%	19.9
Edgecombe	37065021000	4	0.9	659	359	753	**1,771**	7	1.2%	7.9
Edgecombe	37065021000	5	2.0	411	406	438	**1,255**	5	0.9%	2.5
Edgecombe	37065021100	1	9.4	1,122	1,557	1,993	**4,672**	18	3.2%	1.9
Edgecombe	37065021100	2	1.0	472	429	430	**1,331**	5	0.9%	5.2
Edgecombe	37065021100	3	5.5	1,000	892	598	**2,490**	10	1.7%	1.8
Edgecombe	37065021200	1	2.7	951	859	688	**2,498**	10	1.7%	3.6
Edgecombe	37065021200	2	0.6	2,464	499	292	**3,255**	13	2.2%	21.6

Edgecombe	37065021200	3	0.4	939	456	275	**1,670**	7	1.1%	14.9
Edgecombe	37065021200	4	3.4	886	270	218	**1,374**	5	0.9%	1.6
Edgecombe	37065021300	1	17.0	890	669	292	**1,851**	7	1.3%	0.4
Edgecombe	37065021300	2	26.4	898	1,071	1,093	**3,063**	12	2.1%	0.5
Edgecombe	37065021300	3	23.0	667	885	464	**2,016**	8	1.4%	0.3
Edgecombe	37065021400	1	13.4	878	519	766	**2,164**	8	1.5%	0.6
Edgecombe	37065021400	2	29.0	850	1,787	365	**3,002**	12	2.0%	0.4
Edgecombe	37065021500	1	4.3	817	502	213	**1,533**	6	1.0%	1.4
Edgecombe	37065021500	2	1.9	740	502	867	**2,110**	8	1.4%	4.4
Edgecombe	37065021500	3	18.3	768	622	399	**1,790**	7	1.2%	0.4
Edgecombe	37065021600	1	21.3	565	586	416	**1,566**	6	1.1%	0.3
Edgecombe	37065021600	2	6.9	890	329	151	**1,371**	5	0.9%	0.8
Edgecombe	37065021600	3	18.0	594	642	323	**1,558**	6	1.1%	0.3
Edgecombe County Total			**494.2**	**27,229**	**23,207**	**19,311**	**69,747**	**274**	**47.4%**	**0.6**
Nash	37127010200	5	2.8	756	789	403	**1,948**	8	1.3%	2.7
Nash	37127010300	5	3.2	772	646	252	**1,670**	7	1.1%	2.0
Nash	37127010504	1	1.6	337	120	450	**907**	4	0.6%	2.3
Nash	37127010700	1	15.0	781	612	556	**1,949**	8	1.3%	0.5
Nash	37127010700	2	17.0	455	403	306	**1,164**	5	0.8%	0.3
Nash	37127010800	1	28.3	785	622	723	**2,130**	8	1.4%	0.3
Nash	37127010800	2	12.3	520	329	317	**1,167**	5	0.8%	0.4
Nash	37127010800	3	11.9	862	569	400	**1,830**	7	1.2%	0.6
Nash	37127010800	4	12.9	1,142	636	387	**2,165**	8	1.5%	0.7
Nash	37127010900	1	42.0	598	799	354	**1,751**	7	1.2%	0.2
Nash	37127010900	2	18.9	598	552	615	**1,765**	7	1.2%	0.4
Nash	37127010900	3	29.6	874	902	687	**2,463**	10	1.7%	0.3

Nash	37127010900	4	17.4	858	1,052	546	**2,455**	10	1.7%	0.6
Nash	37127011000	1	16.3	1,106	835	693	**2,634**	10	1.8%	0.6
Nash	37127011000	2	7.5	655	496	434	**1,585**	6	1.1%	0.8
Nash	37127011000	3	16.9	1,492	1,078	1,190	**3,760**	15	2.6%	0.9
Nash	37127011100	1	7.8	813	416	178	**1,407**	6	1.0%	0.7
Nash	37127011100	2	11.9	545	356	113	**1,014**	4	0.7%	0.3
Nash	37127011100	3	17.9	785	419	563	**1,767**	7	1.2%	0.4
Nash	37127011100	4	2.6	594	496	257	**1,346**	5	0.9%	2.0
Nash	37127011100	5	1.6	1,646	712	248	**2,607**	10	1.8%	6.4
Nash	37127011100	6	3.1	1,423	1,334	892	**3,649**	14	2.5%	4.6
Nash	37127011100	7	8.2	870	1,008	483	**2,362**	9	1.6%	1.1
Nash	37127011200	1	6.7	646	596	288	**1,530**	6	1.0%	0.9
Nash	37127011200	2	13.7	1,415	1,571	1,470	**4,455**	17	3.0%	1.3
Nash	37127011200	3	15.7	1,220	529	170	**1,919**	8	1.3%	0.5
Nash	37127011300	1	24.8	1,142	892	1,640	**3,674**	14	2.5%	0.6
Nash	37127011300	2	17.4	650	1,058	547	**2,256**	9	1.5%	0.5
Nash	37127011300	3	12.7	545	556	852	**1,952**	8	1.3%	0.6
Nash	37127011400	1	21.4	1,000	972	894	**2,866**	11	1.9%	0.5
Nash	37127011400	2	10.2	1,240	1,171	623	**3,034**	12	2.1%	1.2
Nash	37127011500	1	16.6	724	1,371	332	**2,427**	10	1.7%	0.6
Nash	37127011500	2	16.1	667	812	166	**1,645**	6	1.1%	0.4
Nash	37127011500	3	14.3	732	586	208	**1,525**	6	1.0%	0.4
Nash	37127011500	4	10.8	813	995	383	**2,191**	9	1.5%	0.8
Nash	37127011500	5	9.7	622	898	800	**2,321**	9	1.6%	0.9
Nash County Total			**496.8**	**30,680**	**27,187**	**19,421**	**77,288**	**303**	**52.6%**	**0.6**
Study Area Total			**991.0**	**57,910**	**50,393**	**38,733**	**147,035**	**577**	**100%**	**148.4**

% of Study Area	39.4%	34.3%	26.3%				
Vehicle-Miles Available	1,123	1,123	1,123				
Service Factor	0.00338771	0.00277301	0.00327619				
Source: US Census 2000							

Figure 9.2 Estimated Annual Non-program Related Rural Transit Demand (Study Area)



GREATEST TRANSIT NEEDS INDEX MODEL

Methodology

The second methodology used to estimate rural transit demand in the Study Area is the 'Greatest Transit Need' (GTN). It was used to compare, contrast, and augment transit demand results estimated by using the previously described Rural Demand Estimation Model. Notably, the GTN was utilized in previous studies including the NE Mississippi Coordinated Transit Service study prepared by The Community Transportation Association of America (CTAA), Three Rivers Planning and Development District, and the Mississippi Department of Transportation contracted with LSC Transportation Consultants, Inc. The demographics data included in Section 4 were used to calculate the GTN. The GTN can be defined as those areas within the Study Area with the highest density of the following groups:

- Zero-vehicle households
- Seniors
- Mobility-impaired population
- Below-poverty population

Using these categories, a "transit need index" to determine the greatest transit need was developed . The procedure that was utilized to estimate the GTN in the Study Area included the following steps:

1. Estimate population density of US Census block groups within each user group (zero-vehicle households, seniors, mobility-impaired and below-poverty)
2. Place results in numerical order and divide into six segments. Six segments were chosen in order to reflect a reasonable range that warranted equal representation.
3. Assign numerical scores to each segment. The US Census block groups in segments. The lowest densities and therefore the lowest transit need were given a score of 1. The block groups in the segment with the next lowest densities were given a score of 2, and so on. The block groups in the segment with the highest densities and therefore highest transit need were given a score of 6. This scoring was completed for each of the categories (zero-vehicle households, seniors, mobility-impaired population, and below-poverty population).
4. After each block group was scored for the four categories, add all four scores together in order to calculate an overall score.

Results

Table 9.3 presents the ranked scores for each US Census block group in the Study Area. The scores ranged from four (lowest need for transit) to 24 (highest need for transit). Table 9.4 shows the calculated GTN for each US Census block group in the Study Area ranked from the block groups with the greatest transit needs to block groups with the lowest transit needs.

Figure 9.3 presents the Study Area's greatest transit need index spatially. Eighteen block groups were determined to have the greatest transit needs based on the zero-vehicle households, seniors, mobility-impaired population, and below poverty population. As shown in Figure 9.3, the greatest transit need is in the Study Area is concentrated in Tarboro, followed by Nashville and Pinetops. The areas nearby the City of Rocky Mount limits have some of the highest GTN scores as well. This is not surprising considering that population densities are generally much higher in incorporated areas and/or areas in proximity to larger cities. However, it is interesting to note that much smaller areas such as Spring Hope, Middlesex, and Bailey (all located in Nash County) also have very high GTN scores, although not as high as the previously mentioned jurisdictions. Those 'second tier' GTN US Census block groups could still be considered a high priority in terms of rural transit need. The results obtained when estimating rural transit demand using the GTN scores closely match those obtained using the first method of estimating rural transit demand described in the previous section above.

TABLE 9.3 ESTIMATED GREATEST TRANSIT INDEX RURAL TRANSIT DEMAND (STUDY AREA)

County: Edgecombe: Census Tract (3706502X XXX) Nash: Census Tract (3712701X XXX)	Block Group	Land Area (sq. mi.)	Zero Car Households			Seniors (60 and over)			Mobility-Impaired (age 5 to 64)			Below Poverty Population Density			Overall Score (4-24)
			#	Density (hh/sq. m)	Rank	#	Density (persons/sq/m)	Rank	#	Density (persons/ sq/m)	Rank	#	Density (persons/ sq/m)	Rank	
0200	6	6.8	9	1.33	2	202	29.93	5	178	26.37	4	128	18.96	4	15
0600	1	15.2	171	11.24	5	240	15.77	3	496	32.59	5	491	32.26	5	18
0600	2	38.4	28	0.73	1	202	5.26	1	241	6.27	1	177	4.61	1	4
0700	1	21.5	62	2.88	4	166	7.71	2	170	7.90	1	292	13.57	4	11
0700	2	63.6	88	1.38	2	229	3.60	1	182	2.86	1	162	2.55	1	5
0800	1	39.8	40	1.00	1	199	5.00	1	223	5.60	1	176	4.42	1	4
0800	2	64.9	39	0.60	1	131	2.02	1	149	2.30	1	181	2.79	1	4
0800	3	30.8	88	2.86	4	263	8.55	2	385	12.52	3	254	8.26	3	12
0900	1	0.3	21	65.63	6	43	134.38	6	49	153.13	6	25	78.13	6	24
0900	2	3.4	20	5.97	5	72	21.49	4	166	49.55	5	142	42.39	5	19
0900	3	3.2	40	12.35	5	127	39.20	5	243	75.00	6	147	45.37	5	21
1000	1	0.5	90	183.67	6	289	589.80	6	117	238.78	6	61	124.49	6	24
1000	2	0.2	19	79.17	6	102	425.00	6	40	166.67	6	116	483.33	6	24
1000	3	0.3	16	64.00	6	138	552.00	6	175	700.00	6	38	152.00	6	24
1000	4	0.9	68	77.27	6	162	184.09	6	108	122.73	6	222	252.27	6	24
1000	5	2.0	60	30.46	6	101	51.27	5	122	61.93	6	134	68.02	6	23
1100	1	9.4	128	13.62	6	276	29.36	5	468	49.79	6	550	58.51	6	23
1100	2	1.0	56	56.00	6	116	116.00	6	129	129.00	6	124	124.00	6	24

1100	3	5.5	95	17.24	6	246	44.65	5	268	48.64	5	173	31.40	5	21
1200	1	2.7	59	21.93	6	234	86.99	6	258	95.91	6	196	72.86	6	24
1200	2	0.6	36	61.02	6	606	1,027.12	6	150	254.24	6	122	206.78	6	24
1200	3	0.4	50	113.64	6	231	525.00	6	137	311.36	6	86	195.45	6	24
1200	4	3.4	27	7.94	5	218	64.12	6	81	23.82	4	65	19.12	5	20
1300	1	17.0	26	1.53	2	219	12.87	3	201	11.81	2	87	5.11	1	8
1300	2	26.4	54	2.04	3	221	8.37	2	322	12.19	2	303	11.47	3	10
1300	3	23.0	23	1.00	1	164	7.12	1	266	11.56	2	127	5.52	2	6
1400	1	13.4	22	1.64	3	216	16.14	3	156	11.66	2	214	15.99	4	12
1400	2	29.0	38	1.31	2	209	7.22	1	537	18.55	4	101	3.49	1	8
1500	1	4.3	39	9.01	5	201	46.42	5	151	34.87	5	64	14.78	4	19
1500	2	1.9	57	30.48	6	182	97.33	6	151	80.75	6	263	140.64	6	24
1500	3	18.3	19	1.04	1	189	10.32	2	187	10.21	2	116	6.33	2	7
1600	1	21.3	5	0.24	1	139	6.54	1	176	8.28	1	121	5.69	2	5
1600	2	6.9	22	3.20	4	219	31.83	5	99	14.39	3	47	6.83	2	14
1600	3	18.0	10	0.56	1	146	8.12	2	193	10.73	2	94	5.23	2	7
Edgecombe County Total		**494.2**	**1,625**	**883.97**		**6,698**	**4,221**		**6,974**	**2,802**		**5,599**			**2,263**
0300	5	3.2	28	8.72	5	190	59.19	6	194	60.44	5	76	23.68	5	21
0504	1	1.6	35	22.15	6	83	52.53	5	36	22.78	4	131	82.91	6	21
0700	1	15.0	56	3.74	4	192	12.83	3	184	12.29	3	167	11.16	3	13
0700	2	17.0	14	0.82	1	112	6.57	1	121	7.10	1	87	5.11	1	4
0800	1	28.3	28	0.99	1	193	6.81	1	187	6.60	1	203	7.16	2	5
0800	2	12.3	11	0.90	1	128	10.43	2	99	8.07	1	92	7.50	2	6
0800	3	11.9	23	1.93	3	212	17.82	4	171	14.37	3	112	9.41	3	13
0800	4	12.9	32	2.49	3	281	21.85	4	191	14.85	3	107	8.32	3	13
0900	1	42.0	30	0.71	1	147	3.50	1	240	5.72	1	99	2.36	1	4

0900	2	18.9	25	1.33	2	147	7.79	2	166	8.80	2	176	9.33	3	9
0900	3	29.6	36	1.21	2	215	7.25	1	271	9.14	2	194	6.55	2	7
0900	4	17.4	26	1.49	2	211	12.11	3	316	18.14	4	152	8.73	3	12
1000	1	16.3	41	2.51	4	272	16.65	4	251	15.36	3	205	12.55	4	15
1000	2	7.5	27	3.60	4	161	21.47	4	149	19.87	4	132	17.60	4	16
1000	3	16.9	92	5.46	5	367	21.77	4	324	19.22	4	355	21.06	5	18
1100	1	7.8	38	4.90	4	200	25.81	4	125	16.13	3	50	6.45	2	13
1100	2	11.9	19	1.60	3	134	11.27	3	107	9.00	2	34	2.86	1	9
1100	3	17.9	30	1.68	3	193	10.79	3	126	7.04	1	157	8.78	3	10
1100	4	2.6	22	8.40	5	146	55.73	5	149	56.87	5	73	27.86	5	20
1100	5	1.6	17	10.69	5	405	254.72	6	214	134.59	6	88	55.35	6	23
1100	6	3.1	127	40.45	6	350	111.46	6	401	127.71	6	258	82.17	6	24
1100	7	8.2	81	9.87	5	214	26.07	5	303	36.91	5	136	16.57	4	19
1200	1	6.7	34	5.08	6	159	23.77	4	179	26.76	4	82	12.26	4	18
1200	2	13.7	52	3.79	4	348	25.36	4	472	34.40	5	410	29.88	5	18
1200	3	15.7	37	2.35	3	300	19.08	4	159	10.11	2	50	3.18	1	10
1300	1	24.8	39	1.57	3	281	11.31	3	268	10.79	2	466	18.76	4	12
1300	2	17.4	28	1.61	3	160	9.22	2	318	18.33	4	155	8.93	3	12
1300	3	12.7	11	0.86	1	134	10.53	2	167	13.12	3	235	18.46	4	10
1400	1	21.4	32	1.50	2	246	11.51	3	292	13.66	3	250	11.70	3	11
1400	2	10.2	48	4.72	4	305	29.96	5	352	34.58	5	181	17.78	4	18
1500	1	16.6	72	4.35	4	178	10.76	2	412	24.89	4	94	5.68	2	12
1500	2	16.1	23	1.43	2	164	10.17	2	244	15.13	3	47	2.91	1	8
1500	3	14.3	19	1.32	2	180	12.55	3	176	12.27	2	60	4.18	1	8
011500	4	10.8	24	2.22	3	200	18.47	4	299	27.61	4	109	10.06	3	14
1500	5	9.7	43	4.43	4	153	15.77	3	270	27.84	5	229	23.61	5	17
Nash County		**496.8**	**1,307**	**173.35**		**7,547**	**1,049**		**8,170**		**985**	**5,570**			**643**

Total									
Study Area Total	**991.0**	**2,932**	**1,057**	**14,245**	**5,269**	**15,144**	**3,787**	**11,169**	**2,905**
Source: US Census 2000									

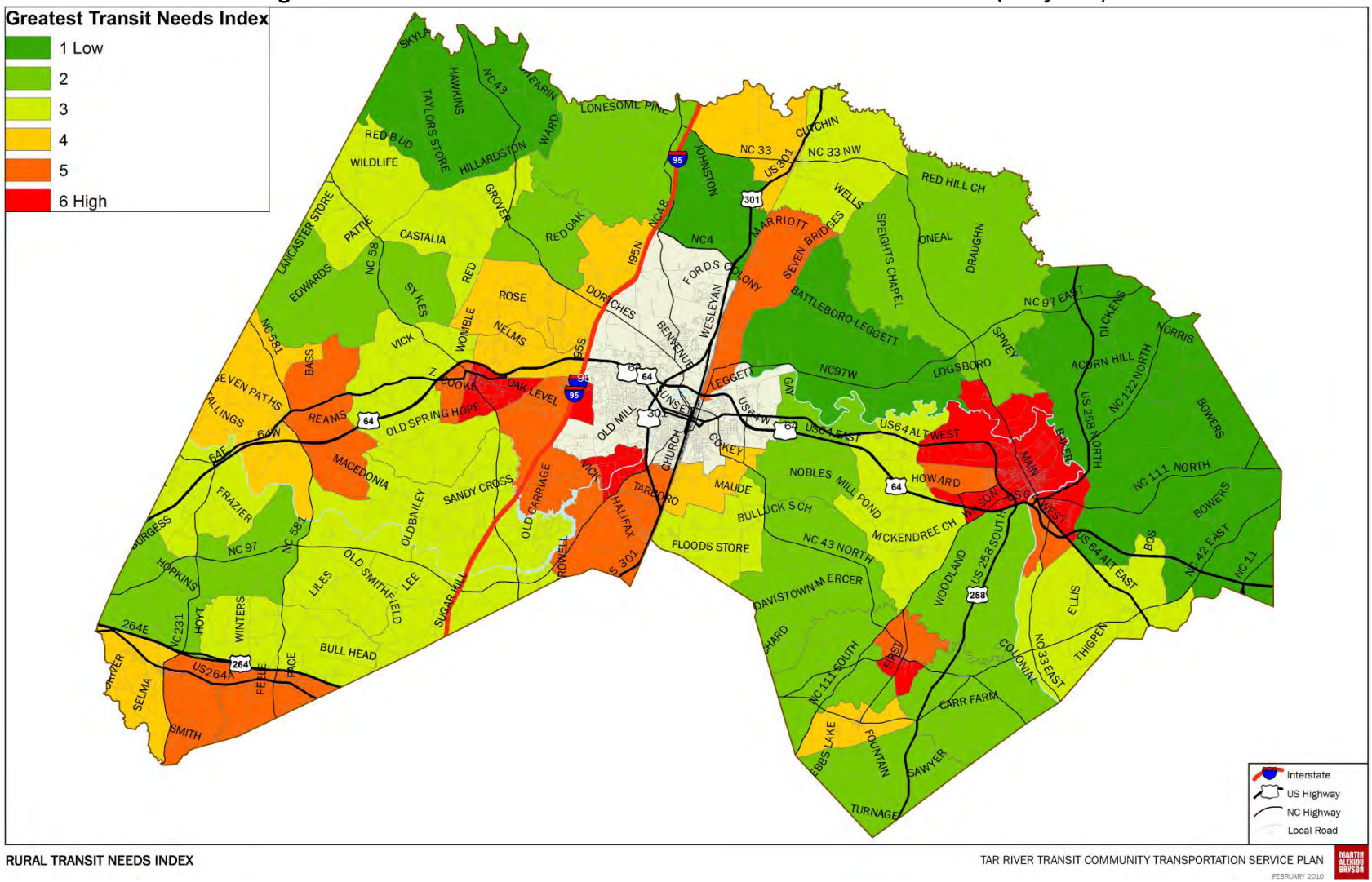
TABLE 9.4 ESTIMATED GREATEST TRANSIT INDEX RURAL TRANSIT DEMAND (STUDY AREA): RANKED BY TRANSIT NEED

County	Census Tract	Block Group	Overall Score (4 – 24)	Total Population	Greatest Transit Index Ranking
Edgecombe	37065020900	1	**24**	11	6
Edgecombe	37065020900	3	**21**	29	6
Edgecombe	37065021000	1	**24**	56	6
Edgecombe	37065021000	2	**24**	28	6
Edgecombe	37065021000	3	**24**	38	6
Edgecombe	37065021000	4	**24**	40	6
Edgecombe	37065021000	5	**23**	25	6
Edgecombe	37065021100	1	**23**	76	6
Edgecombe	37065021100	2	**24**	31	6
Edgecombe	37065021100	3	**21**	64	6
Edgecombe	37065021200	1	**24**	56	6
Edgecombe	37065021200	2	**24**	170	6
Edgecombe	37065021200	3	**24**	69	6
Edgecombe	37065021500	2	**24**	46	6
Nash	37127010300	5	**21**	53	6
Nash	37127010504	1	**21**	30	6
Nash	37127011100	5	**23**	118	6
Nash	37127011100	6	**24**	105	6
Edgecombe	37065020600	1	**18**	66	5
Edgecombe	37065020900	2	**19**	14	5
Edgecombe	37065021200	4	**20**	73	5
Edgecombe	37065021500	1	**19**	59	5
Nash	37127010200	5	**20**	57	5
Nash	37127011000	3	**18**	105	5
Nash	37127011100	4	**20**	42	5
Nash	37127011100	7	**19**	77	5
Nash	37127011200	1	**18**	42	5
Nash	37127011200	2	**18**	101	5
Nash	37127011400	2	**18**	91	5
Nash	37127011500	5	**17**	45	5
Edgecombe	37065020200	6	**15**	56	4
Edgecombe	37065021600	2	**14**	62	4
Nash	37127010700	1	**13**	53	4

Nash	37127010800	3	13	62	4
Nash	37127010800	4	13	77	4
Nash	37127011000	1	15	82	4
Nash	37127011000	2	16	46	4
Nash	37127011100	1	13	63	4
Nash	37127011500	4	14	46	4
Edgecombe	37065020700	1	11	51	3
Edgecombe	37065020800	3	12	88	3
Edgecombe	37065021300	2	10	64	3
Edgecombe	37065021400	1	12	56	3
Nash	37127010900	2	9	42	3
Nash	37127010900	4	12	59	3
Nash	37127011100	2	9	48	3
Nash	37127011100	3	10	59	3
Nash	37127011200	3	10	99	3
Nash	37127011300	1	12	82	3
Nash	37127011300	2	12	44	3
Nash	37127011300	3	10	32	3
Nash	37127011400	1	11	63	3
Nash	37127011500	1	12	42	3
Edgecombe	37065020700	2	5	65	2
Edgecombe	37065021300	1	8	67	2
Edgecombe	37065021300	3	6	43	2
Edgecombe	37065021400	2	8	67	2
Edgecombe	37065021500	3	7	60	2
Edgecombe	37065021600	1	5	49	2
Edgecombe	37065021600	3	7	40	2
Nash	37127010800	1	5	48	2
Nash	37127010800	2	6	36	2
Nash	37127010900	3	7	70	2
Nash	37127011500	2	8	43	2
Nash	37127011500	3	8	53	2
Edgecombe	37065020600	2	4	55	1
Edgecombe	37065020800	1	4	56	1
Edgecombe	37065020800	2	4	37	1
Nash	37127010700	2	4	18	1
Nash	37127010900	1	4	47	1

Source: US Census 2000

Figure 9.3 Estimated Greatest Transit Needs Index Rural Transit Demand (Study Area)



10. TRANSIT SERVICE CONCEPTS

This section describes the potential service expansion options that could realistically be implemented within the five-year planning horizon. The options are focused mainly on addressing riders' requests for more frequent service and service at additional times, as well as taking advantage of potential funding for services targeted at certain markets. It is acknowledged that priorities will need to be set, as funding is unlikely to be available for all options. However, it is also important to retain unfunded options in the plan, in case windfalls become available at short notice.

SERVICE CONCEPTS: URBAN FIXED-ROUTES IN ROCKY MOUNT

Service Planning Goals and Principles

The overall goals are as follows:

- Fix existing problems
- Allow for, and make best use of, future incremental growth in the amount of service
- Minimize disruption to existing travel patterns
- Avoid making changes that are only expected to have a short lifetime (e.g. avoid introducing a new service that cannot be sustained)
- Make the system easy to understand and use, especially for new riders.

These goals translate into the more technical service-planning principles as follows:

- Retain the half an hour pulse at the transfer center
- Regular hourly service on busiest routes
- Provide additional transfer opportunities, at locations other than the main transfer center
- Aim for mirrored schedules (i.e. a rider's trip should be convenient both inbound and outbound, not just one way)
- Aim for bi-directional routes (i.e. riders use the same route/other mirroring route both inbound and outbound)
- Maximize direct links between residential areas and retail areas (e.g. there should be a grocery store on each route)
- Similarly, connect as many residential areas as possible directly to downtown

- Minimize time-consuming detours from main streets

Service Improvement Opportunities

The opportunities for improvement generally fall into three categories:

1. Increasing the service span for fixed-route service, to include longer evenings and possibly Sundays. Currently, evening trips are only available until 6:45PM at the latest, Monday-Saturday, and there is no Sunday service at all.

2. Providing the basic level of fixed-route service to the remaining parts of Rocky Mount that do not currently have it. This includes (a) peripheral residential areas, such as Cokey Road or Benvenue Road and Gold Rock Road past their intersection in northwest Rocky Mount; (b) additional employment areas, such as the establishments along US 301; and (c) nearby areas that are beyond the city limits but are part of Rocky Mount's area of influence, such as the US 301 corridor toward Sharpsburg.

3. Improving the quality (including directness and frequency) where there is already service – particularly for the most important destinations such as Golden East Crossing Mall, US 301 Highway area and Nash General Hospital, where additional capacity is also required at peak times.

Service Improvement Recommendations

Status-Quo

Based on the calculated fully allocated cost per hour of service, which is estimated at $33.69 in FY 2008-09 (as shown in Table 5.7), the existing Monday through Friday weekday annual service costs were estimated at $610,000, with an added costs of about $67,000 for providing Saturday service, which set the total annual cost of providing fixed-route service at around $677,000.

If TRT services stayed as they are today with only minor adjustments made, the cost of providing service would be near those levels. The Status-Quo option considers only the "must" improvements, namely the addition of the 10th fixed route, East Rocky Mount, and the extension of the Golden East route to one-hour (changes to be implemented in FY 2010-11). Under this scenario, the additional annual costs TRT would incur would amount to $120,000 in operating costs and $360,000 in capital costs for an extra city bus and bus shelters needed for service expansion in the first year of the Five-Year Plan, with continuing operating costs of that magnitude in the following four years (adjusted for inflation) and minimal capital costs. Potential funding sources would include S.5309 Urban Formula Funding and additional SMAT funding due to increased hours of operation, along with increased local funding on the operating side, and S.5309 Capital Investment Program with a 10 percent local match (about $36,000) on the capital side.

Extend Evening Service Hours

In terms of feedback received from the TRT riders, longer hours of service, particularly weekday evening hours, were the single most requested service improvement, and both the on-board survey results and the public input gained from two public workshops support extending evening service hours. This option would address riders' concerns about returning home from work. In the Study Area, demand-responsive service is currently not available in the evenings, and if it were available it is likely it would be used very sparingly for that purpose. Typically, the reasons might be a combination of limited marketing, the higher fare compared to fixed-route service, and the inconvenience of having to schedule the trip.

The fixed-route service could be readily extended into the evening, using existing vehicles. Additional driver hours would be required and might trigger the conversion of the afternoon shifts from part-time to full-time status (with an impact on employee benefit costs). There would be a proportional increase in other operating costs. The recommended option extends fixed-route service hours by two hours until 8:15 PM or 8:45 PM (depending on each route's final arrival at the Transfer Center in downtown Rocky Mount). This option includes the newly extended one-hour Golden East route (no longer interlined with Ravenwood route) and the new proposed East Rocky Mount route (interlined with Ravenwood route).

The estimated annual cost of extending fixed-route service by two hours is $146,000 in operating costs (an increase of 31 percent over current level) and negligible capital costs. Notably, this service improvement would be implemented beginning in FY 2011-12. Potential funding sources would include S.5309 Urban Formula Funding and additional SMAT funding due to increased hours of operation, increased local funding on the operating side (using potential savings from reduced need for evening demand-responsive service), and S.5309 Capital Investment Program with a 10 percent local match.

Enhanced Saturday Service

This option would modify and enhance TRT's fixed-route Saturday service. Ravenwood and the proposed South Rocky Mount routes would offer full day Saturday service, and Golden East would be extended to an hourly route, with service extended by one hour in the evening. The interlined routes would be paired differently as well, to match the proposed weekday interlining. The additional annual cost of implementing these improvements would be around $19,000 in operating costs, with negligible capital costs. Notably, this service improvement would be implemented beginning in FY 2012-13. Potential operating costs funding sources would include CMAQ (Congestion Mitigation and Air Quality) and additional SMAT funding due to increased hours of operation, as well as increased local funding and potential savings from reduced need for evening demand-responsive service.

TABLE 10.1 PROPOSED URBAN FIXED-ROUTE SERVICE IMPROVEMENTS														
Description	**Assumptions**			**Operating Cost Calculations**					**Costs †**			**Potential funding sources**		**FY Implement ation**
Fixed-Route Service Improvements	Operating	ADA service	Capital	Vehi-cles	Hours	Days per year	Hours per year	Rate	Annual Operating	Capital	% Increase in Operating Costs	Operating	Capital	
Existing Fixed-Route Service	FY 2008-09					307	23,542	33.69	$677,433	$439,597				
New /extended Routes:														
EAST ROCKY MOUNT Route Monday-Friday (interlined with RAVENWOD)	6.5 pay hours per day, representing 6 revenue hours per day. Capital costs = 1 new Orion VII bus ($490,000) & $20,000 in capital costs for route's shelters, stops.	Existing ADA service	One expansio n vehicle	1	6.5	255	1,658	$34.70	$57,519	$360,500	8.0%	*S.5309 Urban Formula Funding *Increased local funding *Increased SMAP allocation due to additional hours	S.5309 with 10% local match	2010 -11

GOLDEN EAST route extension	1-hour route, 7 extra pay hours per day, representing 6 revenue hours per day. Total 13 pay hours per day, representing 12 revenue hours per day. 1st run scheduled 1/2 hour earlier - at 6:45AM, last run leaves T.C. at 5:45PM	Existing ADA service	Existing vehicles, negligible capital costs	0	7	255	1,785	$34.70	**$61,944**	**Negligible**	**8.6%**	*S.5309 Urban Formula Funding *Increased local funding *Increased SMAP allocation due to additional hours	S.5309 with 10% local match	2010 -11
Hours of Service extension:														
Evening Fixed-Route Service Monday-Friday (2 additional hours)	Assumed 1 extra bus already bought for East Rocky Mount route. Fixed-route service extended from 6:45PM to 8:45PM (or 8:15PM on interlined routes).	Any evening paratransit service effectively becomes ADA-only within Rocky Mount	Existing vehicles, negligible capital costs	0	16.0	255	4,080	$35.74	**$145,833**	**Negligible**	**19.7%**	*S.5309 Urban Formula Funding *Increased local funding *Increased SMAP allocation due to additional hours	N/A	2011 -12
Expanded Saturday Service:														
Saturday Fixed-Route Service enhanced	Assumed 1 extra bus already bought for East Rocky Mount route. Addition of Ravenwwod and East Rocky Mount service, Golden East added extra run.	Proposed evening DR service effectively becomes ADA-only within Rocky Mount	Existing vehicles, negligible capital costs	0	10	52	520	$36.82	**$19,144**	**Negligible**	**2.5%**	*Increased local funding *CMAQ *Increased SMAP allocation due to additional hours	N/A	2012 -13

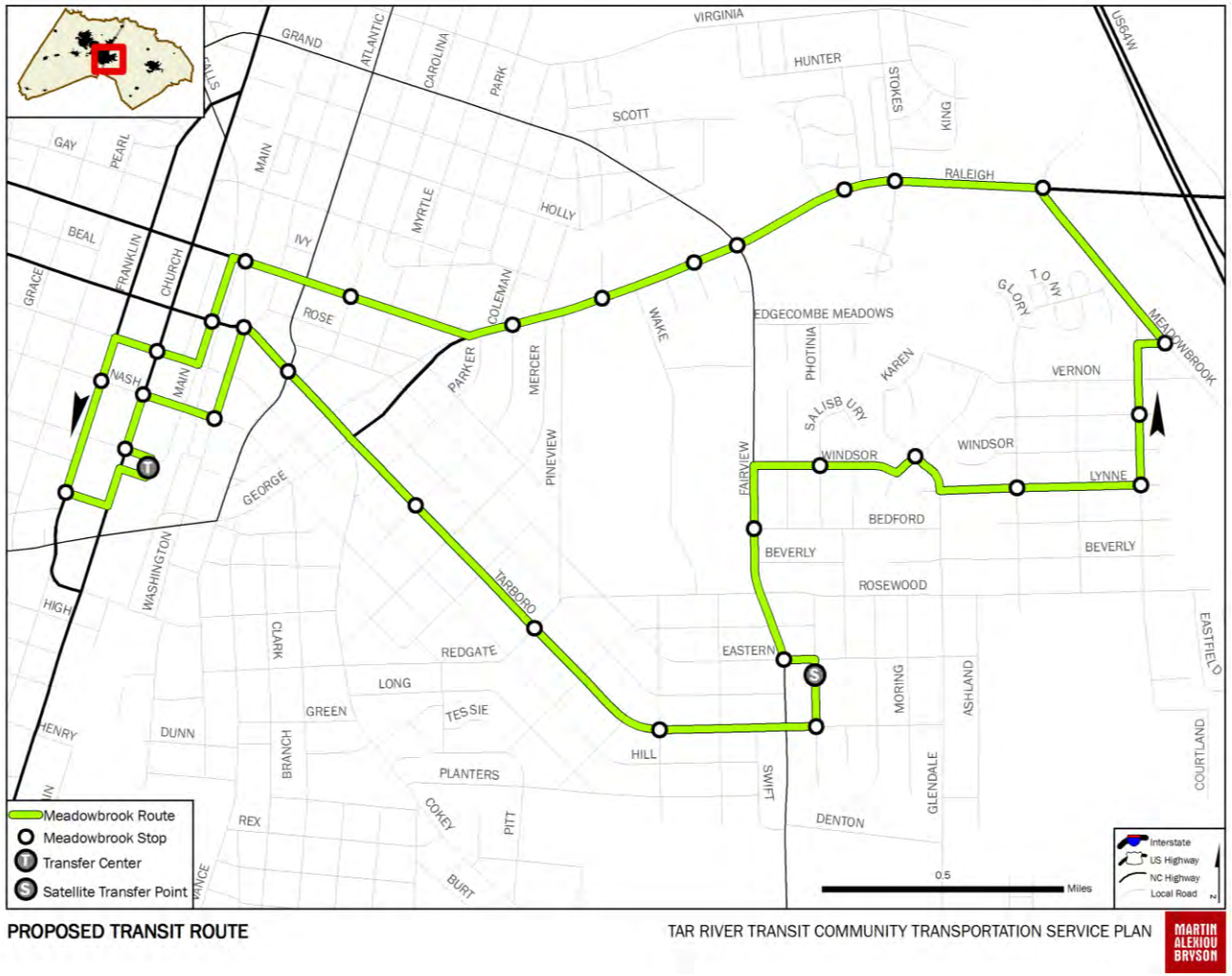
Proposed Service Improvements – Individual Routes

Meadowbrook – Route #1

- Interlined with South Rocky Mount route (#3)
- Satellite transfer point at the Oakwood Shopping Center
- "Superstop" transit stop at Edgecombe Community College
- Using Tarboro Street instead of Eastern Avenue from George Street to Fairview Road
- Using Lynne Avenue instead of Rosewood Avenue from Glendale Drive to Courtland Avenue

Proposed TRT Meadowbrook route is shown in Figure 10.1.

Figure 10.1 Proposed Meadowbrook Route

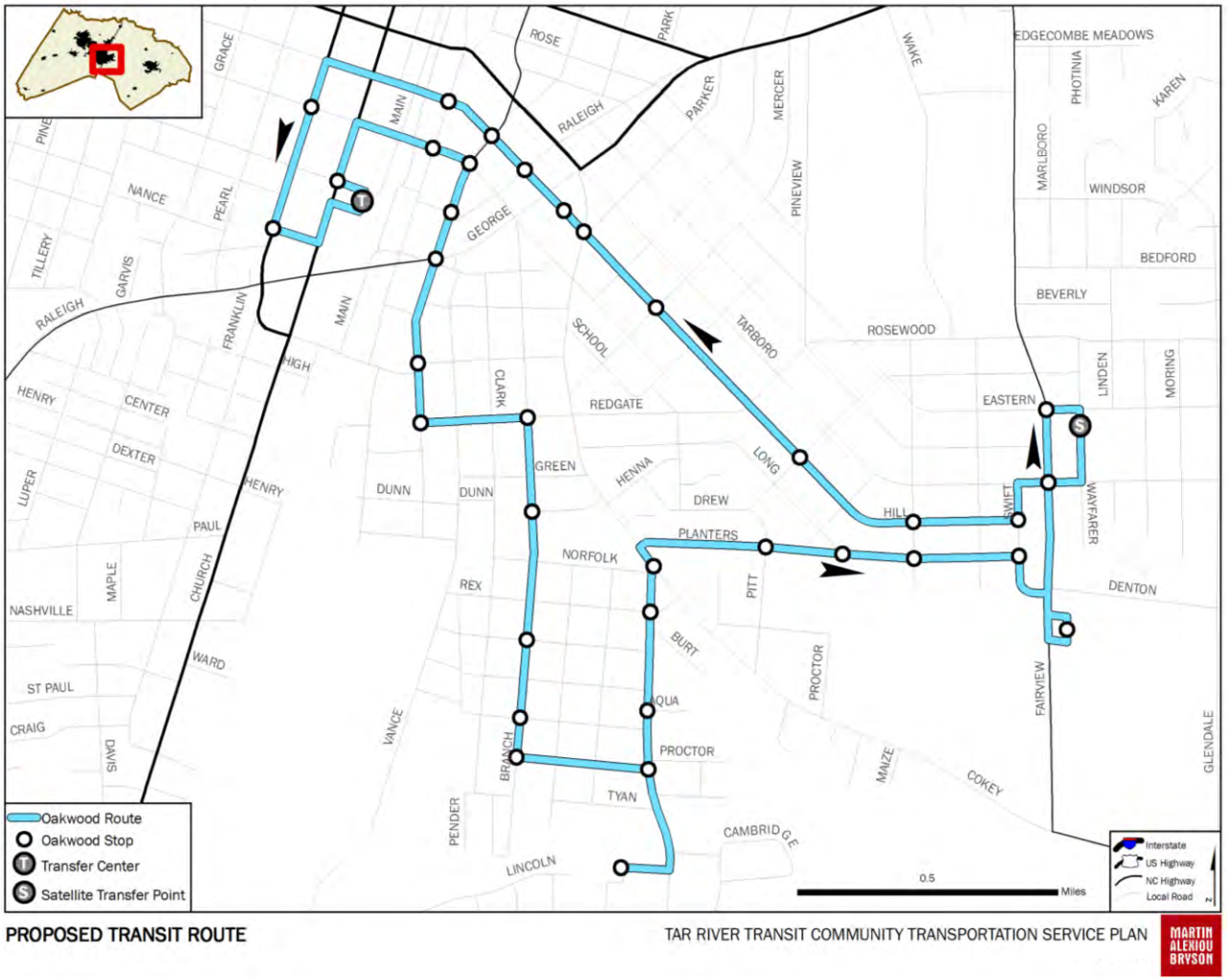


Oakwood – Route #2

- Interlined with Hillsdale route (#4)
- Satellite transfer point at the Oakwood Shopping Center
- Using Planters Street rather than Long Avenue

Proposed TRT Oakwood route is shown in Figure 10.2.

Figure 10.2 Proposed Oakwood Route



PROPOSED TRANSIT ROUTE

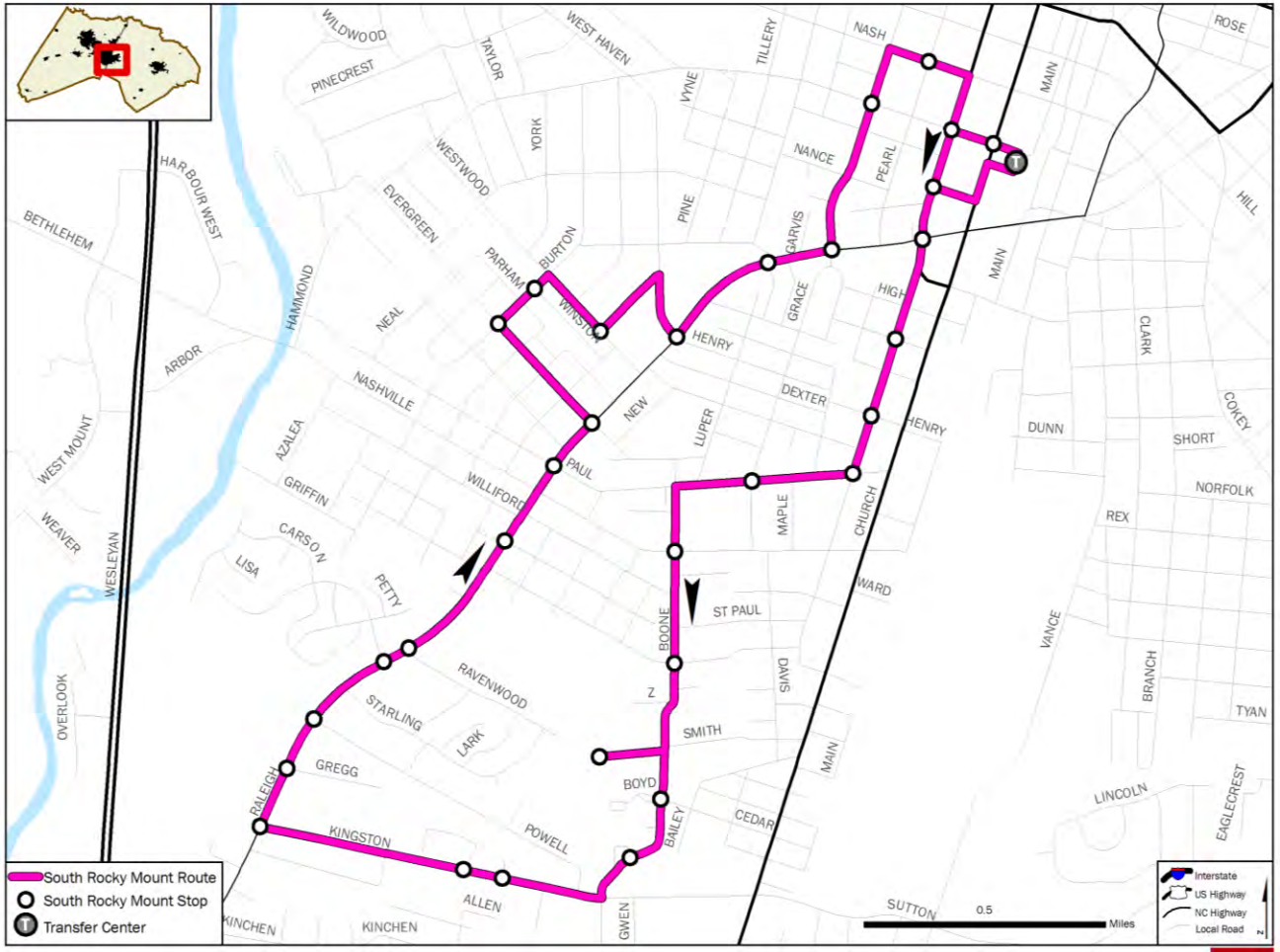
TAR RIVER TRANSIT COMMUNITY TRANSPORTATION SERVICE PLAN

South Rocky Mount – Route #3

- Interlined with Meadowbrook route (#1)
- Using Paul and Boone Street rather than Church Street
- Serve South Rocky Mount Community Center directly

Proposed TRT South Rocky Mount route is shown in Figure 10.3.

Figure 10.3 Proposed South Rocky Mount Route



PROPOSED TRANSIT ROUTE

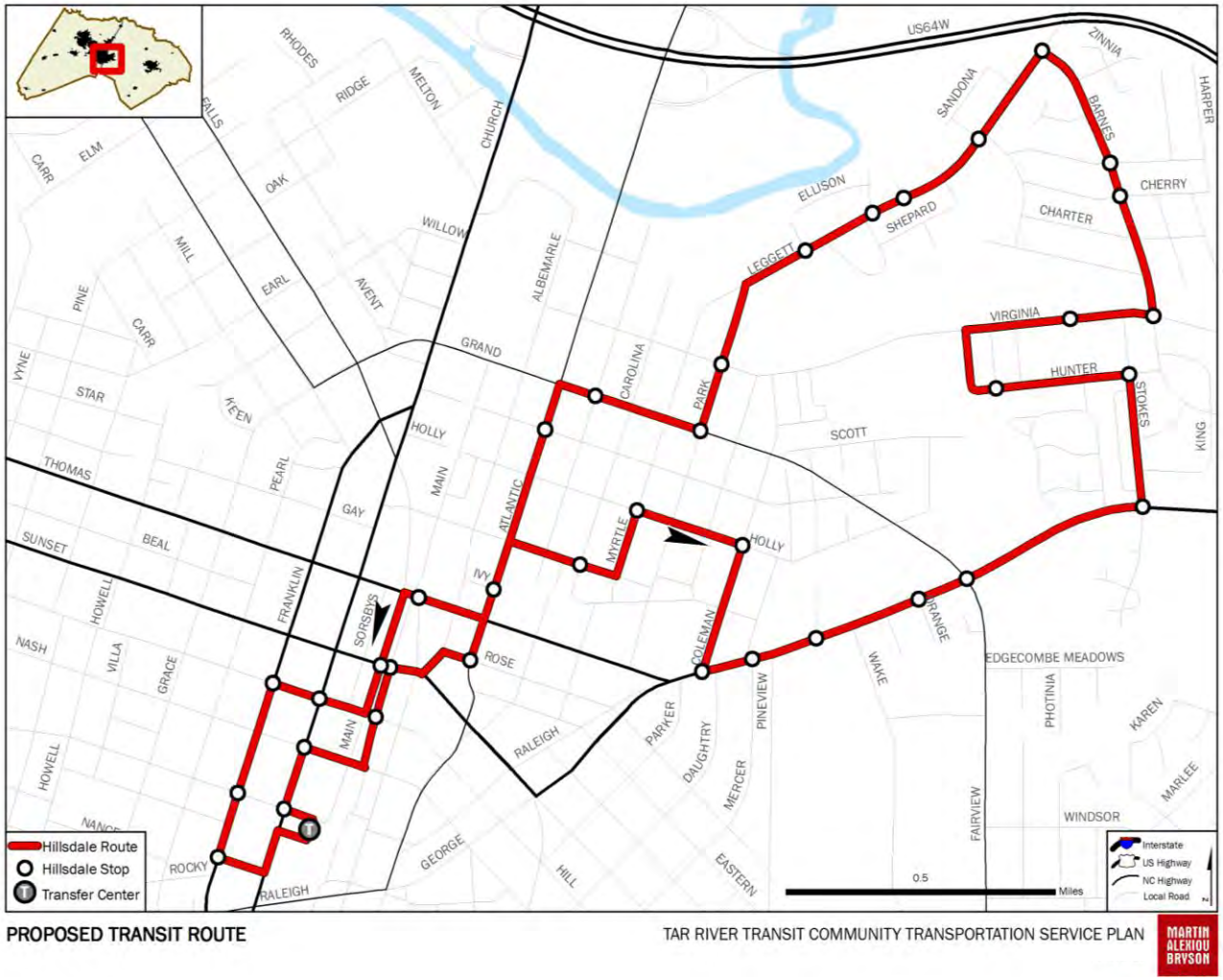
TAR RIVER TRANSIT COMMUNITY TRANSPORTATION SERVICE PLAN

Hillsdale – Route #4

- Interlined with Oakwood route (#2)
- Informal satellite transfer point to Meadowbrook route at Edgecombe Shopping Center
- Install bus shelters at the folowing locations:
    - Goldleaf Street/Carolina Avenue
    - Hunter Street/Whitehead Drive
    - Virginia Street (behind Baskerville School)
    - Atlantic Avenue/Ivey Street

Proposed TRT Hillsdale route is shown in Figure 10.4.

Figure 10.4 Proposed Hillsdale Route



PROPOSED TRANSIT ROUTE

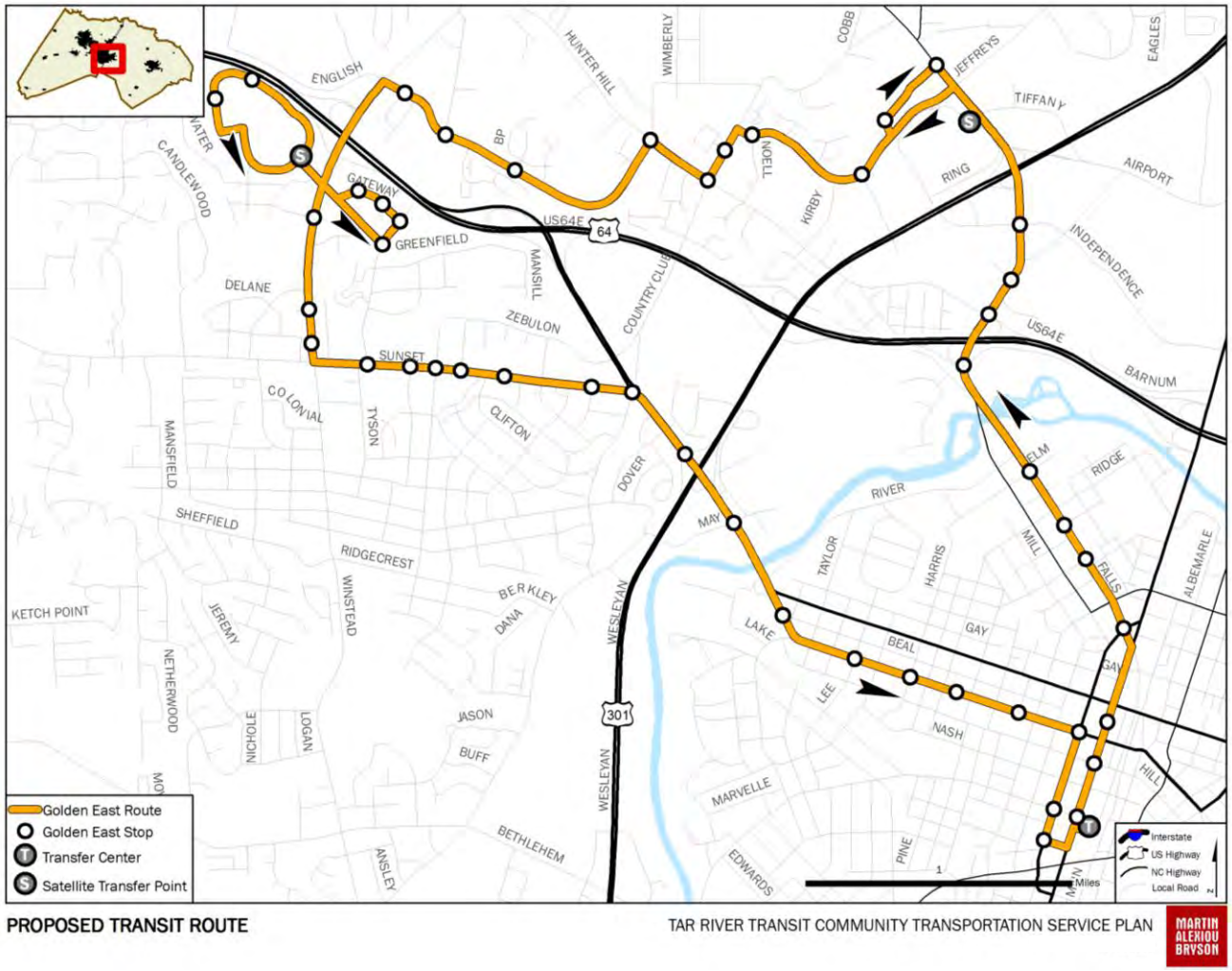
TAR RIVER TRANSIT COMMUNITY TRANSPORTATION SERVICE PLAN

Golden East – Route #5

- Route extended to one hour, disconnected from Ravenwood route
- Extension mostly overlaps with modified Sunset route – nearly bi-directional service: from existing routing at the intersection of Hunter Hill and Country Club, follow Hunter Hill, Nicodemus Mile, then continue along existing inbound Sunset alignment
- Satellite transfer point at the Golden East Crossing Mall
- Satellite transfer point at Nash General Hospital

Proposed TRT Golden East route is shown in Figure 10.5.

Figure 10.5 Proposed Golden East Route

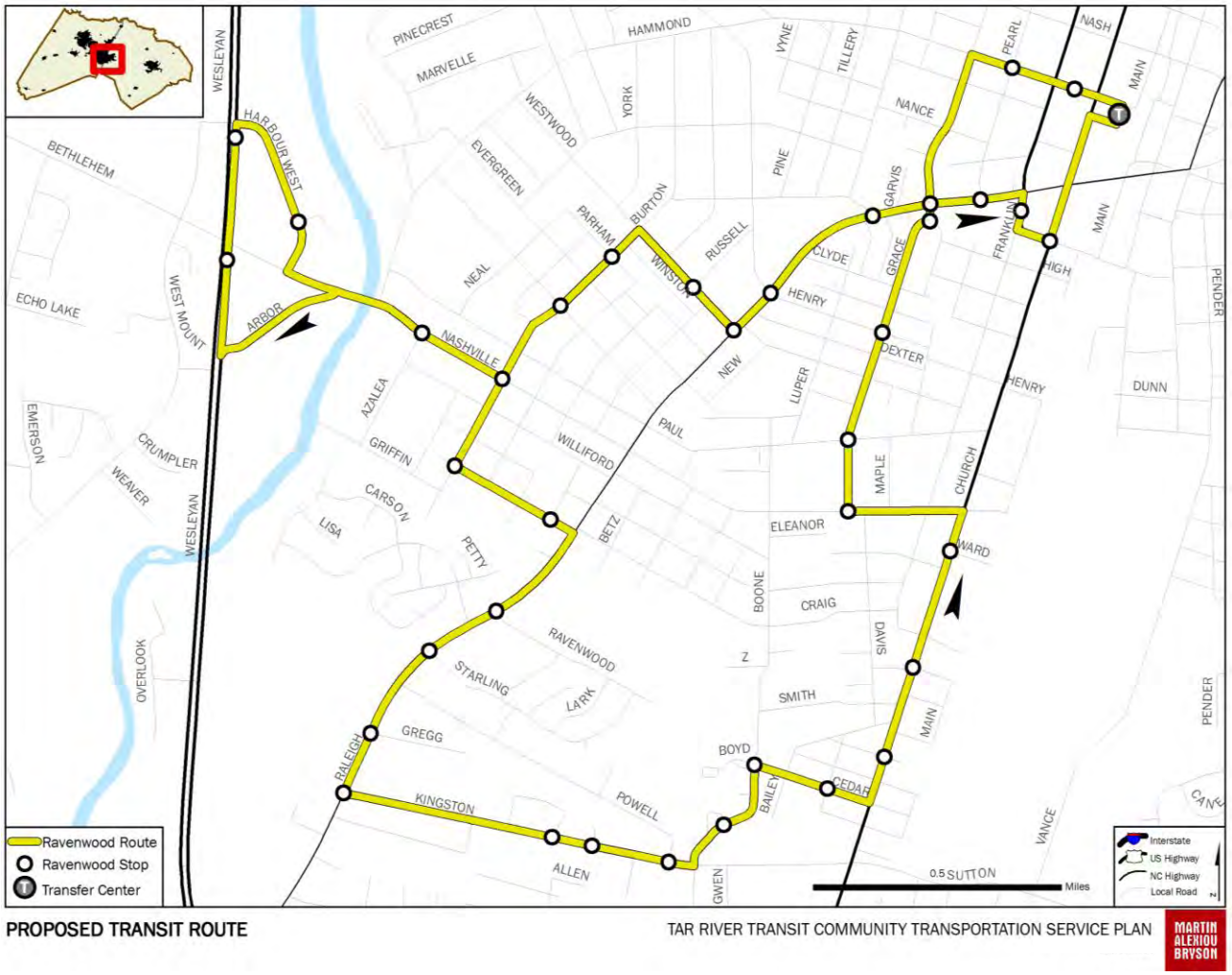


Ravenwood – Route #6

- Route disconnected from Golden East route, connected to East Rocky Mount route (new route)
- Service extension along Nashville Road to the Food Lion shopping area at the intersection of Bethlehem Road and US 301 (informal transfer to Nash Community College/Little Easonburg shuttle)
- Streamline the Ravenwood Drive/Ellen Drive area routing – provide service along Raleigh Road to Gregg Court Rocky Mount Housing for the Elderly and continue along Kingston Avenue
- Realign routing in the Rolling Meadows Apartments area - serve Rolling Meadows Apartment complex directly, and then follow Cedar Street back to South Church Street
- Install bus shelters at the following locations:
    - Raleigh Road at Westwood Drive
    - Ravenwood Drive/Raleigh Road
    - Grace Street/Raleigh Road

Proposed TRT Ravenwood route is shown in Figure 10.6.

Figure 10.6 Proposed Ravenwood Route



PROPOSED TRANSIT ROUTE

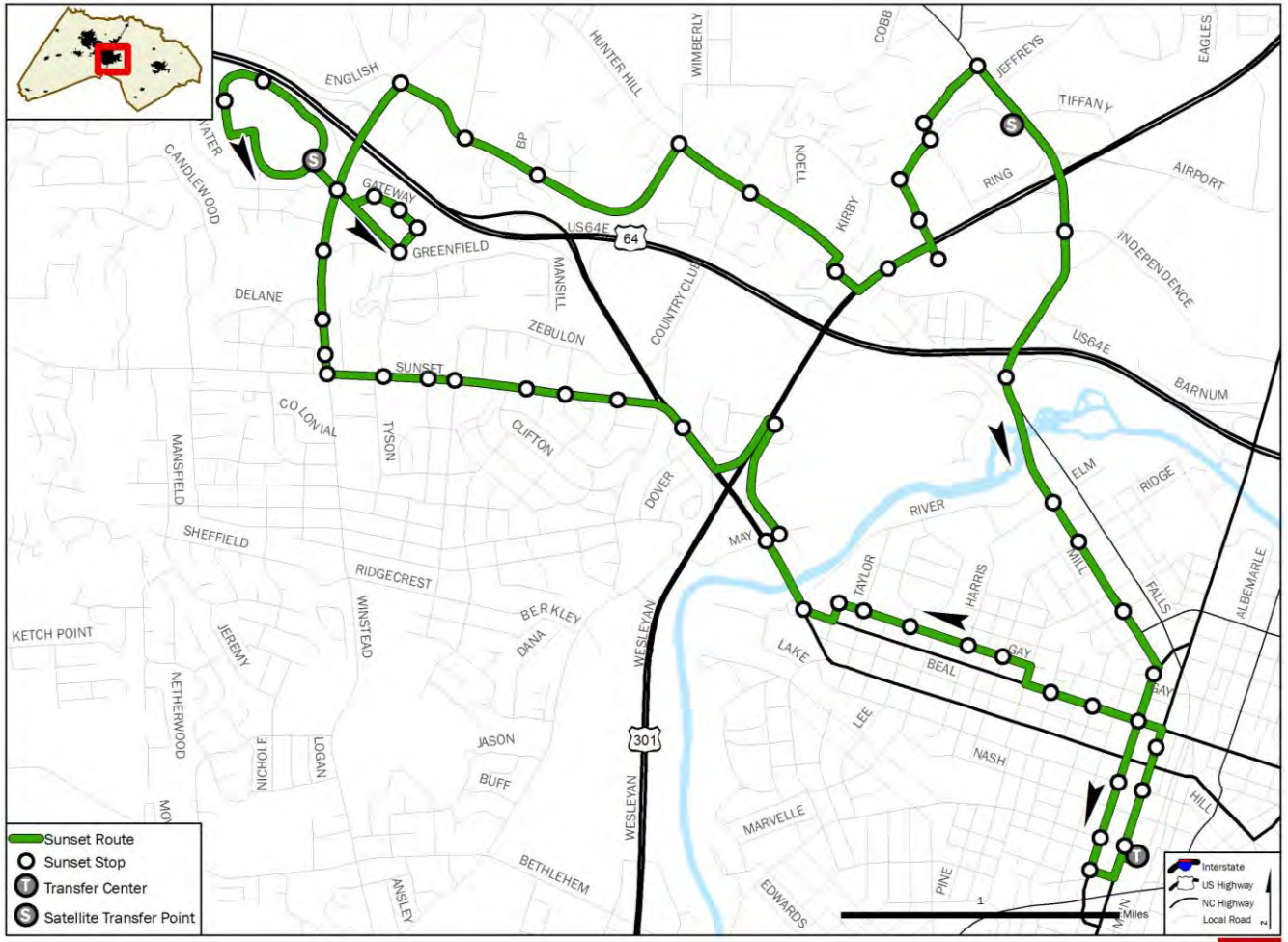
TAR RIVER TRANSIT COMMUNITY TRANSPORTATION SERVICE PLAN

Sunset – Route #7

- Route modified to mostly overlap with extended Golden East route (as proposed) – nearly bi-directional service: from existing routing at the Rocky Mount Medical Center, follow Nicodemus Mile, Hunter Hill, serve points along US 301/Big Lots shopping center and along Sutter's Creek Blvd., then continue along existing inbound Golden East alignment
- Satellite transfer point at the Golden East Crossing Mall
- Satellite transfer point at Nash General Hospital

Proposed TRT Sunset route is shown in Figure 10.7.
Proposed Sunset and Golden East routes are shown together in Figure 10.8.

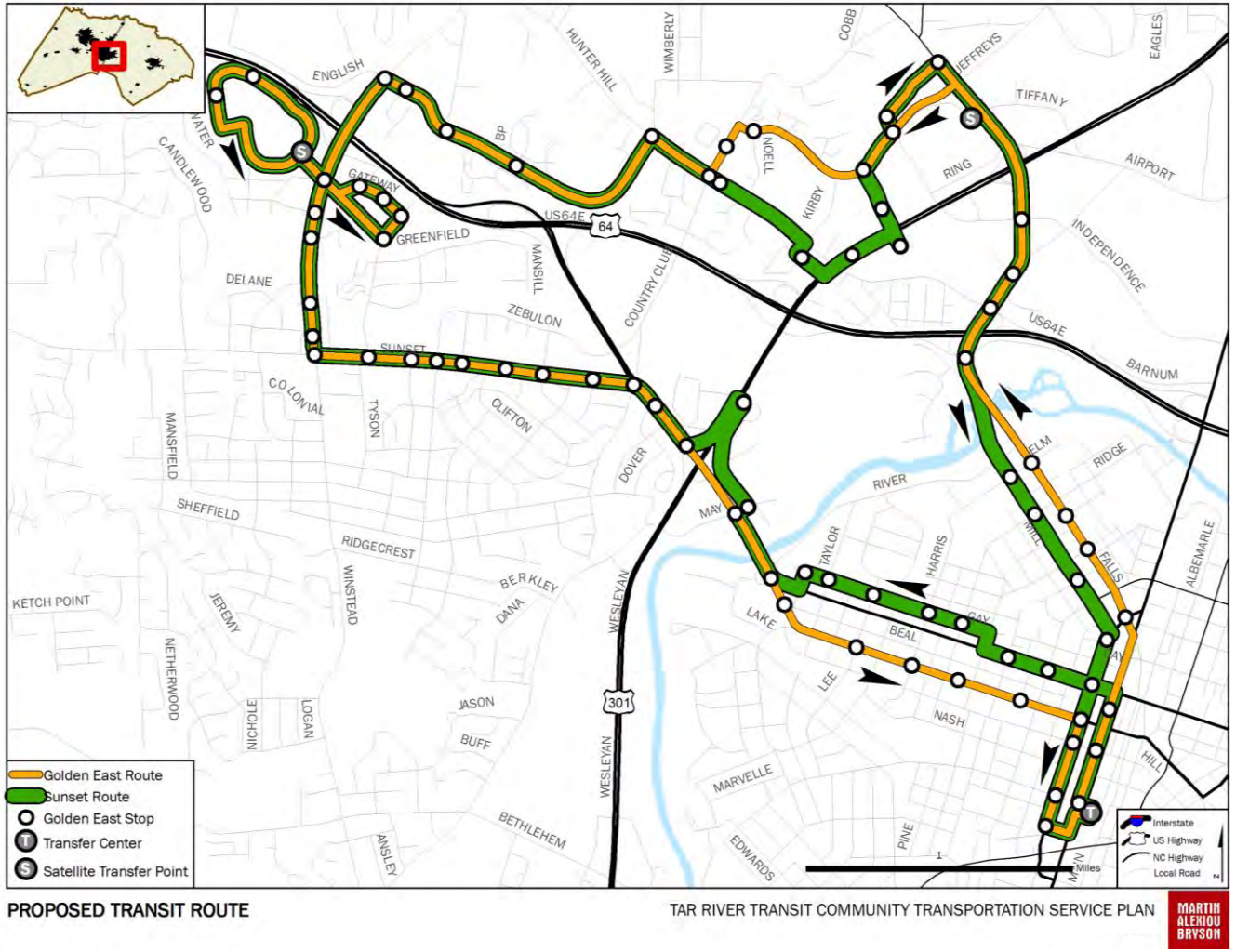
Figure 10.7 Proposed Sunset Route



PROPOSED TRANSIT ROUTE

TAR RIVER TRANSIT COMMUNITY TRANSPORTATION SERVICE PLAN

Figure 10.8 Proposed Golden East and Sunset Routes



East Rocky Mount – Route #8

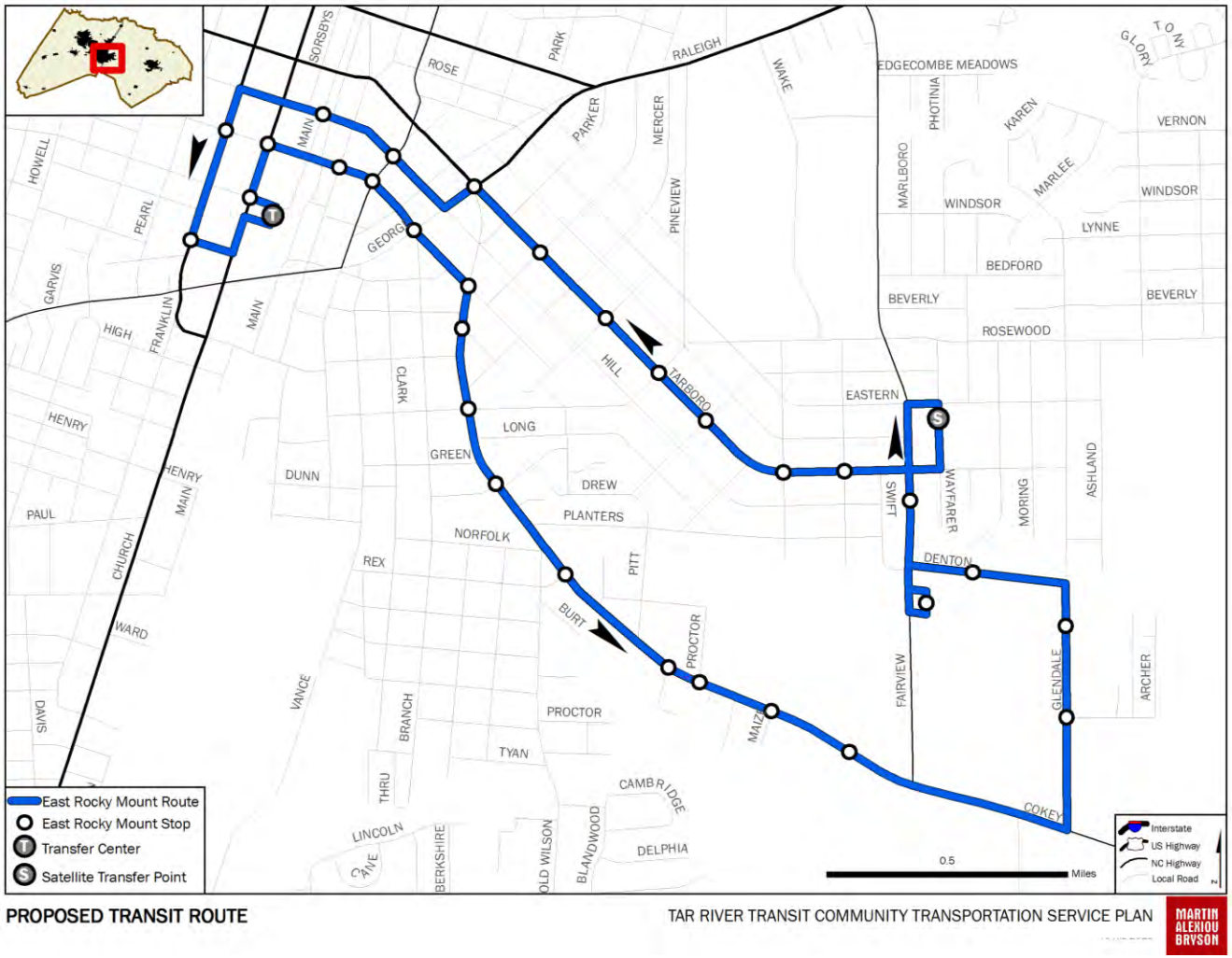
East Rocky Mount – the proposed future Route #8 would operate in the east part of Rocky Mount. The area in question is currently served by Meadowbrook and Oakwood routes. The purpose of this route is to strengthen existing service to locations such as Edgecombe County Social Services, Oakwood Shopping Center, as well as serve new locations along Cokey Road such as Cokey Road Apartments and Heritage Retirement Center, and Rollinwood Apartment Complex at Rollinwood Drive/South Glenwood Drive. The 30-minute route would leave the Transfer Center at :15 every hour and arrive at the Transfer Center at :44 every hour.

Notable route features:

- Interlined with Ravenwood route (#6)
- Satellite transfer point at the Oakwood Shopping Center

Proposed TRT East Rocky Mount route is shown in Figure 10.9.

Figure 10.9 Proposed East Rocky Mount Route

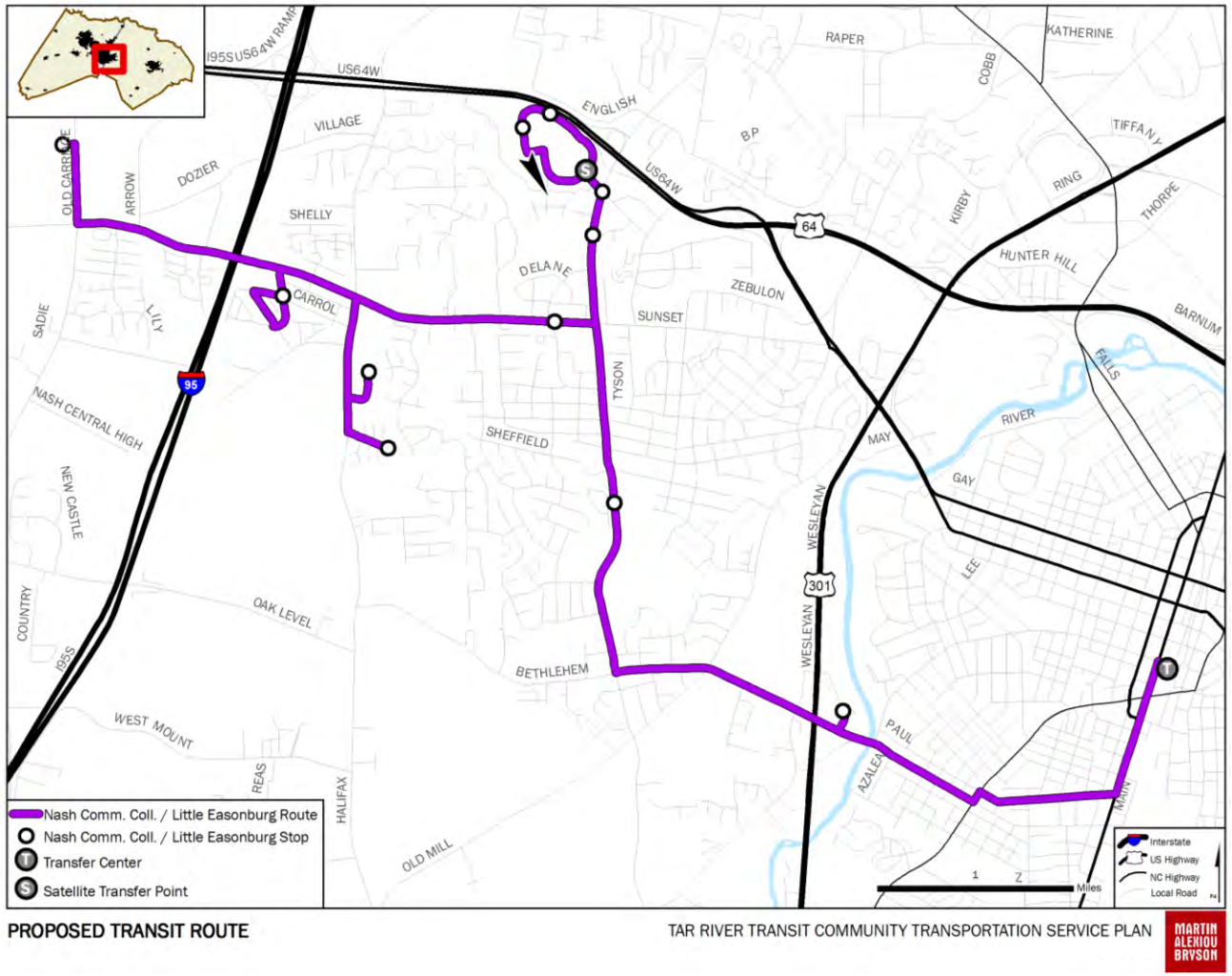


Nash Community College/Little Easonburg – Shuttle #1

- Extended service to Nash General Hospital
- Satellite transfer point at Nash General Hospital
- Formalized Westridge Shopping Center stop, added a Food Lion stop at Harbour West Drive (informal transfer to Ravenwood route), eliminated Edwards Junior High School stop (route streamlined along Nashville Road)
- Fare raised to $2 per one-way ride

Proposed TRT Shuttle #1 is shown in Figure 10.10.

Figure 10.10 Proposed Nash Community College/Little Easonburg Shuttle

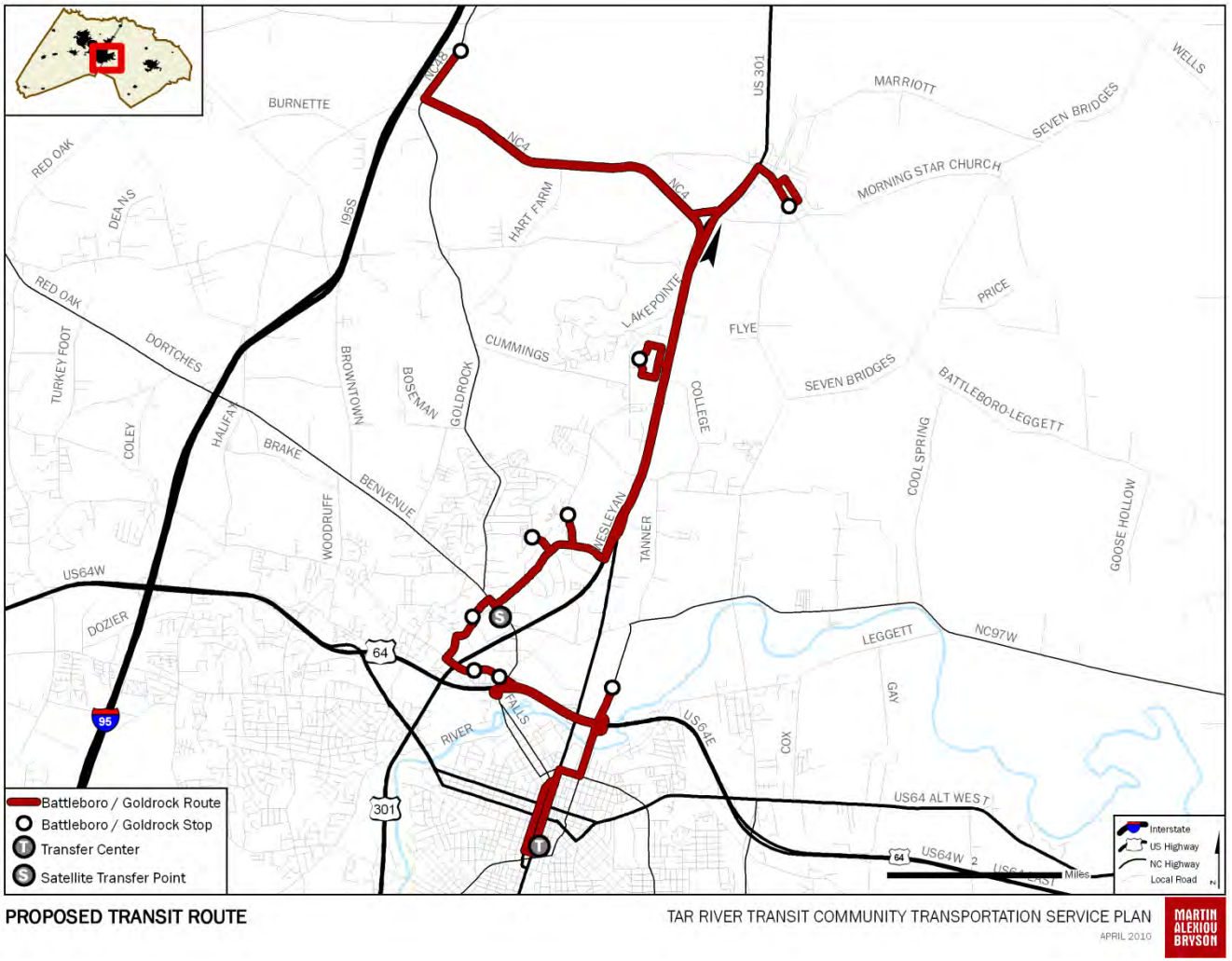


Battleboro/Goldrock – Shuttle #2

- Extended service to Wildwood Trace Apartments and Colony Square Apartments
- Realigned to serve Wal-Mart and residential areas along Hunter Hill Rd formerly served by Golden East route
- Satellite transfer point at the Golden East Crossing Shopping Mall
- Partnership with Wesleyan College/TCI Works
- Fare raised to $2 per one-way ride
- Mid-day break in service eliminated – continuous service through the day

Proposed TRT Shuttle #2 is shown in Figure 10.11.

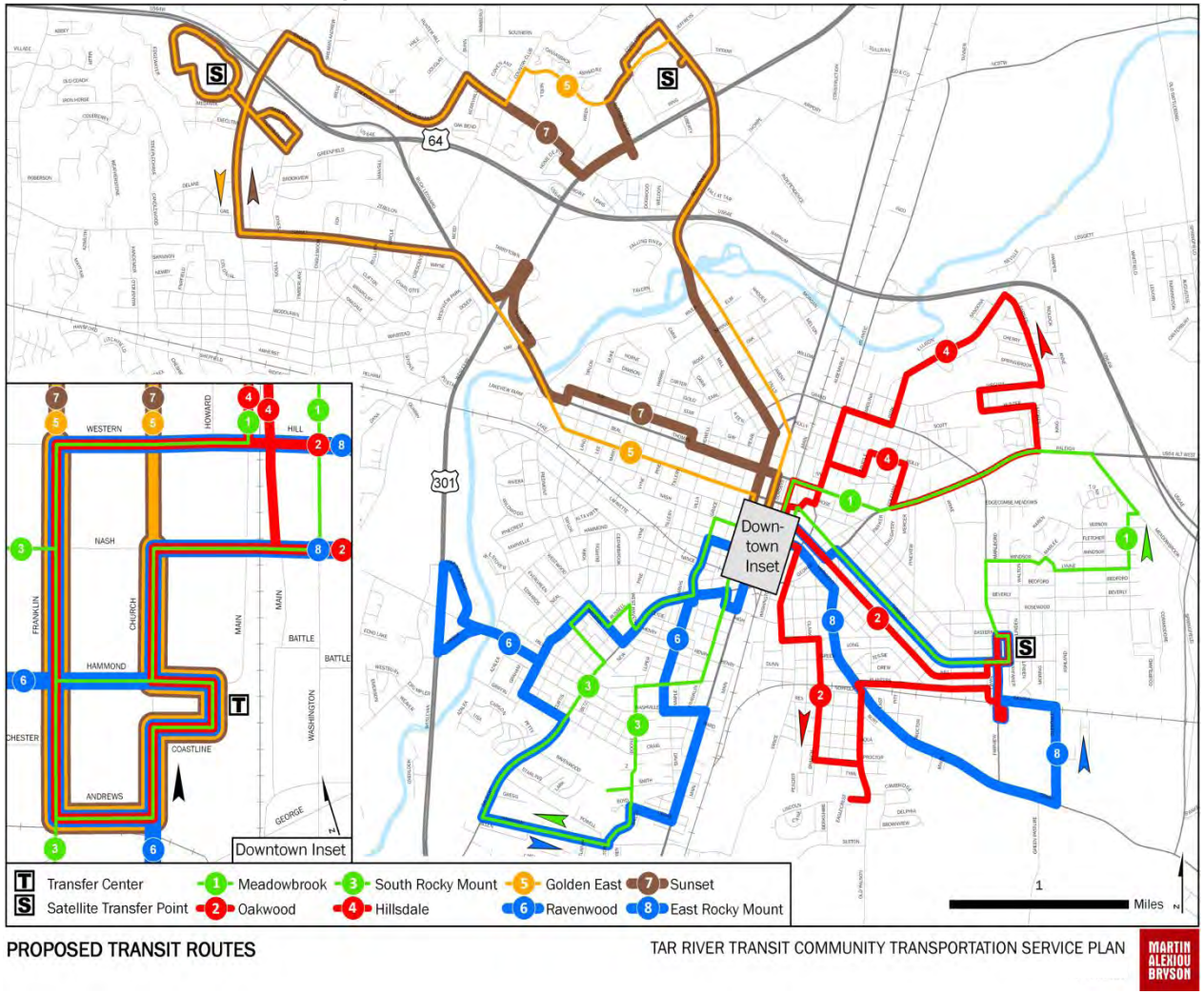
Figure 10.11 Proposed Battleboro/Goldrock Shuttle



Systemwide Fixed-Routes Map

The proposed systemwide TRT fixed-routes map is shown in Figure 10.12.

Figure 10.12 Proposed TRT Fixed-Routes System



Satellite Transfer Points

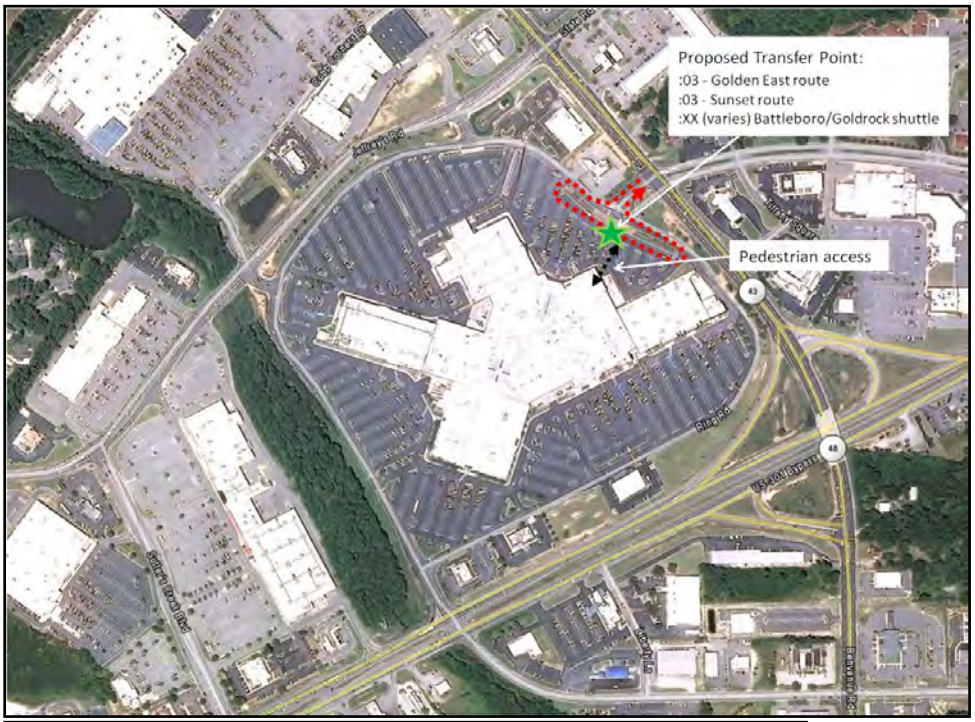
All TRT fixed-routes buses will continue to pulse at xx:15 and xx:45 at the main transfer center in downtown Rocky Mount. However, additional transfer opportunities will become available:

- **Satellite transfer points**: As the system expands and matures with additional routes serving the commercial areas around Benvenue Road/Jeffrey's Road (Golden East Crossing Mall and Wal-Mart), as well as Oakwood Shopping Center and Nash General Hospital, three satellite transfer points are proposed – in the Golden East Crossing Shopping Mall area, in the Oakwood Shopping Center area, and at the Nash General Hospital (Figure 10.13). These would be unstaffed but high-quality stops (sometimes known as 'superstops'), where riders can safely tranfer and buses can wait if required. The system will be designed to offer transfer opportunities at these locations. Although in some cases buses will meet (as in the case of Golden East and Sunset routes at the Golden East Crossing Mall), this is not a requirement and a rider is likely to be waiting a few minutes for the following bus. It may be possible to create basic transfer points on existing city rights-of-way, but more extensive facilities may need to be planned in association with future commercial redevelopment.
- **Concept:** These transfer points would be unstaffed but high-quality stops (sometimes known as "superstops"), where riders can safely transfer and buses can wait if required. They would include shelters, lighting and posted information. They can be directly on-street (with buses using a turnout) or alongside the street (with buses using a dedicated bus-only aisle). Figure 10.14 shows an example of the latter.
- **Golden East Crossing Mall**: Transfers will continue to be available at the Golden East Crossing Mall in the future, and this role could expand if additional routes serving the northwestern part of Rocky Mount are introduced. The existing stop is convenient for the mall but is not ideal as a transfer location. This stop is physically compatible with all three routes, so it can continue to be used in the future. However, it has several disadvantages:
    - It involves a time-consuming detour through the parking lot (with speed bumps).
    - The stop is on private land and therefore outside of TRT's control.
- It is recommended that the existing Golden East Crossing Mall be replaced with a "superstop" transfer point near Tiffany Boulevard, as shown in Figure 10.12. The exact location and layout would need to be studied further, and would depend on right-of-way availability, but should aim to serve potential future routes to/from any direction. It would include pedestrian crossing facilities and sidewalks to connect to

the mall's main entrance. This is convenient for buses on the Benvenue Road Corridor, either making a right or left turn onto Tiffany Boulevard. It also allows the "superstop" to be conveniently-located as a "flagship" location at the heart of the commercial area. It may be possible to create a basic transfer point on existing city right-of-way in this area, but more extensive facilities are possible in conjunction with future commercial redevelopment. An example of a superstop located in a similar type of environment is shown in Figure 10.14. Note the striking similarity in the street layout and the design that could be easily and successfully replicated in Rocky Mount.

- **Oakwood Shopping Center area:** Transfers are also expected to be available at Oakwood Shopping Center in the future, where an informal transfer point already exists today. This transfer point's role should expand in near future since East Rocky Mount, an additional route serving the eastern part of Rocky Mount is proposed to be introduced. The existing stops are not in the same location and therefore not ideal as a transfer location. A superstop is therefore also proposed for this area. The search area for the location of a superstop is shown in Figure 10.13.
- **Nash General Hospital:** Transfers are also expected to be available at Nash General Hospital in the future, where three fixed-routes would meet. This transfer point would be very convenient from the user's point of view, since the waiting area could be located inside the lobby of the hospital.
- **Informal transfer points**: There will be other locations where routes meet (for instance at Wal-Mart on Jeffrey's Road or Edgecombe Shopping Center). Although these are not planned with transfers in mind, some riders will benefit from making transfers at these locations, rather than traveling via the main transfer center or a satellite transfer point. The future introduction of electronic fareboxes will make it easier to issue transfer tickets, and this will allow riders to make use of these informal transfer locations.

Figure 10.13 Proposed Satellite Transfer Points

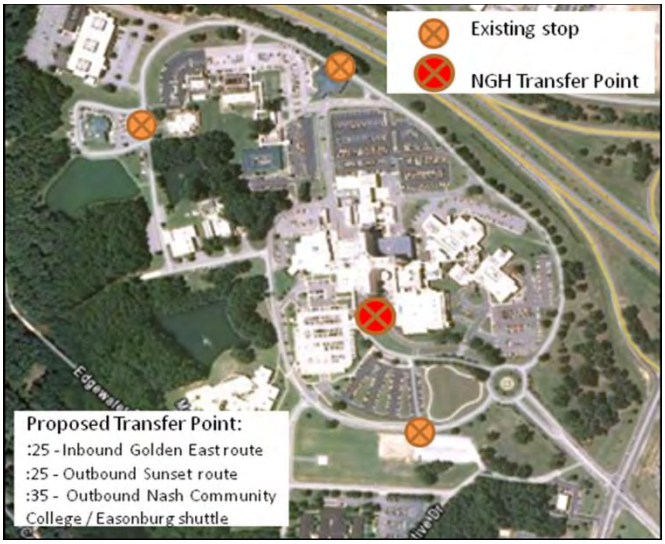


Location 1:

Golden East Crossing Mall

Location 2:

Oakwood Shopping Center



Location 3:

Nash General Hospital

Figure 10.14 Example of a Satellite Transfer Point

Reno, Nevada. Mall entrance is behind camera

SERVICE CONCEPTS: URBAN DEMAND-RESPONSIVE SERVICE IN ROCKY MOUNT (DARTS)

Service Improvement Recommendations

Extended Weekday Evening Service Hours

This option would provide longer weekday evening service – currently DARTS operates until 6:15PM. With the extended hours of service on the fixed-route portion of the Tar River Transit system, DARTS operating hours would have to be extended by two hours in the evening as well – until 8:15PM. This option would particularly address riders' concerns about having to use a taxi to and from evening shifts at employment locations, which can use up much of that day's earnings. Existing vehicles would be used. Additional driver hours would be required and there would be a proportional increase in other operating costs. For planning purposes, it is assumed that the evening operating hours and level of demand would be similar to daytime hours. The net annual operating cost in the first year of implementation (FY2011-12) would be approximately $61,000, with negligible added capital costs. Potential funding sources would include S.5307 Urban Formula Funding and increased local funding on the operating side. In addition, DARTS service could supplement proposed evening fixed-route service, further reducing overall systemwide costs.

Shared Ride Paratransit Feeder Service

Under this scenario, TRT would provide paratransit transit feeder service option for a portion of a trip that lacks accessibility and then would shift passengers to an existing TRT fixed-route bus for the remainder of the trip. To maximize the potential for this type of service, the service area needs to be reviewed for accessibility, a strict paratransit eligibility determination process must be in place, and the agency must have a travel training program. This option would support TRT's efforts to shift paratransit customers from paratransit to fixed-route services. This service would be designed to mirror the fixed-route area of coverage and hours of service. As part of this service and to entice riders to use the fixed-route portion of TRT service, ADA riders using Shared Ride and transferring to an existing TRT fixed-route would be provided with free fares on the latter part of their trip (fixed-route segment).

Overall, demand-responsive feeder service could lower paratransit costs, as vehicle miles and hours of service are reduced and other operating expenses decline. Essentially, some of the existing TRT paratransit demand could be served by this service. In addition to benefiting disabled passengers, accessible stops are also an added benefit to non-disabled passengers, who might be enticed by a bus shelter or concrete pad, the types of transit amenities often requested by regular TRT riders.

Paratransit feeder service would cost approximately $204,000 for an all-day Monday-Friday service annually when it is first implemented in FY 2012-13. Potential funding sources would include targeted competitive grant - S.5317 New Freedom and increased local funding on the operating side. Farebox revenue and potential savings in RGP, DARTS, and ADA-accessible trip costs would likely cover a portion of the costs. Targeted competitive programs such as S.5310, S.5311 and S.5317 could be used for any capital costs (as long as the project is a part of a locally-adopted Coordinated Plan).

Sunday Demand-Responsive Service to/from Retail Areas (reverse-commute focused)

This recommendation is a more targeted, and potentially more cost-effective, way to address Sunday employment travel needs. A demand-responsive service would operate for trips to and from northwestern, western, and eastern Rocky Mount retail areas. It could use the existing (and proposed) Golden East, Sunset, Meadowbrook, and Oakwood fixed-route stops at the employment end, with curbside pick-up and drop-off at riders' residences. This service would meet its own ADA needs. Although open to all riders for all trip purposes, this option is specifically targeted at reverse-commute trips and is therefore potentially eligible for the Job Access and Reverse Commute funds (JARC). The recommended implementation of this proposed service improvement would be FY 2013-14. If the same service span as proposed on Saturday was offered, two vehicles would be required, with an estimated $30,000 in annual operating costs, and negligible capital costs, as this option would utilize existing TRT vans. Potential operating costs' funding sources would include up to a

50 percent federal match from tapping into the S.5316 Jobs Access and Reverse Commute funding in terms of operating costs (50 percent local match would be required) and the same of source of revenue for capital costs (with 80 percent federal, 20 percent local match split).

Grouping of Trips

With assistance from human services transportation providers, TRT could potentially group trips for common destinations during off-peak hours. One option would be to offer a weekly shared-ride transportation service. During a set off-peak time and day, the shopping service would pick passengers up at their homes or certain housing developments for grocery shopping trips. This option would fit TRT model extremely well since there are significant gaps in mid-day ridership on many of its paratransit routes (this finding was also noted and documented in the ITRE's *Performance Plan and Analysis – Tar River Transit* in 2009). This program could be first run on a pilot basis and implemented permanently if proven successful. The recommended implementation of this proposed service improvement would be FY 2013-14, with the annual projected operating cost then estimated at around $15,000. This recommended option would qualify for the Congestion Mitigation and Air Quality (CMAQ) funding (requires a 20 percent local match). Notably, CMAQ funding would be limited to three years. The reduction in deadhead hours coupled with increased farebox revenue could potentially pay for this service alone.

Table 10.2 shows proposed DARTS service improvements in the Study Area.

TABLE 10.2 PROPOSED DARTS SERVICE IMPROVEMENTS

Description	Assumptions								Costs †			Potential funding sources		FY Implementation
DARTS Service Options	Operating	ADA service	Capital	Vehicles	Hours	Days per year	Hours per year	Rate	Annual Operating	% Increase in Cost	Capital	Operating *	Capital	
Existing DARTS Service	FY 2008-09. Weekly service from 6:15pm to 8:15pm Saturday service from 9:15am to 5:15pm	Same vehicles			13	307	4113	$28.14	$115,734					
Proposed Service Improvements														
Evening Weekday service - extended hours	Service automatically extended by 2 hours from 6:15pm to 8:15pm due to Fixed-route service hours extension. Extra 8 service hours per day (2 vehicles, assume 4 hours per day)	Same vehicles	Existing vehicles, negligible capital costs	2	4	255	2,040	$29.85	$60,898	48.2%	Negligible	-- S.5307 - Urban Formula Funding --Fares and billing -- Increased local funding -- Could supplement evening fixed-route service	N/A	2011-12

Shared Ride Paratransit feeder service Monday-Friday	24 service hours per day (2 vehicles, assume 13 operating hours per day).	Same vehicles	Existing vehicles, negligible capital costs	2	13	255	6,630	$30.75	$203,857	156.5%	Negligible	-- S.5317 - New Freedom -- Fares and billing -- Substitute for some TRT demand-responsive service	S.5311, S.5310, S.5317	2012-13
Sunday Demand-Responsive Service to/from Retail Areas (reverse-commute focused)	Assume 2 vehicles required. Assume same service span as today's existing Saturday service	Same vehicles	Existing vehicles, negligible capital costs	2	9	52	936	$31.67	$29,643	22.1%	Negligible	S.5316 - Job Access and Reverse Commute (JARC): up to 50% JARC, 50% local	S.5316 - up to 80% JARC, 20% local	2013-14
Grouping of Trips	Assume 1 vehicle required. Assume 8 revenue hours (9 operating hours) once a week.	Same vehicles	Existing vehicles, negligible capital costs	1	9	52	468	$31.67	$14,822	11.0%	Negligible	-- Congestion Mitigation and Air Quality (CMAQ) -- Fares and billing -- Reduced deadbeat hours	N/A	2013-14

SERVICE CONCEPTS: RURAL GENERAL PUBLIC (RGP) SERVICE IN EDGECOMBE AND NASH COUNTIES

Service Improvement Recommendations

Saturday RGP Service

This option would provide Saturday service that currently does not exist at all in terms of RGP service. Existing vehicles would be used. Additional driver hours would be required and there would be a proportional increase in other operating costs. For planning purposes, it is assumed that the Saturday operating hours and level of demand would be similar to weekdays. This recommendation would be implemented beginning in FY 2010-11. The net cost would be approximately $29,000 annually. Potential funding sources would include S.5311 Rural Formula Funding and increased local funding on the operating side.

Extended Weekday Evening Service Hours

This option would provide longer weekday evening service – currently RGP operates until 5:15pm. With the extended hours of service on the fixed-route portion of the Tar River Transit system, along with extended hours of DARTS service, it would make sense to extend RGP operating hours as well. RGP service would be extended by three hours in the evening until 8:15pm. This option would particularly address riders' concerns about having to use a taxi to and from evening shifts at employment locations, which can use up much of that day's earnings and would enhance mobility for residents of the entire Study Area in the evenings. Existing vehicles would be used. Additional driver hours would be required and there would be a proportional increase in other operating costs. For planning purposes, it is assumed that the evening operating hours and level of demand would be similar to daytime hours. The net annual operating cost in the first year of implementation (FY2011-12) would be approximately $44,000, with negligible added capital costs. Potential funding sources would include S.5311 Rural Formula Funding and increased local funding on the operating side. In addition, RGP evening service could supplement proposed evening fixed-route service, further reducing overall systemwide costs.

Reverse-Commute Service

As shown in Figure 10.15, existing RGP TRT riders are largely concentrated in Rocky Mount, as well as Tarboro and Nashville. The figure also shows available employers in the Study Area, which are again largely concentrated in Rocky Mount and in the US-64 corridor between Nashville, Rocky Mount and Tarboro as well as the US-301 corridor between Battleboro, Rocky Mount and Sharpsburg. S.5316 Jobs Access and Reverse Commute (JARC) targeted competitive program funding could be used by TRT to provide reverse-commute service along those two corridors, as described below. It should be noted that

providing this service would be contingent upon successful securing of JARC funding by TRT.

US-64 East-West Corridor Reverse-Commute Service

This service improvement would be targeted at reverse-commute trips to employment locations along US-64 west to Nashville and east to Tarboro, as shown in

Figure 10.16. However, it would be open to all riders for all trip purposes. One expansion van vehicle would be required. Complementary ADA service would be provided by route-deviation or through the existing rural demand-responsive service. If JARC funds are secured, this service option would be implemented in FY 2013-14. If the same service span as existing weekday hours was offered, this option would cost TRT an estimated $104,000 in annual operating costs, and $104,000 in capital costs (for acquiring one extra van). Potential operating costs' funding sources would include up to 50 percent federal match from tapping into the S.5316 Jobs Access and Reverse Commute funding in terms of operating costs (50 percent local match would be required) and the same of source of revenue for capital costs (with 80 percent federal, 20 percent local match split).

US 301 Bypass/NC 97 North-South Corridor Reverse-Commute Service

Akin to the purpose of the option described above, this service recommendation would be targeted at reverse-commute trips to employment locations – with the exception that this specific improvement would service areas west along US-301 beginning either in Battleboro or the NC Wesleyan College along US 301 Bypass/North Wesleyan Boulevard (including Golden East Crossing Mall and Wal-Mart stops) to Rocky Mount and then continued service to either Sharpsburg (service along US 301) or Wilson Regional Airport (service along NC 97) and would be a potential candidate for JARC funding as well. However, it would be open to all riders for all trip purposes. Although the systemwide schedule includes some service along this corridor within the City of Rocky Mount limits, JARC funds could be used to expand or enhance the service. Since this service would serve many of the existing stops along the Battleboro/Goldrock, that shuttle service could potentially be discontinued. One expansion vehicle would be required. Complementary ADA service would be provided by route-deviation or through the existing rural demand-responsive service. If JARC funds are secured, this service option would be implemented in FY 2014-15. If the same service span as existing weekday hours was offered, this option would cost TRT an estimated $103,000 in annual operating costs, and 107,000 in capital costs (for acquiring one extra van). Potential funding sources would include up to 50 percent federal match from tapping into the S.5316 Jobs Access and Reverse Commute funding in terms of operating costs (50 percent local match would be required) and the same of source of revenue for capital costs (with 80 percent federal, 20 percent local match split). Table 10.3 shows proposed RGP service improvements in the Study Area.

Figure 10.15 RGP Riders Residences vs Available Employers

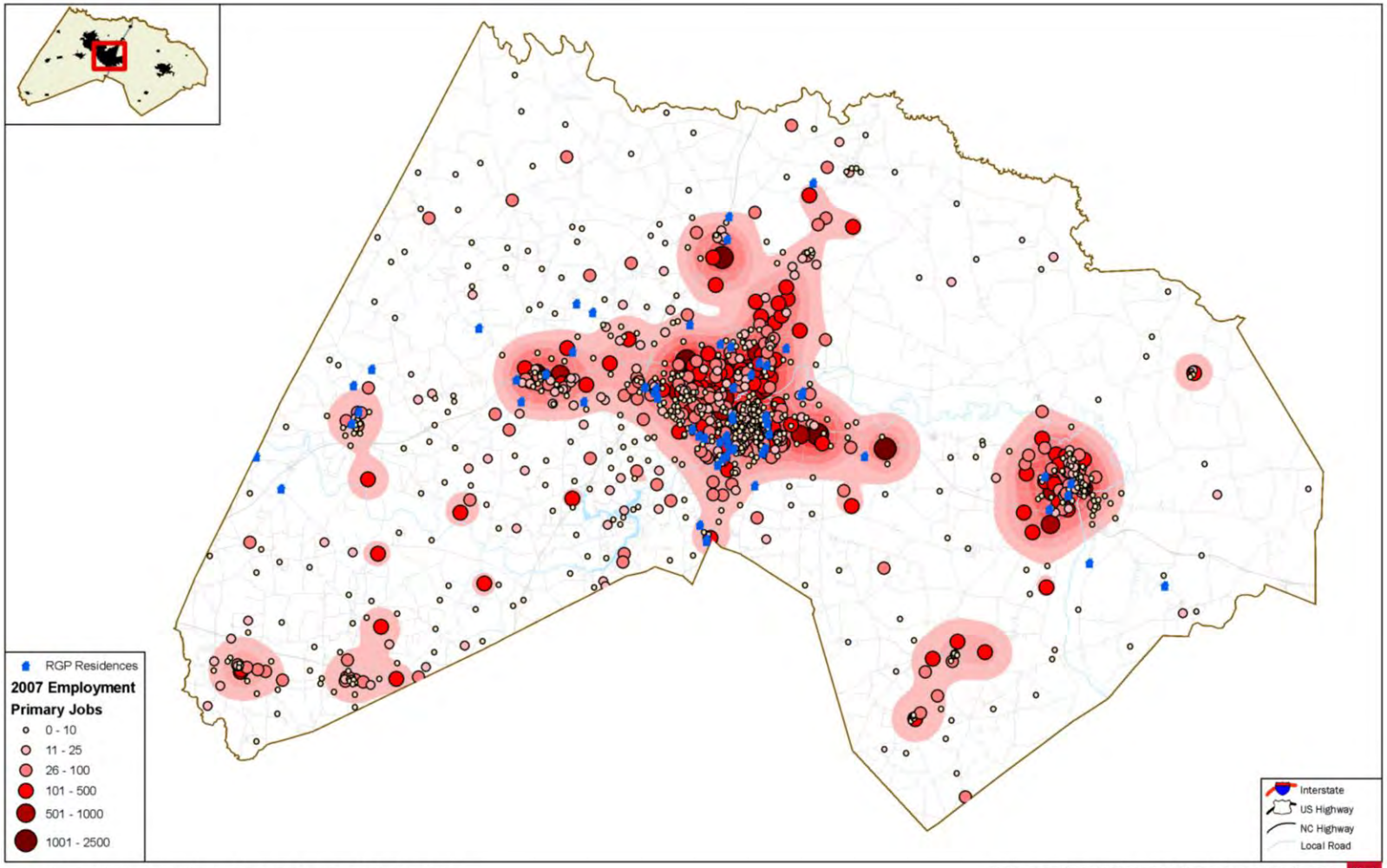


Figure 10.16 Proposed US 64/US 301 Reverse-Commute Service

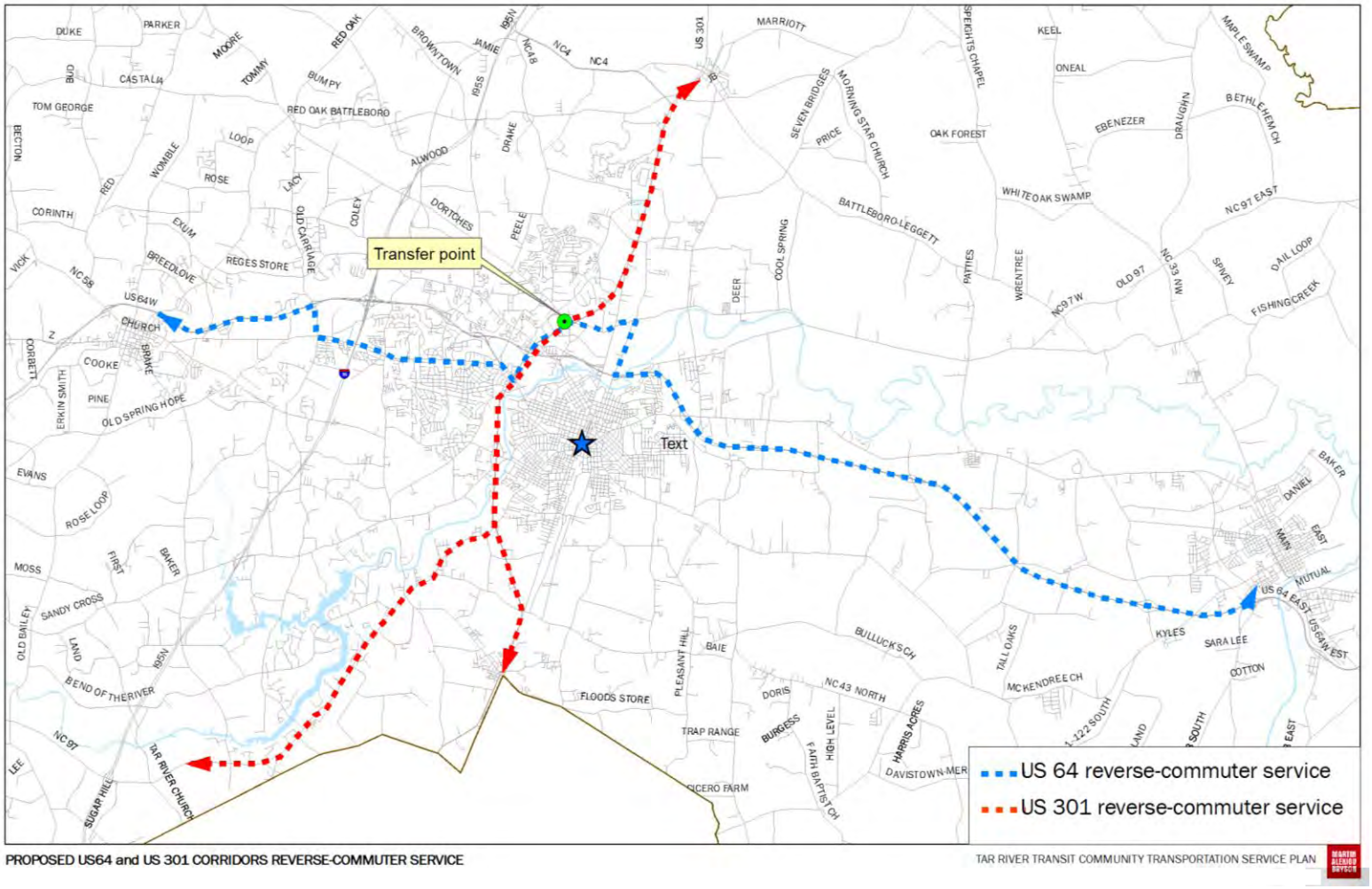


TABLE 10.3 PROPOSED RGP SERVICE IMPROVEMENTS

Description	Assumptions								Costs †			Potential funding sources		FY Implementation
RGP Service Options	Operating	ADA service	Capital	Vehicles	Hours	Days per year	Hours per year	Rate	Annual Operating	Capital	% Increase in Cost	Operating *	Capital	
Existing RGP Service	FY 2008-09			2	10	255	2550	$26.89	$68,570					
Service Options:														
Extended Hours of Service:														
Saturday RGP service	Same hours as Monday-Friday. 20 service hours per day (2 vehicles, assume 10 hours per day)	Same vehicles	Existing vehicles, negligible capital costs	2	20	52	1,040	$27.70	$28,807	Negligible	39.6%	-- S.5311 - Rural Formula Funding --Fares and billing -- Increased local funding	N/A	2010-11
Evening Weekday service - extended hours	Service extended by 3 hours from 5:15pm to 8:15pm. Extra 3 service hours per day (2 vehicles, assume 3 hours per day)	Same vehicles	Existing vehicles, negligible capital costs	2	3	255	1,530	$28.53	$43,651	Negligible	58.3%	-- S.5311 - Rural Formula Funding -- Fares and billing -- Increased local funding -- Could be a substitute for evening fixed-route service	N/A	2011-12
Reverse-Commute Service:														

US-64 East-West Corridor Reverse-Commute service	Fixed-route or route-deviation service for same service span as today's fixed-route network (12 revenue hours, 13 operating hours)	Route-deviation by this vehicle, or else existing ADA service	One expansion vehicle - van or cutaway	1	13	255	3,315	$30.27	$100,336	$104,335	126.2%	S.5316 - Up to 50% JARC, 50% local. S.5311 - up to 50%, 50% local	up to 80% JARC, 20% local. S.5311 - up to 80%, 10% local, 10% state	2013-14
US-301/NC 97 North-South Corridor Reverse-Commute service	Fixed-route or route-deviation service for same service span as today's fixed-route network (12 revenue hours, 13 operating hours)	Route-deviation by this vehicle, or else existing ADA service	One expansion vehicle - van or cutaway	1	13	255	3,315	$31.18	$103,347	$107,465	130.0%	S.5316 - Up to 50% JARC, 50% local. S.5311 - up to 50%, 50% local	up to 80% JARC, 20% local S.5311 - up to 80%, 10% local, 10% state	2014-15

SERVICE CONCEPTS: ADA PARATRANSIT SERVICE IN EDGECOMBE AND NASH COUNTIES

Service Improvement Recommendations

Extended Weekday Evening Service Hours

This option would provide longer weekday evening service – currently demand-responsive ADA service operates until 5:30pm. With the extended hours of service on the fixed-route portion of the TRT system, along with extended hours of DARTS and RGP services, it would only make sense to also extend ADA Paratransit operating hours. ADA Paratransit service would be extended in the evening by three hours until 8:30pm. Existing vehicles would be used. Additional driver hours would be required and there would be a proportional increase in other operating costs. For planning purposes, it is assumed that the evening operating hours and level of demand would be similar to daytime hours. The net annual operating cost in the first year of implementation (FY2011-12) would be approximately $44,000, with negligible added capital costs. Potential funding sources would include S.5311 Rural Formula Funding and increased local funding on the operating side. In addition, this expansion of evening service could help supplement proposed evening fixed-route service, further reducing overall systemwide costs.

Provide Saturday Service

This option would provide Saturday service that currently does not exist at all in terms of ADA Paratransit service. Existing vehicles would be used. Additional driver hours would be required and there would be a proportional increase in other operating costs. For planning purposes, it is assumed that the Saturday operating hours and level of demand would be similar to weekdays. The net annual operating cost in the first year of implementation (FY2013-14) would be approximately $34,000, with negligible added capital costs. Potential funding sources would include S.5311 Rural Formula Funding and increased local funding on the operating side. In addition, this expansion of Saturday service could help supplement existing Saturday fixed-route and RGP service, further reducing overall systemwide costs.

TABLE 10.4 PROPOSED ADA SERVICE IMPROVEMENTS

Description	Assumptions							Costs †			Potential funding sources		FY Implementation
ADA Paratransit Service Options	Operating	Capital	Vehi-cles	Hou-rs	Days per year	Hours per year	Rate	Annual Operating	% Increase in Cost	Capital	Operating *	Capital	
Exisiting ADA Paratransit Service	FY 2008-09			191	255	48,817	$26.89	$1,244,227					
Service Options													
Evening Weekday service - extended hours	Service extended by 3 hours from 5:30pm to 8:30pm. Extra 6 service hours per day (2 vehicles, assume 3 hours per day)	Existing vehicles, negligible capital costs	2	3	255	1,530	$28.53	$43,647	3.2%	Negligible	-- Fares and billing -- Increased local funding	N/A	2011-12
Saturday Service	Service from 6:15am to 5:30pm. Extra 23.5 daily service hours (2 vehicles, assume 11 3/4th hours per day)	Existing vehicles, negligible capital costs	2	12	52	1,222	$27.70	$33,848	2.3%	Negligible	-- Fares and billing -- Increased local funding	N/A	2013-14

11. FUNDING SOURCES – FUTURE OUTLOOK

Federal and State Funds

TRT receives Federal Transit Administration (FTA) funds through the North Carolina Department of Transportation (NCDOT). NCDOT also provides matching State funds for many capital, operating, planning and administrative expenditures, in some cases the full non-Federal share. In Federal Transit funding, there is a distinction between large urban areas (populations above 200,000), small urban areas (populations from 50,000 to 200,000) and rural areas. TRT serves both a small urban area (the Rocky Mount urban area, as defined by the Census Bureau) and a rural area (the remainder of The Study Area), and is therefore eligible for the funding sources in these two categories. The following description of project categories and FTA funding programs is not exhaustive, but augments NCDOT guidance and describes types of projects for which TRT could pursue funding. A summary table is also provided. This includes funding sources already used by TRT, as well as others that could be pursued in the future.

It should be noted that in general, TRT is currently making good use of the available Federal and State funds for operating costs as well as regular capital costs. TRT could also apply for the state-administered competitive funds, which are described in more detail below. These competitive funds include S.5310 Elderly and Persons with Disabilities program, S.5316 JARC and S.5317 New Freedom programs. These would need to involve specific projects that are in line with each program's eligibility criteria. For example, a reverse-commute service to employment locations along US-64, or Sunday service to employment locations, could be eligible for JARC funding. TRT could also explore S.5311(f) inter-city bus and rural feeder service funding. This funding is distributed through NCDOT's Regional and Intercity Program, which includes additional NCDOT funds. The Piedmont Authority for Regional Transportation's (PART's) twice-daily fixed-route service between Boone and Greensboro is an example of service funded under this program. The program could be used to support scheduled service between Rocky Mount and the Triangle or other cities in eastern North Carolina, or feeder service between Rocky Mount and other towns in the Study Area. There is little prospect of a viable s.5309 New Starts project within this five-year plan period. TRT's ridership levels are not suitable for a Very Small Starts project.

Since most Federal and State funding programs require local contributions, TRT will need to identify new local funding to expand service. The local sources described in more detail below could be used as the local match, standalone funding sources, or a combination of both. In other words, the local sources could leverage additional Federal and State funding.

Activities Eligible for Funding

Capital Projects

FTA's definition of a capital project is expansive. It includes not only buildings, vehicles and other major equipment, but also less obvious items such as preventive maintenance, technology purchases and mobility management. Table 11.1 lists examples of capital items.

Typically, the FTA funds up to 80 percent of the cost of capital projects. Certain expenses are eligible for 90 percent federal funding, including improvements to bicycle access to transit and equipment required for either ADA or Clean Air Act Amendment compliance. When purchasing new buses, a funding applicant may either itemize elements eligible for the 90-percent capital share or opt to receive a "blended" funding share of 83 percent. NCDOT will fund up to one-half of the remaining cost.

TABLE 11.1 EXAMPLES OF CAPITAL PROJECTS FTA FUNDS
• Vehicles: bus overhauls and replacements, fleet expansions, onboard communications and fare collection equipment, preventive maintenance, supervisory vehicle purchases, equipment such as wheelchair lifts and ramps to support compliance with the Americans with Disabilities Act (ADA). • Facilities: maintenance facility rehabilitation and construction, bus stop sign and shelter purchases and installation, transit center construction. Transit elements of joint-development projects, and bicycle or pedestrian access to facilities, are also eligible for federal funding. • Technology: intelligent transportation systems (ITS), such as automatic vehicle location (AVL), automatic passenger counters (APCs) and computer-aided dispatching (CAD) systems; computer and software purchases that support operations. • Bicycle racks on vehicles, bicycle parking at transit centers and other treatments to improve bicycle access to transit. • Mobility management, which consists of strategies to expand service availability through improved coordination among public and other transportation service providers. Strategies include: o Establishment of joint call centers through which travelers can receive information about or make reservations for multiple providers' services. o Planning and implementation of coordinated services. o Provision of individualized travel training and trip planning services through employer-based groups or human service organizations. o Service coordination through technological upgrades, such as shared geographic information systems (GIS) mapping, global positioning systems, vehicle scheduling systems and other ITS components. o Operation of ADA-mandated complementary paratransit service, provided that the agency's fixed-route and paratransit operations are fully ADA compliant. o Purchase of private bus operators.

Operating Expenses

FTA programs fund up to 50 percent of net operating costs, i.e., operating revenues subtracted from operating costs, with NCDOT providing additional funding for certain rural services. Operating revenues include fares and pass sales. Operating costs include fuel, drivers' and dispatchers' wages and benefits, licenses, vehicle maintenance and insurance.

Planning Activities

Planning activities include technical studies aimed at improving transit facilities, equipment or service. The studies may focus on all or part of a transit agency. Eligible areas of study include management, such as the efficiency of administrative or operating procedures; operations, including service evaluation and restructuring; and identification of service or capital needs. Alternatively, planning activities may be project-specific, including evaluations of previously funded projects, economic feasibility studies for proposed projects and detailed

design work for capital projects, such as preparation of engineering and architectural surveys, plans and specifications. FTA will fund up to 80 percent of the cost of a planning activity; NCDOT will fund up to 10 percent of the cost of studies in urbanized areas and 10 to 20 percent of the cost of studies in rural areas, depending on the scope.

Key Funding Programs

Various FTA and NCDOT funding programs support the activities described above, though not all programs support all categories of activity. The most general FTA programs are split by geography, with one (Section 5307) applicable to urban areas and another (Section 5311) to rural areas. Other programs are confined to particular categories of activity (i.e., capital projects only) or activities targeted toward certain populations.

Each FTA program is briefly described below with examples of applicable projects. Applicable or comparable NCDOT programs are described under the FTA program headings. For small urban and rural areas, most FTA funding is channeled through NCDOT, which in some cases adds its own funds to programs. For this reason, the FTA and NCDOT funding streams are described together.

Section 5307 – Urbanized Area Formula Program

This program funds capital projects, planning activities and administrative costs in urbanized areas. Section 5307 funds may also support operations in urbanized areas with populations of no more than 200,000. Thus, most expenses related to the Rocky Mount portion of TRT's services are eligible for funding under this program. Unlike other programs described below, this program does not emphasize projects that benefit certain segments of the population or pertain to specific types of service.

Capital funds from this program are typically applied to bus, transit center and advanced technology-related projects, with combined FTA and NCDOT funds supporting up to 90 percent of project costs. For operating assistance, Section 5307 funds support NCDOT's State Maintenance Assistance Program (SMAP), which pays approximately 50 percent of urbanized area transit agencies' eligible operating costs; TRT is a grantee of this program. Section 5307 funds are apportioned by formula such that each large urbanized area and state receives a certain amount of funds based on population, population density, transit revenue miles and other factors – in other words, the funds are not limitless.

Section 5311 – Nonurbanized Area Formula Program

The Section 5311 program is the rural equivalent of the Section 5307 program; consequently, TRT can obtain these funds for capital, operating, planning and administrative expenses related to The Study Area service. NCDOT bundles Section 5311 funds into its Community Transportation Program (CTP), which provides up to 90 percent of capital costs, 85 percent of administrative costs and 50 percent of operating costs. TRT is a recipient of CTP funds.

Section 5311 funds are allocated to each state by a formula that considers nonurbanized population and land area relative to those of all states. Certain rapidly growing states are eligible for additional funds. Outside of the general purposes described above, certain percentages of each state's Section 5311 funds must be allocated to training (not described here) and intercity bus service (described separately below).

Section 5309 – Capital Investment Program – Bus and Bus-Related Facilities[1]

Section 5309 funds are for capital projects in urbanized areas, particularly projects that represent extraordinary, one-time needs or are part of high-priority regional or local initiatives. Bus transfer facilities are typically constructed with funds from this program. Funds will support inclusion of design and artistic elements, construction of pedestrian and bicycle connections and renovations of historic buildings so long as these are integral to a project.

Combined FTA and NCDOT funds will cover up to approximately 90 percent of the costs associated with Section 5309-funded projects. Section 5309 funds are heavily earmarked by Congress to particular projects and purposes. FTA allocates any remaining funds on a discretionary basis.

Section 5310 – Elderly and Persons with Disabilities Program

The Elderly and Persons with Disabilities Program (Section 5310) funds projects and services that improve mobility for senior citizens and people with disabilities. The primary funding recipients are private, non-profit organizations that serve the particular transportation needs of these populations. However, a public transit agency may receive funding under limited circumstances: it must either certify that no private organizations exist to provide specialized service or must be designated by NCDOT and local jurisdictions as the lead coordinator of human-service transportation programs.

Most Section 5310 funds support capital projects. The mobility management strategies are eligible for funding, as are vehicles and related equipment. Projects selected for funding under the Section 5310 program must be derived from a locally developed and coordinated human services transportation plan, as TRT has adopted. As per the Section 5307 and 5311 programs, Section 5310 funds are distributed by formula. Each state receives funding based

[1] The Capital Investment Program contains two other components: Fixed Guideway Modernization, which funds maintenance of and enhancements to rail systems and other transit systems that operate on dedicated rights-of-way; and the New Starts/Small Starts Program, which funds construction of new or expanded fixed-guideway and bus rapid transit systems. Fixed Guideway Modernization funds are allocated to regions with fixed-guideway transit systems via a formula. New Starts funds are allocated competitively.

on its populations of elderly and people with disabilities. However, unlike the 5307 and 5311 programs, Section 5310 funds are allocated competitively within the state.

Section 5311f – Intercity Bus Program

The Intercity Bus Program (Section 5311f) funds support operation of rural intercity bus services as well as "feeder" services that provide connections to intercity bus stops from surrounding rural areas. NCDOT must either allocate 15 percent of its statewide Section 5311 funding to this program or certify that sufficient rural intercity bus service exists to meet the residents' needs. The funds are intended foremost for private operators, though some North Carolina public transit agencies have implemented rural intercity routes along corridors that private carriers have declined to serve.

Capital projects eligible for Section 5311f funding include vehicle purchases for rural intercity or feeder service and depots and transfer centers that will be served jointly by transit and intercity operators. Operationally, intercity bus service (per FTA's definition) connects two distant urban areas, operates on a regular schedule and fixed route with limited stops, has capacity for luggage transport and provides "meaningful" connections with scheduled intercity service to more distant points. Feeder service may take more diverse forms and be as simple as an extension of hours on existing services to provide timed connections with intercity trips.

NCDOT provides up to 50 percent of the cost associated with operating intercity bus or rural feeder service as part of its Regional and Intercity Program. Services funded by this program include the Piedmont Authority for Regional Transportation's twice-daily fixed-route service between Boone and Greensboro via Winston-Salem, Yadkinville and Wilkesboro. The Regional and Intercity Program also supports Travelers' Aid programs that assist homeless, stranded or indigent individuals in obtaining intercity bus fares.

Section 5316 – Job Access and Reverse Commute Program

The Job Access and Reverse Commute (JARC) Program serves two primary goals: (1) reducing low-income individuals' and welfare recipients' transportation barriers to employment, training and job support services; and (2) increasing transit service for all populations to suburban employment. JARC-funded services may therefore include new shuttle routes that serve worksites directly, expanded demand-response van service in low-density employment areas, extended evening and weekend service hours to serve employees whose shifts do not coincide with typical peak commute times, and new express routes to

suburban job concentrations[2]. Purchases of vehicles to operate these services, bus stop improvements (such as waiting shelters and upgraded lighting at job site bus stops) and other capital projects that support the program's goals may be funded.

The JARC program also supports transportation options outside of a transit agency's typical scope of operations. For instance, guaranteed ride home programs that reimburse passengers for alternate transportation home (most commonly taxi rides) in case of personal emergencies may be funded. Voucher programs that enable low-income individuals to purchase rides through human service or taxi providers and loan programs that allow individuals to acquire automobiles for ridesharing purposes are also eligible projects.

Standard FTA funding shares apply for this program: 80 percent for capital projects and planning activities and 50 percent for operating costs. As with Section 5310, projects funded through the JARC program must be derived from a locally developed and coordinated human services transportation plan, and funding is allocated competitively. NCDOT does not provide matching funds for this program, though Temporary Assistance for Needy Families (TANF) funds allocated to the State constitute one potential funding source.

Section 5317 – New Freedom Program

The New Freedom Program (Section 5317) aims to reduce transportation barriers for people with disabilities to enter the workforce and participate in societal activities. Consequently, the program supports new, ADA-surpassing Transit services, accessibility improvements and employment-related transportation alternatives.[3] New Freedom funds could be applied to enhancements to complementary ADA paratransit service, for instance, such as expansion of service beyond the mandated ¾-mile fixed-route buffer, extension of service hours, or provision of same-day service. Feeder service to intercity bus or rail stations is also eligible for New Freedom funding, given that intercity services do not carry complementary paratransit requirements. New Freedom funds cannot otherwise be used to expand coverage, hours, or days of general-public service.

Eligible capital projects under the New Freedom program include vehicle accessibility improvements, such as the purchase of wheelchair lifts that can accommodate larger or heavier mobility aids than those required by ADA. In addition, treatments to remove accessibility barriers to bus stops, such as the construction of ADA-compliant sidewalks, curb cuts and pedestrian signals, may be funded. New public transportation alternatives that

[2] Typically, JARC funds support the start-up of such services, with a transit agency or other funding partners expected to assume responsibility for operating costs once the grants expire.

[3] Any project that was operational or funded as of August 10, 2005 is not considered "new" and is therefore ineligible for New Freedom funding.

are eligible for New Freedom funding include voucher programs for people with disabilities similar to those described above for low-income individuals. Mobility management strategies, as detailed above in the Capital Projects section, are also consistent with the New Freedom program's intent of improving travel options for people with disabilities.

Standard FTA funding shares apply for this program: 80 percent for capital projects and planning activities and 50 percent for operating costs. As with Sections 5310 and 5316, projects funded through the New Freedom program must be derived from a locally developed and coordinated human services transportation plan, and funding is allocated competitively. NCDOT does not provide matching funds for this program. A project may be funded through the New Freedom program indefinitely (i.e., receive successive New Freedom grants) provided that it remains in the human services transportation plan. However, NCDOT encourages applicants to identify other funding sources that could be applied following expiration of the initial grant.

Congestion Mitigation and Air Quality

Both Edgecombe and Nash Counties have recently become eligible for Congestion Mitigation and Air Quality (CMAQ) funding – in other words, the Study Area has been one of the areas in the U.S. in non-compliance with federal air quality standards. The program strives to reduce transportation-related emissions by providing State DOTs and local governments options to fund different emission reduction strategies. The money must be spent on projects that reduce ozone (O3) precursors. Three broad categories of transit projects or programs are eligible for funding: service or system expansion; provision of new transit service; and financial incentives to use existing transit services. Routine maintenance and rehabilitation of existing facilities are ineligible for CMAQ funding. Project proposals in North Carolina are subject to a minimum cost threshold of $100,000.

Standard FTA funding shares apply for this program: 80 percent for capital projects and planning activities and 50 percent for operating costs. NCDOT does not provide matching funds for this program. However, it should be noted that CMAQ funding is only available for the first three years of the implemented given project and there is a gradual decrease in federal match with the passing years.

Surface Transportation Program

Federal transportation funding legislation includes several other programs that are not transit-specific but whose funds may be spent on transit-related activities. For instance, the Surface Transportation Program (STP) funds that the Federal Highway Administration distributes to the Rocky Mount MPO may be spent on capital projects related to many modes of transportation, including public transit. The transit and intercity bus capital projects described above are therefore eligible for STP funding, as are pedestrian and bicycle facilities that enhance access to transit. In practice, STP funds are often allocated primarily

to roadway projects, as is the case in the Rocky Mount MPO's current Transportation Improvement Program (TIP). Given the flexibility of STP funds, however, roadway projects can (and should) include sidewalks, crosswalks and other transit-supportive infrastructure.

Stimulus Funds – the American Recovery and Reinvestment Act

Tar River Transit has received $992,000 in funding from the American Recovery and Reinvestment Act (ARRA), also known as the "stimulus package" – via the Federal Transit Administration (FTA). The following are the approved TRT ARRA projects (notably, all of them are ARRA urban projects – there are no Rural ARRA projects for Tar River Transit):

1. Purchase two 25 foot light transit vehicles - $180,000.00
2. Acquire shop equipment for fleet maintenance - $90,000.00
3. Acquire routine capital items, (bus shelters, bus cameras, fareboxes) and preventive maintenance expenses - $538,000.00
4. Purchase existing facility - $160,000.00
5. Bus station renovation - $24,000.00

Other New Opportunities for Accelerating Proposed Service Improvements

TRT is in a good position to potentially accelerate some of the service improvements proposed in this CTSP thanks to more funding opportunities that have recently been made available by the Federal Transit Administration (FTA), namely the State of Good Repair (SGR) initiative, Transit Investments for Greenhouse Gas and Energy Reduction (TIGGER) Program and Clean Fuels Grant Program. TRT can also benefit from the extension of the application deadline for the S.5310, S.5316, and S.5317 competitive grants. The SGR Bus initiative makes funds available to public transit providers to finance capital projects to replace, rehabilitate, and purchase buses and related equipment and to construct/rehabilitate bus-related facilities. TIGGER grants purpose is for capital investments that will assist in reducing the energy consumption of a transit system, or for capital investments that will reduce greenhouse gas emissions of a public transportation system. A summary of these programs is included in table 11.2.

TABLE 11.2 SUMMARY OF MAIN FEDERAL AND STATE FUNDING SOURCES

Urban or Rural

Program		Basic intent	Original source	Who adminis-ters?	How allocated?	Who ultimately receives?	For operating costs?	For capital costs?	Maximum federal share	NCDOT share	Local share	Flexibility	Other notes
Federal Capital Investment Program	§5309 Capital Investment Program - Bus and Bus-Related Facilities	Capital investment	Federal taxes	FTA	Most funds are earmarked by Congress to specific projects. Remaining funds are distributed competitively by FTA.	Transit agencies	No	Yes	80%	10%	10%		Most common funding source for new vehicles, multimodal centers, transfer points, maintenannce depots.
	§5309 Capital Investment Program - New Starts	New or extended fixed guideway systems (rail light rail, streetcar, BRT, etc) or corridor-based bus projects	Federal taxes	FTA	Competitively by FTA	Transit agencies	No	Yes	Nominally 80%. In practice, lower share offers better change of funding	Up to half of non-federal share	Remainder of non-federal share	None. Funding is for specified projects.	
Targeted Competitive Programs	§5310 Elderly & Persons with Disabilities	Improving mobility for elderly and disabled people	Federal taxes	State	To states by formula, then competitively within states	Usually private non-profits, but can be transit agency	See notes	Yes	80% for capital, 50% for operating	None	Entire non-federal share		Projects must be in a locally-adopted Coordinated Plan in order to qualify Mainly intended for capital costs. Federal law allowed NC to use 1/3 of these funds for operating costs through 2009
	§5316 Job Access & Reverse Commute (JARC)	(a) reduce barriers to employment and training for low-income people, and (b) improve access to suburban employment for everyone	Federal taxes	State	To large urban areas or states by formula, then competitively within large urban areas or states	Transit agencies (also nonprofits)	Yes	Yes	80% for capital, 50% for operating	None	Entire non-federal share		Projects must be in a locally-adopted Coordinated Plan in order to qualify
	§5317 New Freedom	Reduce barriers to employment and societal activities for disabled people	Federal taxes	State	To large urban areas or states by formula, then competitively within large urban areas or states	Transit agencies (also nonprofits)	Yes	Yes	80% for capital, 50% for operating	None	Entire non-federal share		Projects must be in a locally-adopted Coordinated Plan in order to qualify. Project can be funded indefinitely from New Freedom, but NCDOT encourages agencies to look for other permanent funding.
Public Transportation Grant Program		Miscellaneous	State taxes	State		Transit agencies	See note	See note					Covers specific projects including (a) Apprentice and Interm Programs and (b) TDM Programs)
Surface Transportation Program		Transportation (in general)	Federal taxes	FHWA	By formula to states, then by formula to MPOs, then to projects by MPOs	MPOs							Still often considered to be 'highway funds', but in fact can be used for transit too. Statewide prioritization program about to change
Congestion Mitigation and Air Quality (CMAQ)		Strives to reduce transportation-related emissions by providing State DOTs and local governments options to fund different emission reduction strategies. The money must be spent on projects that reduce ozone (O3) precursors	Federal taxes	FHWA & FTA	FHWA to NCDOT NC DOT: –retains funds and decision making; OR –allocates to MPOs according to apportionment formula; OR –allocates to MPOs by some other formula	MPOs	Yes	Yes	Typically 80% and available for first 3 years with gradual decrease in federal match	None	Entire non-federal share		Three broad categories of transit projects or programs that are eligible for funding: service or system expansion; provision of new transit service; and financial incentives to use existing transit services. Routine maintenance and rehabilitation of existing facilities are ineligible for CMAQ funding. Project proposals will be subject to a Minimum cost threshold of $100,000 in NC.
American Recovery Reinvestment Act (ARRA)		Strives to reduce transportation-related emissions by providing State DOTs and local governments options to fund different emission reduction strategies. The money must be spent on projects that reduce ozone (O3) precursors	Federal taxes	FHWA & FTA	FHWA to NCDOT NC DOT: –retains funds and decision making; OR –allocates to MPOs according to apportionment formula; OR –allocates to MPOs by some other formula	MPOs	Yes	Yes	50% for capital, 100% for operating	None	Entire non-federal share		TRT received $992 million in ARRA funds

Urban

Program		Basic intent	Original source	Who adminis-ters?	How allocated?	Who ultimately receives?	For operating costs?	For capital costs?	Maximum federal share	NCDOT share	Local share	Flexibility	Other notes
§5303 Metropolitan Planning		Planning activities of MPOs. Projects must be a part of the adopted Unified Planning Work Program (UPWP).	Federal taxes	FTA. State administers in small urban areas.	By formula to states, then by state-approved formula to urban areas. See notes	MPO (Rocky Mount Area MPO)	Yes (in small urban areas)	Yes	80% for capital, 50% for operating	Up to half of non-federal share. Typically 10% for capital, 25% for operating	Remainder of non-federal share. Typically 10% for capital, 25% for operating		Funds are apportioned by a complex formula to states that includes consideration of each state's urbanized area population in proportion to the urbanized area population for the entire nation, as well as other factors. States can receive no less than .5 percent of the amount apportioned. These funds, in turn, are sub-allocated by states to MPOs by a formula that considers each MPO's urbanized area population, their individual planning needs, and a minimum distribution.
§5307 Urban Formula Funding		Operating costs of urban systems. Also capital costs in small urban areas	Federal taxes	FTA. State administers in small urban areas.	By formula to states, then by state-approved formula to urban areas. See notes	Transit agency	Yes (in small urban areas)	Yes	80% for capital, 50% for operating	Up to half of non-federal share. Typically 10% for capital, 25% for operating	Remainder of non-federal share. Typically 10% for capital, 25% for operating		For small urban areas (50,000-200,000), formula only includes population and population density. For large urban areas (>200,000), formula also includes service level and productivity measures. Small urban areas are also eligible for the Small Transit-Intensive Cities (STIC) set-aside, which gives additional funding to systems with above-average performance on certain measures.
State Maintenance Assistance Program (SMAP)		Operating costs of urban systems	State taxes	NCDOT	By formula - partly related to performance and to local funding amount	Transit agency	Yes		N/A	50%	50%		

Rural

Program		Basic intent	Original source	Who adminis-ters?	How allocated?	Who is typically the ultimate recipient?	For operating costs?	For capital costs?	Maximum federal share	NCDOT share	Local share	Flexibility	Other notes
Community Transportation Program	§5311 Rural Formula Funding	Rural transit	Federal taxes	State	To states by formula, then within states by formula	Rural transit agencies	Yes	Yes	80% for capital and administrative, 50% for operating	5% for administrative, 10% for capital, nil for operating	15% for administrative, 10% for capital, 50% for operating	Inherently flexible - this is a general-purpose funding stream	5311(f) Inter-City Bus Program. See separate details. 15% allocation OR certification that it's not needed.
	Rural Capital Program	Capital costs of rural transit	Combination of federal and state taxes	State		Rural transit agencies			90% combination of federal and state	90% combination of federal and state	10%		NOT APPLICABLE TO CONSOLIDATED URBAN/RURAL COUNTY SYSTEMS SUCH AS TRT
	Human Service Transportation Management Program	Administrative costs of human service transportation	State taxes	State		Rural transit agencies			N/A	85%	15%		NOT APPLICABLE TO CONSOLIDATED URBAN/RURAL COUNTY SYSTEMS SUCH AS TRT
Rural Operating Assistance Program (ROAP) (these three programs are administered under a single ROAP applitaion package)	Elderly and Disabled Transportation Assistance Program (EDTAP)	Funds of last resort' for trips for elderly and disabled people	State taxes	State, then County	To counties by formula. County then distributes at its discretion	Human service agencies (who can then pay transit agency for trips)	Yes (fully-allocated cost of trips)	No	None	100%	None	Cannot be transferred	Can be used as local match for federal operating funds
	Employment Transportation Assistance Program (ETAP) (also known as EMPL)	Employment trips for low-income people	State taxes	State, then County	To counties by formula. County then distributes at its discretion	Human service agencies (who can then pay transit agency for trips)	Yes (fully-allocated cost of trips)	No	None	100%	None	Can be transferred to EDTAP or RGP if not needed for EMPL	Can be used as local match for federal operating funds
	Rural General Public (RGP)	Anyone not covered by other specific programs	State taxes	State, then County	To counties by formula. County then distributes at its discretion	Transit agency	Yes (fully-allocated cost of trips)	No	None	90%	10% (can be combination of fares and subsidy)	Cannot be transferred	Use for riders whose trips are not funded by other means Can be used as local match for federal operating funds

This table is a simplified summary of the most relevant Federal and State transit funding streams. It does not attempt to include every potential source, nor every detail of each program. Many programs have extensive eligibility requirements. Also excluded are some programs not applicable to this agency, including: Clean Fuels Grant Program (s. 5308), Fixed Guideway Modernization (s. 5309), and Paul S. Sarbanes Transit in Parks Program (s. 5320)

Local Funding

Local funding is dependent on the combination of political priorities and the available municipal revenues, and could rise or fall accordingly. TRT is currently fortunate to have enough funding to provide a full Rural General Public service; not all counties provide this level of funding and so not all agencies can provide this full service.

General Fund Contributions

Numerous cities, counties and states support transit systems, in part through general fund contributions. The Study Area's counties and the City of Rocky Mount currently provide General Fund contributions to TRT. Increased general fund contributions from local jurisdictions, either through tax or fee increases or budget reallocations, can allow a transit agency to obtain increased state and federal funds to expand service or undertake capital projects.

New General Fund contributions from other towns in the Study Area could be used to improve service to/from or within those towns, as well as to provide bus stop infrastructure where fixed-routes operate.

Recently-Authorized Funding Options

State legislation has introduced two new transit funding options at the county-by-county level in 2009. The proposal, the North Carolina General Assembly House Bill number 148, passed in August 2009. The legislation has different rules for different counties. For the Study Area, the two new options are a 0.25 percent sales tax and a vehicle registration tax of up to $7. Within each county, the revenue would be distributed to the municipalities that operate transit systems and to the county if it operates a transit system. In the Study Area, this would currently include both Edgecombe and Nash county and the City of Rocky Mount, as the partners in TRT.

Sales Tax

Sales taxes are frequently used to fund transit systems in urban areas. Until 2009, Mecklenburg County was the only county in North Carolina with the power to do so. The Mecklenburg sales tax, which funds the Charlotte Area Transit System (CATS), was adopted through popular vote in 1998 and renewed in a 2008 vote. The 2009 legislation has extended similar authority to all counties.

A sales tax requires approval by the County Commissioners, and then by voters in a referendum. If approved, the 0.25 percent tax must be used only for transit, and must be in addition to existing funds (that is, it cannot be used as a replacement for existing funds). In 2009, retail sales tax generated $286.4 million in revenue in Edgecombe County and $910.8

million in Nash County. Thus, a 0.25 percent sales tax would generate approximately $3 million per year for TRT.

Vehicle Registration Tax

The Study Area can levy an annual vehicle registration tax in any full-dollar amount up to $7. As with the sales tax, this must be used only for transit. Again, it would require approval by both Counties' Commissioners. However, it would not require a referendum, and would not have to be in addition to existing funds.

Likelihood of Implementation

There currently appears to be little public or political debate over either of the recently-approved funding sources in the Study Area. A sales tax is unlikely to be viable in the foreseeable future. A modest vehicle registration tax may be more achievable, but is not currently under consideration.

Although some tax and fee increases do not require approval by the public, the public and local decision-makers will still need to be convinced of the need for the increases. If the additional revenue would support service expansion, for instance, the nature of the expansion (i.e., new routes or longer service hours) and rationale for it must be clear. On the other hand, if funding were needed to prevent service reductions (due to decreases in availability of other funds, for instance), the system's ability to support basic human service and mobility needs would need to be defended.

Agency Service Contracts

Currently, TRT has service contracts with several human-service organizations (HSOs), such as Medicare. Human-service agencies, like any organization, can see their budgets change. However, the main risk to TRT is if any human service agencies terminate their contracts with TRT and use another provider instead. Having multiple agency contracts leads to economies of scale. Many (but not all) of the agency-funded trips can be combined, with several agency and/or RGP riders in a van at any time. Without these economies of scale, agencies would pay more per rider, and TRT's RGP cost per rider would also increase.

There may be scope to expand beyond the traditional HSO market into service contracts with other key employers or institutions. These partners would pay the fully allocated cost (or a significant share of it) of the service, either through monthly payments for service to TRT or purchase of a certain number of passes or fares on behalf of employees or clients. The contract would stipulate the amount and conditions of payment to TRT and the service to be provided in return, which could consist of purchases of general-public demand-response van trips (akin to a subscription service), addition of trips to an existing fixed route or introduction of a new fixed route, depending on the anticipated demand and location of the sites to be served. For example:

- A cluster of service or health-sector employers could fund additional evening fixed-route service to provide employees with transit home after work
- Late-evening subscription trips could be arranged with a large employer to provide employees with direct service to dispersed home locations
- A new fixed route could be developed between TRT's transfer center and a rural job site, with trips scheduled to coincide with shift start and end times and routed to provide convenient service for as many employees as possible
- Fixed-route or demand-response service to a work site in an adjacent county could be developed in collaboration with the employer and the adjacent county's public transportation provider
- Particular human-service needs, such as later-evening or Sunday service, could be addressed through collaboration with social service agencies to obtain a foundation grant
- A local college could purchase passes for all of its students through their semester fees, with revenues supporting increased daytime fixed-route and evening demand-response service to the college

Any new or expanded fixed-route service will be most effective and straightforward to implement when the potential riders travel at consistent times each day (i.e., fixed work shift start and end times throughout the week) and live in concentrated areas or corridors. Potential riders with lower levels of personal vehicle access, such as students, human-service clients and lower-wage employees, will also be more likely to use the service. Since these conditions may be hard to meet in a low-density, automobile-oriented area such as most of the Study Area outside of Rocky Mount, demand-response service may be most appropriate until travel patterns and demand levels warrant design of a fixed route. For employer-based services, employers may focus their recruiting efforts in areas served by new routes to provide workers with a convenient commute option and improve service effectiveness.

Any contracted services must act as public transportation, rather than as private charters, to conform to federal regulations which restrict transit agencies from using federally-funded assets for charter service. In particular, the services must be open to the public, and cannot be restricted to partners' employees or clients.

Stop Accessibility and Amenity Improvements

TRT may be able to leverage federal funds from local construction projects to improve bus stop access and amenities. For instance, sidewalk extensions and pedestrian crossing improvements funded by the City of Rocky Mount or NCDOT could be augmented with JARC or New Freedom funds to improve bus stop access for low-income individuals or people with disabilities, respectively. Similarly, TRT could apply for Federal funds to install

bus stop signs and shelters if a local jurisdiction would fund a portion of the construction costs, which would constitute the local match. Employers and other institutions whose properties TRT serves directly could also support bus stop improvements by installing signs and shelters on TRT's behalf.

Farebox Revenue

Farebox revenue, although a relatively small source of income, is an important one – partly because TRT has direct control over many elements of the fare structure, and partly because it directly affects riders. TRT can increase or decrease the basic fare. Effectively increasing or decreasing revenue for each trip. However, this could increase or decrease the number of trips, as a fare increase will discourage ridership, while a fare decrease would encourage ridership. Overall, at least in the short-term, incrementally raising or lowering fares will raise or lower income. In the past couple of years, many transit agencies have raised fares in order to make up for rising costs and reduced local revenue. Some have been able to reduce fares in order to encourage ridership, or simply to better support their communities during the recession.

As an illustrative example, a 50 percent across-the-board increase in urban fixed-route fares could generate approximately $89,000, which would allow an approximately 9 percent increase in the urban fixed-route budget. However, there are disadvantages to raising fares: it would have a direct impact on riders, and would discourage ridership (which in turn dampens the increase in revenue). Some riders already consider the current fares to be high for the amount and quality of service.

TRT currently offers 10-ride cards (for the price of 9 rides), but no daily, weekly or monthly discount passes. Although, at first glance, TRT might appear to lose money by offering any of these discounts, there are good reasons to do so. While pass programs do not necessarily increase revenue, they often increase ridership. In particular, passes offer a financial benefit to regular riders, who may ride more often to maximize the value of their passes, and the reduced price per ride may woo occasional users to purchase passes and ride more consistently. Passes also offer payment convenience to riders, as they do not need to pay at the start of each trip. Transit agencies benefit operationally from faster passenger boardings, and financially from the up-front revenue. Finally, passes are well-suited to distribution through Commuter Check programs, since employers can purchase passes on their employees' behalf directly from transit agencies rather than distributing benefit checks.

Advertising Income

Net income from advertisements at transit stops and on vehicles can serve as a local funding match for FTA grants and provide general revenue for transit operators and municipalities. TRT can pursue advertising agreements with individual businesses or can contract with an advertising firm. In either case, TRT should maintain some control over the types of businesses that could place advertisements on its vehicles or at its stops. The overall

proceeds may be small for a system of TRT's size but could still support meaningful service and capital improvements. Advertising may take a few forms:

- Advertisements at bus shelters: advertising firms typically provide specially designed shelters that contain advertisements mounted in large, backlit display cases. Advertising firms may pay for much or all of the cost of purchasing and installing these shelters; depending on the firms' interest, this could be a means to add bus shelters in high-traffic areas, such as along commercial corridors. Revenues are often split contractually among the advertising firm, transit operator and municipality.
- Bus wraps: many transit agencies earn revenue by allowing the sides and rear of buses to be treated as advertising space, whereby advertising firms pay to "wrap" buses with full-vehicle advertisements. The wraps contain cutouts for vehicle doors, allow windows to be opened and permit ample light to enter the vehicle. An alternate approach for vehicle exteriors is to mount large advertisements in brackets on the sides and rear of buses.
- Onboard advertisements: individual businesses or advertising firms may also be allowed to place placards on buses. These are typically placed in the brackets above the aisles on transit buses. This is one of the simplest ways to earn advertising revenue but will likely be less lucrative than shelter advertisements or bus wraps.

  Advertising does carry the disadvantage that it interrupts the agency's image or "brand." This is particularly true of bus wraps as well as other external advertisements. Some agencies aim to live without advertising on buses for that reason, but others accept the trade-off for a useful source of income.

Other Transportation-Related Income

TRT may also be able to generate other incidental sources of income, although the opportunities for these are limited. A shared Transfer Center with Greyhound and Amtrak offers an opportunity for TRT to act as the Greyhound and/or Amtrak ticket agent. TRT would earn a commission on the ticket sales.

12. CAPITAL ALTERNATIVES

INTRODUCTION

This section describes the planned and proposed infrastructure projects to support TRT services and its riders. It includes TRT's projects related to bus stop amenities and accessibility.

SYSTEM-WIDE BUS STOP AMENITIES AND ACCESSIBILITY

TRT's bus stops currently vary in their level of amenities and accessibility. In terms of stop amenities, almost all have a posted sign (also known as a "flag"). Some have a shelter and/or a bench, but overall the number of bus shelters in particular is scarce. TRT does not routinely post schedule information at stops. As seen in the photo on the right, TRT signs lack the agency's contact info. Field observations showed that some of the existing TRT bus stop signs have not been updated since the agency consolidated its services and changed its name from Rocky Mount Transit. The good news is that federal stimulus funds have been approved for new signs (that would include route information) and additional shelters, and TRT can benefit from that source of funding.

As with most transit agencies, the accessibility of stops (both in terms of ADA compliance, and in terms of overall ease of pedestrian and in some cases vehicular access) is quite variable. Some – particularly on streets that have recently been reconstructed or have had sidewalks added – have the required level of ADA compliance, as well as hard surfaces and good pedestrian connections to nearby residences and businesses. Others may be accessible but do not have good pedestrian connections to or from the stop. Finally, there are many stops – in both traditional urban grid neighborhoods and recently-developed areas – that are no more than a grassy area with no accessible boarding location or pedestrian facilities.

TRT should continue to improve the amenities and accessibility of stops, both as its own resources allow and by leveraging other sources of funds for improvements. This can include:

- Establishing standards for providing particular amenities (for example, TRT could aim to provide a shelter at all stops that meet a threshold number of daily riders). This should also include a standard for posting schedule information at stops.

- Establishing guidelines and a time schedule for providing additional amenities, as resources allow

- Continuing to work with landowners at stops that are located on private land, to ensure that they are aware of the benefits of transit service and amenities. TRT needs landowners' cooperation at these stops in order to provide amenities.

- Establishing a sponsorship program for amenities

- Undertaking a full bus stop access/safety/lighting audit, to help understand current deficiencies and short-term opportunities for improvements. This could be undertaken in collaboration with a local disability organization.

- Establishing a Transit and Pedestrian Access Program (see below) that would prioritize improvements in the most important locations and would leverage non-TRT Transit funding

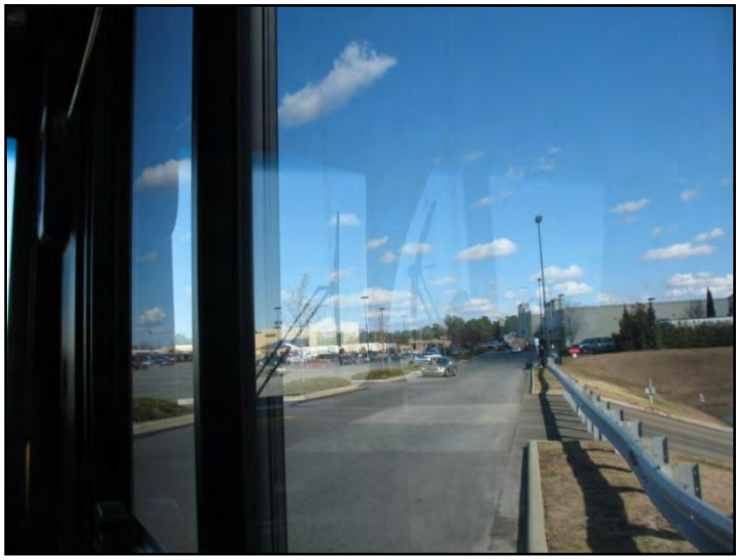
- Working with the City of Rocky Mount and NCDOT to ensure that access to bus stops, and accessibility at bus stops, forms part of their ongoing maintenance and improvement programs

- Working with the City of Rocky Mount and NCDOT to ensure that proposed highway schemes include full provision for pedestrian access. From TRT's point of view, this includes access to/from bus stops, but it also includes other pedestrian trips. Even in locations with no bus service today, these facilities will make any future bus service more convenient and accessible.

- Working with the City of Rocky Mount to improve the transit-friendliness of its land use and development standards

TRANSIT AND PEDESTRIAN ACCESS PROGRAM

The proposed Transit and Pedestrian Access Program would prioritize investment in several key locations. The program would provide synergy between meeting overall pedestrian needs (through improving sidewalks, pedestrian signals, etc.) and improving transit access (since the improvements would include routes to and from bus stops).



These schemes would be particularly valuable in the neighborhoods adjoining key retail areas, such as the neighborhoods south of Sunset Avenue or around Edgecombe Park Shopping Center, which are currently cut off from both the retail areas and the transit service due to the limited pedestrian facilities. As shown in Figure 12.1, many residential areas in Rocky Mount, including most areas east of School Road (including Tarboro Street, Long Avenue, and Redgate Avenue) lack pedestrian provisions despite being located in close proximity to downtown.

Figure 12.2 shows the recommended priority areas for Transit and Pedestrian Access Program. This is an initial list and could be amended following the system-wide access audit or in response to future route-planning decisions.

Establishing a specific program is important because it:

- Provides a focus on key areas and offers achievable "bite-size"

goals

- Can be entered into locally-adopted plans, including the Long Range Transportation Plan, and can be the subject of specific funding requests

- Can be regarded as not just a transit scheme (using transit funds) but also a highway scheme (using surface transportation funds, which although nominally available to transit are usually regarded as highway funds in practice). This would improve the chances of receiving funding

US 301 Bypass/North Wesleyan Boulevard

In the longer-term, it will be necessary and beneficial to re-examine the character of the existing US 301 Bypass/North Wesleyan Boulevard between NC 97/Raleigh Road and US 301/North Church Street. This stretch of highway is currently optimized for a heavy through-traffic role, with few pedestrian or transit facilities. While the US 301 Bypass is likely to remain a commercial strip with heavy through-traffic, the need for transit access alongside the road will become more acute with TRT's growth. In general, it is better to provide curb-to-curb rather than door-to-door transit service. Currently, most TRT bus stops located around US 301 perform as the latter, primarily due to the lack of pedestrian connections from US 301 to commercial areas, separated from the roadway with large setback typically occupied by parking lots unsuitable and unsafe for crossing by transit riders. This good opportunity to provide better transit and pedestrian facilities would also pay off by decreasing travel time around the area since bus stops/shelters could be located right on the roadside and buses would no longer need to veer around expansive parking lots in order to service the area.

Figure 12.1 Typical Land Use Pattern in Urban East Rocky Mount

NORTH CAROLINA WESLEYAN COLLEGE STOP LOCATION AND ACCESS

TRT is urged to work with the North Carolina Wesleyan College (NCWC) to assess whether the existing stop location is the most convenient. Some of the specific suggestions made by the actual students in terms of an alternative Shuttle stop location at NCWC included:

- Hardees
- Café/refreshments area
- In front of the gate
- In front of the fountain
- Taylor Center
- Hartness Center
- Bridgewood Road

SATELLITE TRANSFER POINTS

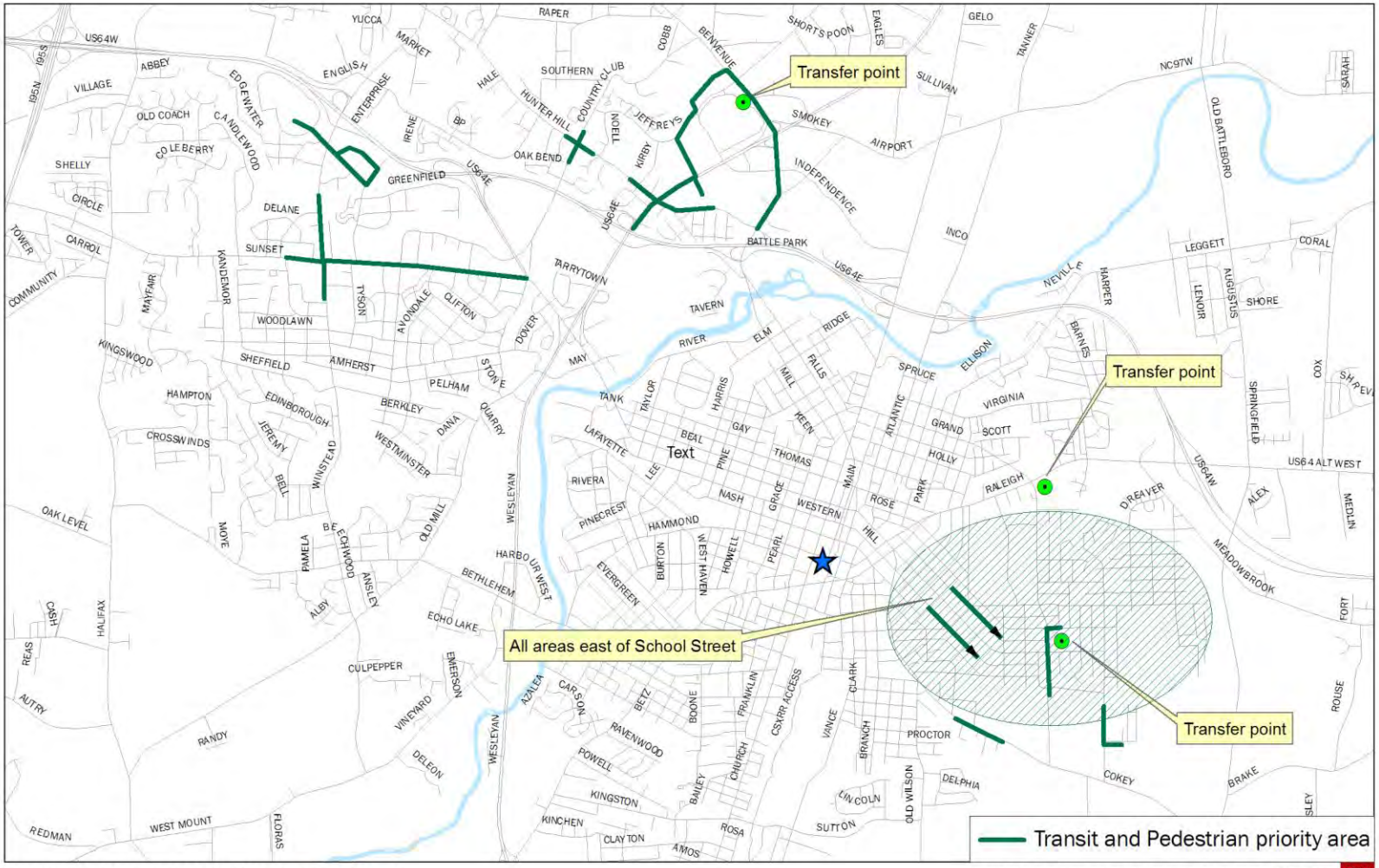
Three satellite transfer points are proposed, in the Golden East Crossing Mall area, in the Oakwood Shopping Center area and at the Nash General Hospital. It is recommended that these be developed in the future as "superstops."

Figure 10.13 shows the proposed locations.

INFRASTRUCTURE PLAN

The overall TRT's Infrastructure Plan is shown in Figure 12.2, including all items described in more detail above.

Figure 12.2 Infrastructure Plan



13. INSTITUTIONAL/MANAGEMENT ALTERNATIVES

SYNOPSIS OF EXISTING REGIONAL LINKS

This section recaps the existing transit links between the Study Area and the rest of North Carolina, reports on future prospects, and considers how TRT could contribute to improved regional links.

Section 5 of this Plan described the existing regional links. These include scheduled Greyhound service, a number of private shuttle or taxi operators, and TRT's own out-of-county trips. In addition to the scheduled services, the demand is high enough that TRT operates van trips to a regular set of locations in the Triangle, transporting riders for medical or other human-service needs.

POTENTIAL EXTERNAL CHANGES

NCDOT introduced an additional round-trip on the Piedmont train corridor between Raleigh and Charlotte in June 2010. The new trains operate as mid-day service in each direction. Other Amtrak services through eastern North Carolina may change over time, but no substantial changes are currently expected in the short-term. In the medium-term, NCDOT aims to provide additional Piedmont services.

ISSUES FOR CONSIDERATION

Human-Service Trips

TRT is currently in a very good position with its out-of-county human service trips. It recovers the costs through the fees to agencies, and it has the "critical mass" to create economies of scale by taking several riders on most trips.

However, the region-wide position is less satisfactory. There is little regional coordination, and a recent software-led project aimed at increasing coordination had mixed results. Opportunities exist to work toward improved regional coordination, as well as developing the market for non-agency riders on trips that are likely to run anyway for agency clients.

Edgecombe and Nash counties are a natural meeting-point for trips to and from the Triangle, and TRT is in a good position to assist other counties. TRT should continue to work with other county transit agencies as part of the effort to improve regional coordination. Three approaches could be considered:

- **Offering spare seats to other agencies**. This would only be on trips that TRT is making anyway. For example, Wilson County could bring a rider to Rocky Mount

and join the TRT trip to the Triangle. TRT's fee should aim to be less than the cost of a separate trip.

- **Agencies taking turns on common trip segments**. For example, on a given day, both Wilson County Transportation System (WCTS) and TRT might have trips to the Triangle. TRT would make the trip one day, collecting the Wilson rider at his/her home or in Rocky Mount. The next day, WCTS would make the trip and collect the TRT rider on the way.

- **A scheduled service**, as described below, but **aimed more closely at meeting human-service needs**, could support many trips. Importantly, the scheduled service would use a pre-agreed funding formula, providing an incentive for agencies to use the scheduled service whenever appropriate.

This is not to say that all trips can or should be shared. For the easternmost counties, it will rarely be cost-effective to "pass on" a rider to TRT at Rocky Mount, because this would create high deadhead (empty) time and mileage; in that situation the county might as well provide the trip direct.

Scheduled Service

TRT and the other counties in the region could work with NCDOT to explore the scope for additional scheduled inter-city bus service. The potential markets could include inter-city trips, connections to Amtrak trains, and some human-service trips (accepting that not all would be suitable for fixed-route service). A scheduled service would also help to establish a market for future train services, particularly if marketed as a connector service. A similar route is the existing High Point-Winston-Salem Connector – a fixed route service provided by the Piedmont Authority Regional Transportation and included in AMTRAK's timetable. Importantly, it would be a scheduled route, offering daily service at fixed times, with regional commitment and a pre-agreed funding formula, rather than a curb-to-curb service funded trip-by-trip. The service model would need to be evaluated in more detail, though options could include:

- Pre-booking or walk-up service (with pre-booking, stops could be omitted if no rider is booked)

- Operation directly by a county transit agency, by a private contractor (as Triangle Transit is proposing for some of its future routes), or as a subsidized part of the Greyhound network

- Whether to be positioned as a feeder service to Greyhound and/or Amtrak (allowing through-ticketing, but imposing some specific requirements) or as a standalone service

- Whether or not to be positioned as an inter-city bus service or rural feeder service for the purposes of federal funding (opening up s.5311(f) funding, but requiring meaningful connections to the national inter-city network)

14. MARKETING PLAN

Marketing in general refers to managing a given business in such a way that focuses on identifying and satisfying customers' needs. The premises of a basic successful marketing strategy are providing the right product (or service), offering the right price, and adequately promoting or communicating the existence and appropriateness of the product or service to potential customers. Unfortunately, many people confuse marketing with advertising; marketing is not advertising or selling. Indeed, promotional items can be offered for sale, but they are typically only a small part of an overall marketing process. The key is to offer a properly designed product or service that customers need and want.

Without a doubt, the marketing program must fit within budgetary limitations of a given agency. According to the American Public Transit Association, transit providers typically budget between 0.75 and 3 percent of their gross budget on marketing promotions, with an average of around 2 percent. While this percentage is less than most private sector businesses, public sector organizations such as TRT can rely more heavily on media support for their public relations programs. Transit marketing can be a complex, multi-disciplinary undertaking; the development of more comprehensive marketing and branding programs involves many facets among traditionally unrelated fields (such as consumer marketing, graphic design and transportation planning).

GUIDELINES AND BEST PRACTICES

Based on current practices of other transit agencies, some general guidelines in carrying out marketing and branding include:

- **Focusing on the positive and unique features of the service.** Marketing should emphasize the unique features of the service such as speed, reliability, service frequency and span, and comfort. The addition of the 10th fixed route offers TRT a chance to capitalize on the expansion by showcasing to the public (via advertising on-board the new bus as well as kick-off campaigns/promotions) that transit in general is:
    a. More efficient than a private automobile
    b. More convenient
    c. Less expensive and easier than driving and parking
    d. A way to avoid or alleviate traffic congestion
    e. An economic alternative to automobile ownership
- **Knowing your market.** Market research is a critical component of any successful initiative. With any successful marketing program, the provider of a given service needs to understand who the customer is. For a transit service, this means understanding who rides (or will ride) the service, as well as why, when and what they value or expect from transit services. Several types of research can be used,

including intercept surveys on buses and at transit stops, telephone and web surveys, and focus groups. Increasingly, social networking sites, like Facebook or MySpace, are being used to carry out market research studies

- **Targeting Individuals.** Provide individualized information that helps inform and encourage hesitant users, offering specific information and incentives to try TRT
- **Establish Partnerships**. Build programs or partnerships with local employers, officials, schools, and businesses to help encourage transit use
- **Prepare and Offer a Comprehensive yet easy to use users Ride Guide** that would provide all the necessary information about local routes, resources, and proper usage of TRT
- **Build an online Transit Toolbox.** Provide an easy to use and comprehensive online system users guide with the necessary information about local routes, resources, and proper usage of TRT – this strategy would rely heavily on revamping TRT's website. TRT should also work with local businesses and other public agencies to provide links on their respective websites
- **Build a Touch-phone, Voice-recognition Based Transit Toolbox.** Provide an easy to use and comprehensive phone system users guide with the necessary information about local routes, resources, and proper usage of TRT – this strategy would rely heavily on a separate phone line.
- **Incorporate Feedback**. Establish clear feedback channels within the marketing program to identify and overcome potential barriers within the system. Establish a database of customers' input, including suggestions and complaints

POTENTIAL NEW MARKETING INITIATIVES

Marketing strategies should be targeted at the portion of the population most willing and able to engage in alternative transportation modes. Programs should first identify the portions of residents who would never, occasionally, or frequently use transit. Recent examples of successful transit marketing initiatives which TRT should explore include:

- Coordination Opportunities with Employers – TRT could start a program such as 'Employer Pass subsidy program' where they would match an employer subsidy for a monthly pass – for instance, if a certain employer offers a 10 percent subsidy for a transit pass, TRT would match it with their own 10 percent subsidy. Thus, an employee utilizing transit would receive a 20 percent discount on top of a regular monthly or weekly pass discount. TRT could also work with major employers in the Study Area to offer and facilitate other amenities such as "Guaranteed Ride Home" or vanpooling
- Coordination Opportunities with Colleges – TRT could start a program (such as a "Student Pass subsidy program") where they would match a local college subsidy for a monthly pass – for instance, if North Carolina Wesleyan College, Nash Community College and Edgecombe Community College offer a 10 percent subsidy for a transit pass, TRT would match it with their own 10 percent subsidy. This initiative is

similar to the "Employer Pass subsidy program" described above, but could be modified to fit the needs of students

- College outreach program – TRT could work with North Carolina Wesleyan College, Nash Community College and Edgecombe Community College to advertise their services in their classes catalogs, on their websites, as well as to offer TRT Ride Guides across campus, most notably in common, high visibility and high foot traffic areas such as the cafeteria and the library
- Shopping centers underwriting – arrangement could be made with Golden East Crossing Mall or Wal-Mart in particular, who would underwrite the expense of free transit trips during specific periods such as around Christmas
- Volunteers to assist potential riders – particularly useful for elderly persons and mobility-impaired persons who could use volunteers riding with them and explaining how the transit system works to gain travel independence. One example of this kind of program is AMTRAK's Train Host, where train hosts volunteer their time to ride the trains to assist passengers, promote passenger services and answer questions about the route, ground transportation and area attractions
- Publishing users Ride Guide in a local/regional newspaper and on TRT's website.
- Direct mail program – whenever new service is established or extended, a direct mail campaign might be useful in order to ensure new and/or existing residents know about TRT servicing their respective neighborhoods. TRT could also cooperate with the City of Rocky Mount or local utility companies to keep track of residents who have requested new utility service in order to inform them about transit services offered to them
- First-time caller program – first-time TRT callers can be identified and targeted for future direct mail advertising

15. FIVE-YEAR TRANSIT PLAN

After careful consideration of the characteristics of the Study Area and analysis of the current TRT system and its needs, the following Five-Year Community Transportation Service Plan has been developed for TRT. The following factors are intended to be addressed by the Five-Year Plan:

- To promote public transportation options that improves the quality of life of Edgecombe and Nash Counties citizens
- To provide safe and dependable transportation mobility options to the general public, low income individuals, elderly persons, and/or persons with disabilities
- To create a seamless public transportation network within the Study Area that provides service to all geographies, jurisdictions, and program areas
- To develop a defensible and cost-constrained implementation plan that utilizes results-based metrics to gauge effectiveness
- To support the full integration of federal, state, local, and private programs supporting public and human-service transportation
- To improve the efficiency and effectiveness of federal, state, locally, and privately funded public transportation programs

Together, the goals support Tar River Transit's focus areas, including providing better service to riders, ensuring long-term stability of the transit system, building capability to expand, build Tar River Transit brand/image, and, finally, be a part of the decision-making process when it comes to transportation options.

The Five-Year Plan is based on the following assumptions:

- Service quantity will expand, if warranted and feasible, in order to maintain and enhance service quality.
- No additional operating funds will become available for local transit programs, and the Plan should be financially sustainable within the existing funding sources. This asssumption does not apply to the Union Station Transfer Center and an Operations and Maintenance Center.

The Service, Institutional, Management, and Financial elements of the Five-Year Plan are presented in the following sections.

In addition, the proposed recommendations support NCDOT's objectives for this kind of Plan, including:

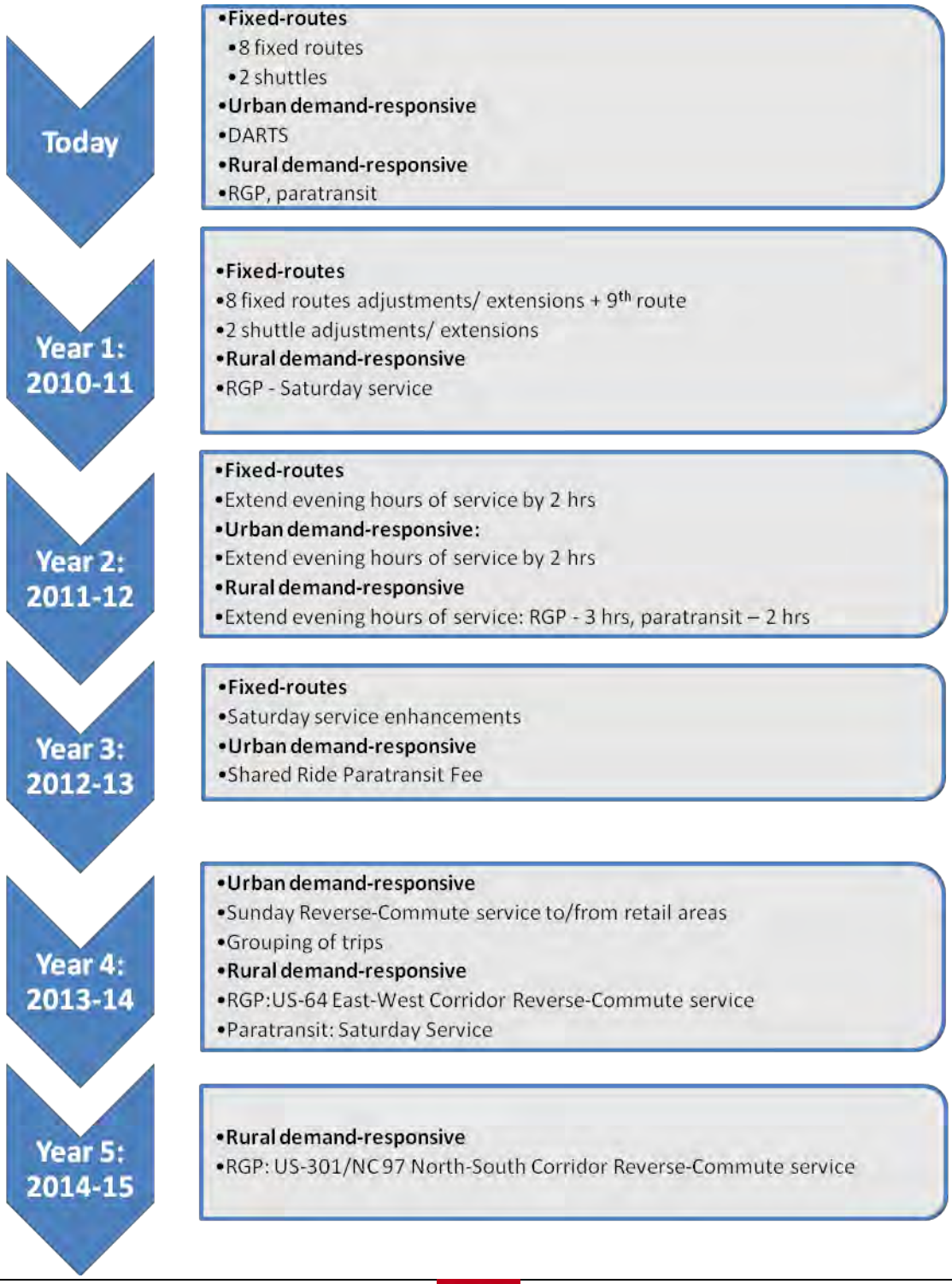
- Timely development and availability of transportation services
- Improving the efficiency and effectiveness of federal/state-funded programs
- Supporting and promoting coordination
- Providing dependable transportation
- Enhancing the coordination of existing services
- Building upon the coordination efforts that exist
- Serving as a basis for funding requests

SERVICE AND IMPLEMENTATION PLAN

An effective and appropriate service and its implementation strategy is the backbone of any transit plan. This strategy includes the types of service provided, their schedules and routes, and the overall quality of service – altogether these components can either make or break a given transit system. This section describes the proposed improvements to TRT that will be implemented over the next five years: 2011 through the end of 2015. The proposed Five-Year Plan service improvements are discussed in great detail in Section 10 of this plan. The elements of a Service and Implementation Plan are also summarized and shown in

Figure 15.1. The overall short-term strategy regarding fixed-route services is to expand and enhance service with the addition of the East Rocky Mount Route and other necessary changes such as extension of service hours, realignment of existing routes and additional transfer opportunities. The service strategy aims to make transit more efficient and accessible to riders.

Figure 15.1 TRT Five-Year CTSP Service and Implementation Plan Summary



CAPITAL PLAN

The following capital projects aimed at improving the TRT system have been identified as financially feasible in the 2011-2015 time frame. All these elements are discussed in detail in previous sections of this plan. Overall, the proposed TRT Five-Year Capital Plan consists of:

1. Following recommended vehicle replacement schedule and expansion
2. Establishing Satellite Transfer Points at the following locations:

    a. Golden East Crossing Mall
    b. Oakwood Shopping Center
    c. Nash General Hospital

3. Transit and Pedestrian Access Program – improve corridors: US 301, Sunset Ave, and Benvenue Rd

4. Installing more bus shelters, schedules at stops/on-board, improved signage

5. Fare options revision and implementation (electronic fareboxes, monthly/weekly discount pass)

6. Implementation of the PPA recommendations regarding demand-responsive service (see Section 6 of this Report)

7. ARRA projects:

    a. Transfer Center in downtown Rocky Mount – renovation

    b. Maintenance shop equipment and facility purchase

8. State of Good Repair projects (contingent upon securing funding):

    a. Re-roofing the Transfer Center in downtown Rocky Mount
    b. Repainting the interior of the Transfer Center in downtown Rocky Mount
    c. Relocating the drivers' room the Transfer Center in downtown Rocky Mount
    d. Establishing the three proposed Satellite Transfer Points
    e. Installing more bus shelters systemwide
    f. Replacement of all Orion VII bus engines

9. Transit Investments for Greenhouse Gas and Energy Reduction (TIGGER) project (contingent upon securing funding):

    a. Solar energy rooftop installation at the Transfer Center in downtown Rocky Mount and at the Hertz Building (rural drivers' operation base)

Passenger Amenities

Overall, TRT should aim at improving the amenities and accessibility of stops by:

- Establishing standards for providing particular amenities and preparing and maintaining a Priority List for stop amenities. The expansion of service will require establishing new bus stops and transit benches and shelters where applicable. Transit benches are typically warranted at bus stops with five or more passenger boardings per day, while shelters typically require 15 or more passenger boardings per day

- Continuing to work with landowners at stops that are located on private land

- Establishing a sponsorship program for amenities

- Undertaking a full bus stop access/safety/lighting audit

- Establishing a Transit and Pedestrian Access Program that would prioritize improvements in the most important locations

- Working with the City of Rocky Mount and NCDOT to ensure that access to bus stops, and accessibility at bus stops, forms part of their ongoing maintenance and improvement programs

- Working with the City of Rocky Mount and NCDOT to ensure that proposed highway schemes include full provisions for pedestrian access

- Working with the City of Rocky Mount to improve the transit-friendliness of its land-use and development

Transit Vehicles

TRT has a fleet of 43 vehicles – seven Orion full-sized urban buses (used to operate fixed routes), two Ford van coaches (used to operate fixed-route shuttles) and 34 paratransit vans (used to operate RGP, DARTS, and ADA demand-responsive service) (data as of April 2010). The service plan as proposed requires an increase in the number of required buses on

fixed routes by one vehicle (in order to add the East Rocky Mount Route). Most of TRT's transit fleet vehicles, with the exception of the city buses, will reach the end of their economically useful lives at the end of the Five-Year Plan and will warrant replacement. The two Ford van coaches used to operate the fixed-route shuttle service will warrant replacement in 2011. In terms of paratransit services, 15 vans will need to be replaced in 2011, seven in 2012, six in 2013, six in 2014, and none in 2015 (see Table 5.12). While this replacement schedule is fairly flexible, TRT should plan ahead to accommodate the need to replace vehicles that reach their useful lifespan at suggested intervals. Thus, the recommendation is that TRT prepares a Fleet Replacement Plan.

INSTITUTIONAL PLAN

Regional Transit Trips Coordination

TRT should continue to work with the surrounding counties' transit agencies as part of the effort to improve regional coordination. Three approaches could be considered:

- Offering spare seats to other agencies
- Agencies taking turns on common trip segments

A scheduled service aimed more closely at meeting human-service needs could support many trips. Importantly, the scheduled service would use a pre-agreed upon funding formula, providing an incentive for agencies to use the scheduled service whenever appropriate.

Inter-City Bus Service

U.S. Congress included federal funding for rural inter-city bus service in the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and continued the funding in 1998 with the Transportation Equity Act for the 21st Century (TEA-21). TRT and the other counties in the region should work with NCDOT and private companies such as Greyhound and Carolina Trailways to explore the scope for additional scheduled inter-city bus service. This service would connect cities and towns in the surrounding counties, including AMTRAK stations, Greyhound stations and major points of interest such as the Research Triangle Park, Raleigh-Durham International Airport, major nearby cities such as Greenville, Selma, Smithfield, Goldsboro, Wilson, Raleigh, Jacksonville, etc.

One example of a successful inter-city bus service is the service provided by South Central Arkansas Transit and operated by the Central Arkansas Development Council (CADC) in Malvern, Arkansas. This rural bus feeder service provides intercity transportation using Section 5311(f) funds. The service operates a 20-passenger bus twice a day, funded through a combination of Greyhound assistance, Section 5311(f) operating assistance, ticket commission revenue, and agency funds. In Polk County, Florida, the Polk County Transit

Services uses Section 5311(f) rural assistance funds to provide inter-city transit service in the City of Winter Haven, reaching into remote areas.

An example of a successful inter-city bus program with a unique approach to funding is Travel Washington offered by the Washington State Department of Transportation (WSDOT). Travel Washington uses private contractors to provide the transportation on the bus routes. Traditionally, local matching funds are needed for each individual bus route and provider and are difficult for local communities to secure. In 2006, WSDOT received approval from the Federal Transit Administration (FTA) to use private capital investment as local match funds for the Travel Washington inter-city bus routes. The local match comes from the capital investment made by Greyhound Bus Lines. This new innovative funding structure and inter-agency partnership allows for inter-city travel as part of a network that serves regional needs rather than isolated separate communities.

Marketing Strategy

Marketing is an essential element of a cost-effective transit service – potential TRT riders are not able to make a rational decision regarding whether to use transit services made available to them if they do not know about the mobility options the transit system offers them. In general, up to three percent of the total operating budget should be used to conduct a focused marketing effort aimed at fostering awareness among the Study Area's residents regarding TRT options and to ultimately increase ridership levels. The recommended marketing strategy for the Five-Year period includes:

- Introducing a Community Mobility Manager (in-house or contracting)

- Improving existing marketing materials – a new schedule with revised routes (map) will be needed and it provides an opportunity to showcase regional connections TRT offers; improved TRT website; attractive "Ride Guide"

- Encouraging more input from the public regarding the services it offers. Accordingly, TRT should consider additional ways to involve riders in actual service planning. The Rider Involvement Plan should be prepared and implemented in 2012

FINANCIAL PLAN

Fares Strategy

TRT should strive to introduce electronic fareboxes as soon as possible, with a total changeover to the electronic transit fare payment completed by FY 2011-12. At that time, TRT should also revise fare options, taking advantage of the new payment system. Along with all-day passes, a variety of multi-ride pass options should be offered as well. A discounted monthly pass and/or stored value card should be evaluated as a potential replacement for the 10-ride tickets. It remains to be seen how the revised fare options would affect the ridership. Reduced cost monthly passes might induce transit use. On the other hand, farebox revenues might decrease slightly due to the reduced cost of the transit passes.

Providing Transit Services through Existing Local, State, and Federal Funding

TRT will need to rely on existing local, state, and federal transit funding sources to fund its ongoing operating costs. The methodology used to develop the Financial Plan consisted of the following steps:

1. **Developing forecasts of the annual operating and administrative costs** (Table 15.1). "Base case" operating and administrative costs were estimated, assuming no change in the level of services and a three percent annual inflation rate. Using the calculated Base Case, future projected operating and administrative costs were identified for the recommended TRT service improvements. These projected costs were multiplied by the inflation rate as well. The operating and administrative costs in the final year of the Five-Year Plan (Fiscal Year 2014-15) are estimated to equal around $3.79 million - a 36.5 percent increase from the estimated Base Case figure of $2.78 million.

2. **Estimating ridership for each of the recommended TRT service improvements** (Table 15.2). The "Base Case" ridership represents existing ridership factored by projected population growth in the Study Area. In terms of the status quo/base case scenario, TRT ridership is assumed to increase annually by the projected average rate of population growth in the Study Area – assumed to be 0.02 percent annual population growth rate in Rocky Mount and 0.023 percent population growth rate in the non-urbanized portion of the Study Area.

   After calculating base case ridership, the ridership impacts of the recommended improvements/service enhancements are identified. It typically takes two full years for new fixed route transit services to reach full ridership potential and one year for a service revision to reach full ridership potential. As such it is assumed that ridership for major service changes to the urban and rural transit network will reach 65 percent of full ridership potential in the first year of service and 90 percent in the

second year. The calculated projected ridership is then further discounted by 50 percent to reflect even more realistic projection levels associated with introducing major changes to TRT services.

Overall, implementing recommended service improvements as outlined in the Five-Year Plan is likely to increase systemwide ridership by 40.6 percent (or about 174,000 trips) over the base case scenario levels in the final Fiscal Year of the Five-Year Plan. The projected ridership in Fiscal Year 2014-15 after all proposed transit recommendations are implemented is about 602,000 (as compared to 429,000 projected for the Base Case scenario).

3. **Estimating passenger fare revenues based on the ridership forecasts** (Table 15.4) In order to estimate farebox revenues, the most recent performance analysis of TRT was first conducted (Table 15.3). The existing data from Fiscal Year 2008-09 made it possible to calculate TRT's fare per passenger trip – or, in other words, what TRT actually receives from each passenger for each trip ($0.71 systemwide). The fare per passenger trip was then used (as a multiplier) to calculate both the Base Case farebox revenues, as well as the Five-Year Plan's projected farebox revenue. The implementation of the various Five-Year Plan elements is expected to add an additional $146,000 in farebox revenues in the final year of the Plan (Fiscal Year 2014-15), and effectively increase systemwide farebox revenue from $305,000 (Status Quo scenario) to $451,000 (with implemented Five-Year Plan improvements). This represents a 48 percent increase in farebox revenue over the Base Case service.

4. **Estimating the capital costs of the Capital Plan elements** (Table 15.5). The following capital funding will be required to implement transit service recommendations from the Five-Year Plan:

   - S.5307 Urban Formula Funding AARA projects (as listed above) – with a total estimated cost of $1.03 million – requiring a 10 percent local match of $103,000
   - S.5303 MPP Grants projects (adopted in UPWP by Rocky Mount Area MPO), including service improvements such as bus turn-outs along US 301 and Benvenue Rd and van replacements, with a total estimated cost of $811,000 – requiring a 10 percent local match of $81,000
   - S.5309 Capital Investment Program projects, including vehicle fleet expansion and replacements, with a total estimated cost of $2 million – requiring a 10 percent local match of $200,000
   - S.5311 Rural Formula Funding projects, including paratransit rural scheduling software upgrade study, with a total estimated cost of $30,000 – requiring a 10 percent local match of $3,000

- S.5316 Job Access and Reverse Commute (JARC) projects, contingent upon securing funding, and including vehicles needed for the proposed service expansion - US-64 East-West and US-301/NC 97 North-South Corridor Reverse-Commute Service. The total estimated cost is $204,000 and requires a 20 percent local match of $41,000

- S.5317 New Freedom projects, contingent upon securing funding, and including Transit and Pedestrian Access Program inventory and improvements, with a total estimated price tag of $42,000 and requiring a 20 percent local match of $8,000

In terms of the funding source, nearly half of the funding needed for implementation of the TRT Capital Plan is envisioned to come from S.5309 Capital Investment Program funding, followed by 25 percent from S.5307 Urban Formula Funding, and 20 percent from S.5303 MPP Grants (see Figure 15.2). It should be noted that recently introduced federal sources of funding such as the State of Good Repair and TIGGER grants could be used to accelerate and enhance some of the proposed capital plan improvements. As shown in

Figure 15.3, over the course of the Five-Year Plan, the estimated TRT capital plan's cost burden is 10.6 percent of the total cost, or $436,000 of $4.1 million.

Figure 15.2 Proposed Five-Year Capital Plan Revenue by Percentage from Funding Source

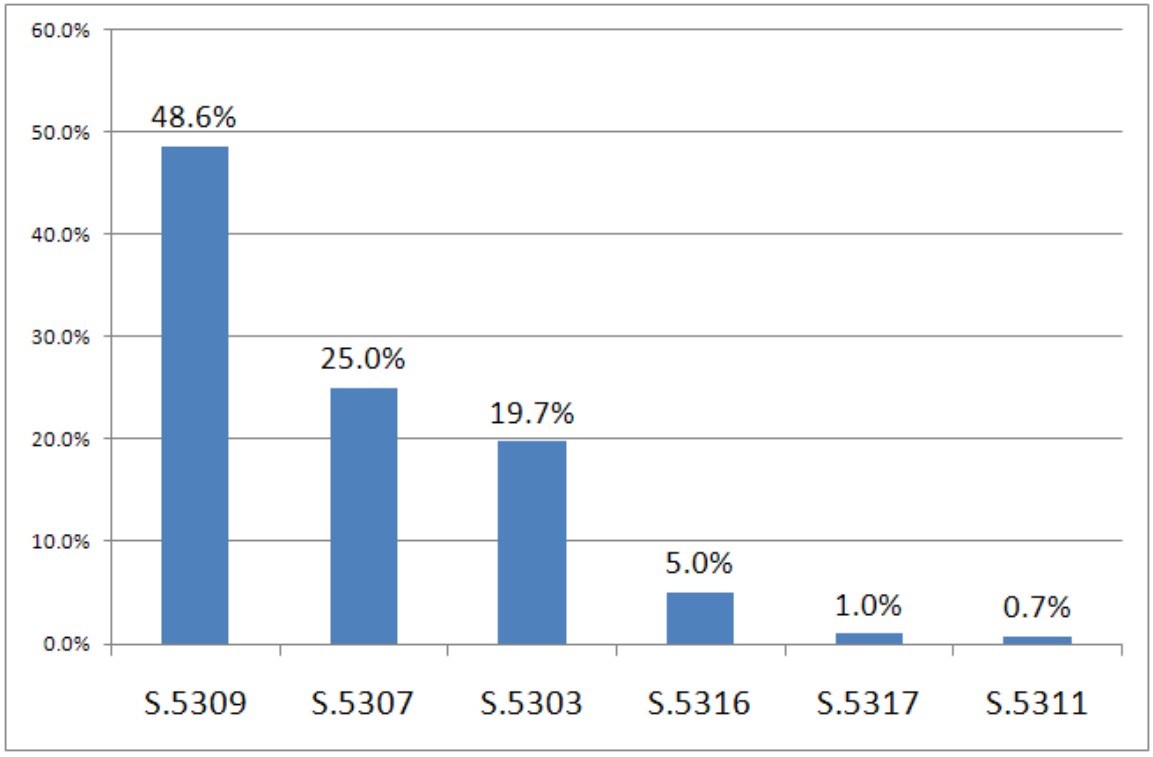
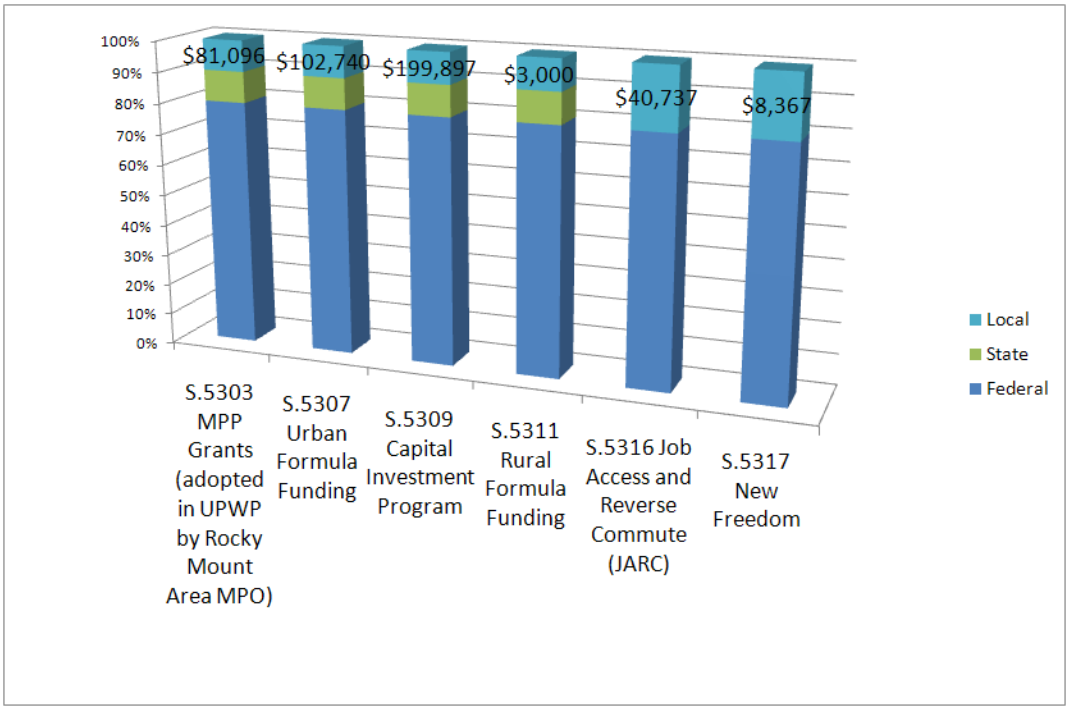


Figure 15.3 Proposed Five-Year Capital Plan Revenue Sources



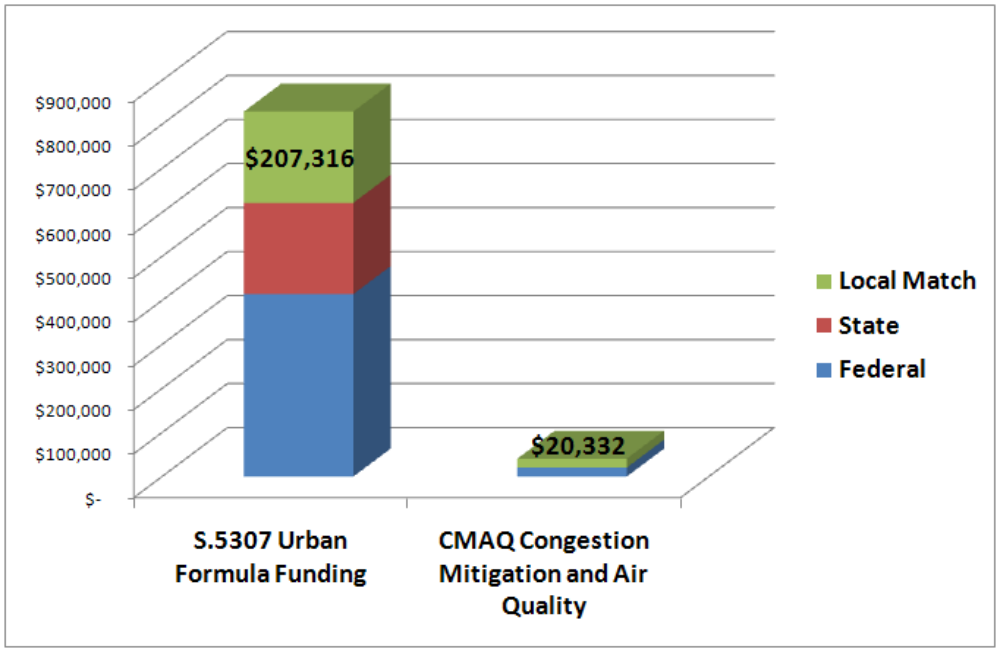
5. The compounded results of the above calculations were utilized to develop the actual systemwide Financial Plan, as shown in Table 15.10. Thus, in order to estimate the operating subsidy for TRT, the agency's projected operating revenue forecasts were subtracted from its projected operating cost forecasts. The following sources would be used to subsidize TRT operating costs:

   a) **Urban Fixed-Routes** (Table 15.6):

      - Base Case Scenario: continuous reliance on FTA 5307 and FTA 5309 funds, reflecting the rate of inflation (assumed to be three percent annually). The urban costs and revenues were estimated by averaging the data for received assistance from various sources in most recent years and adjusting it for inflation (assumed to be three percent annually).
      - Five-Year Plan Recommendations: reliance on FTA 5307 for its expansion plans (addition of the East Rocky Mount route, extended service on other routes) and extended weekday evening service hours, with some funding coming from Congestion Mitigation and Air Quality (CMAQ) to enhance Saturday service.
      - The required local match necessary to implement the proposed urban fixed-routes service improvements will range from an estimated $23,000 in FY 2010-11 to $53,000 in FY 2014-2015, the final year of the Five-

Year Plan. The total local match over the course of the Five-Year Plan needed to implement proposed service improvements to the fixed-route portion of the TRT system is estimated at $227,000 (see Figure 15.4**).**

Figure 15.4 Five-Year Plan Urban Fixed-Routes Service Improvements Revenue Sources

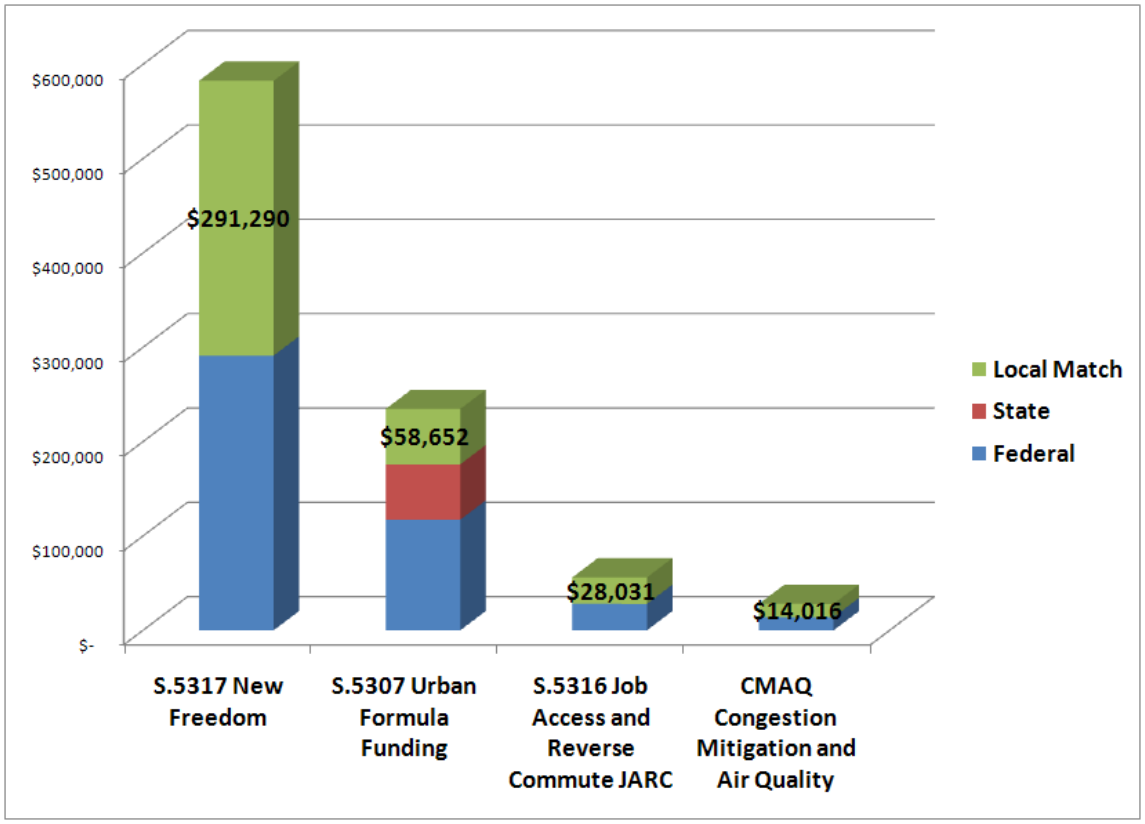


b) **Urban Dial-A-Ride (DARTS)**(Table 15.7):

- Base Case Scenario: continuous reliance on FTA 5307 funds, reflecting the rate of inflation (assumed to be three percent annually). The urban demand-responsive costs and revenues were estimated by averaging the data for received assistance from various sources in most recent years and adjusting it for inflation (assumed to be three percent annually).
- Five-Year Plan Recommendations: reliance on more typical sources of funding such as FTA 5307 to extend weekday evening service hours (DARTS service would match the proposed extended weekday evening hours of service on the fixed-routes), as well as targeted competitive grants, including S.5317: New Freedom used to implement the proposed weekday Shared Ride - Paratransit Feeder Service; S.5316: Job Access and Reverse Commute (JARC) used to implement demand-responsive service to/from retail areas (reverse-commute) on Sunday; and CMAQ to implement the proposed Grouping of Trips.
- The required local match necessary to implement the proposed DARTS service improvements will range from an estimated $14,000 in FY 2011-12

to $135,000 in FY 2014-2015, the final year of the Five-Year Plan. The total local match over the course of the Five-Year Plan needed to implement proposed service improvements to the fixed-route portion of the TRT system is estimated at $392,000 (see Figure 15.5)

Figure 15.5 Five-Year Plan DARTS Service Improvements Revenue Sources



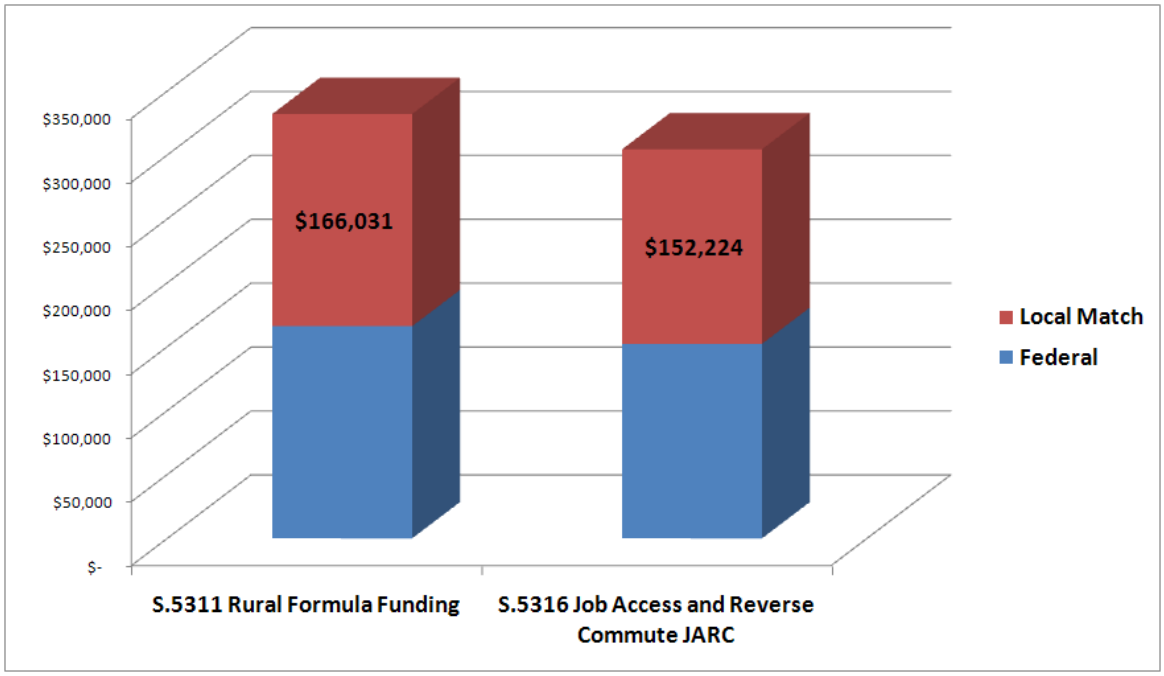
c) **Rural General Public (RGP)**(Table 15.8):

- Base Case Scenario: continuous reliance on FTA 5311 funds, reflecting the rate of inflation (assumed to be three percent annually). The RGP costs and revenues were estimated by averaging the data for received assistance from various sources in most recent years and adjusting it for inflation (assumed to be three percent annually).
- Five-Year Plan Recommendations: reliance on more typical sources of funding such as FTA 5311 to introduce Saturday service and extend weekday evening service hours (RGP service would match the proposed extended weekday evening hours of service on the urban fixed-routes and DARTS), as well as targeted competitive grants, including S.5316 used to

implement the proposed Reverse-Commute Service along US-64 East-West Corridor and US-301/NC 97 North-South Corridor.

- The required local match required to implement the proposed RGP service improvements will range from an estimated $14,000 in FY 2010-11 to $142,000 in FY 2014-2015, the final year of the Five-Year Plan. The total local match over the course of the Five-Year Plan needed to implement proposed service improvements to the RGP portion of the TRT system is estimated at $318,000 (see Figure 15.6)

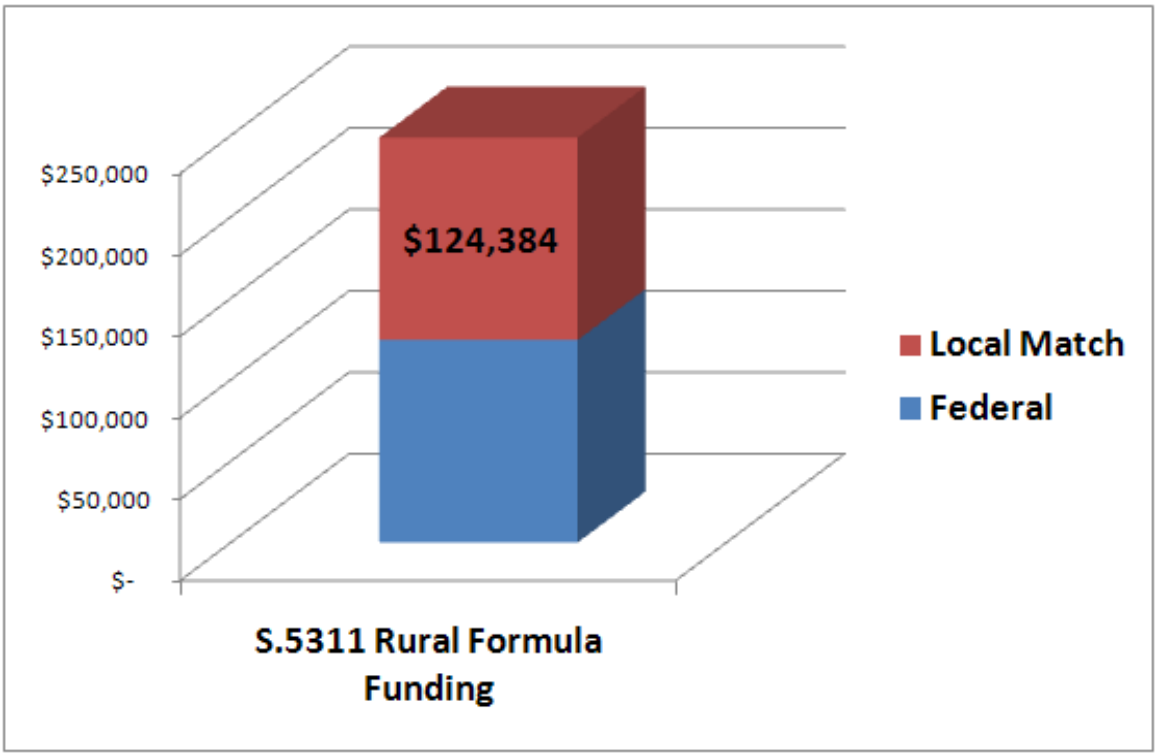
Figure 15.6 Five-Year Plan RGP Service Improvements Revenue Sources



d) **Rural Demand-Responsive ADA Service (ADA)**(Table 15.9):

- Base Case Scenario: continuous reliance on FTA 5311 funds, reflecting the rate of inflation (assumed to be three percent annually). The ADA costs and revenues were estimated by averaging the data for received assistance from various sources in most recent years and adjusting it for inflation (assumed to be three percent annually).
- Five-Year Plan Recommendations: reliance on FTA 5311 to introduce Saturday service and extend weekday evening service hours (ADA service would match the proposed extended weekday evening hours of service on the urban fixed-routes, DARTS, and RGP)
- The required local match necessary to implement the proposed ADA service improvements will range from an estimated $22,000 in FY 2011-12 to $41,000 in FY 2014-2015, the final year of the Five-Year Plan. The total local match over the course of the Five-Year Plan needed to implement proposed service improvements to the ADA portion of the TRT system is estimated at $124,000 (see Figure 15.7)

Figure 15.7 Five-Year Plan ADA Service Improvements Revenue Sources

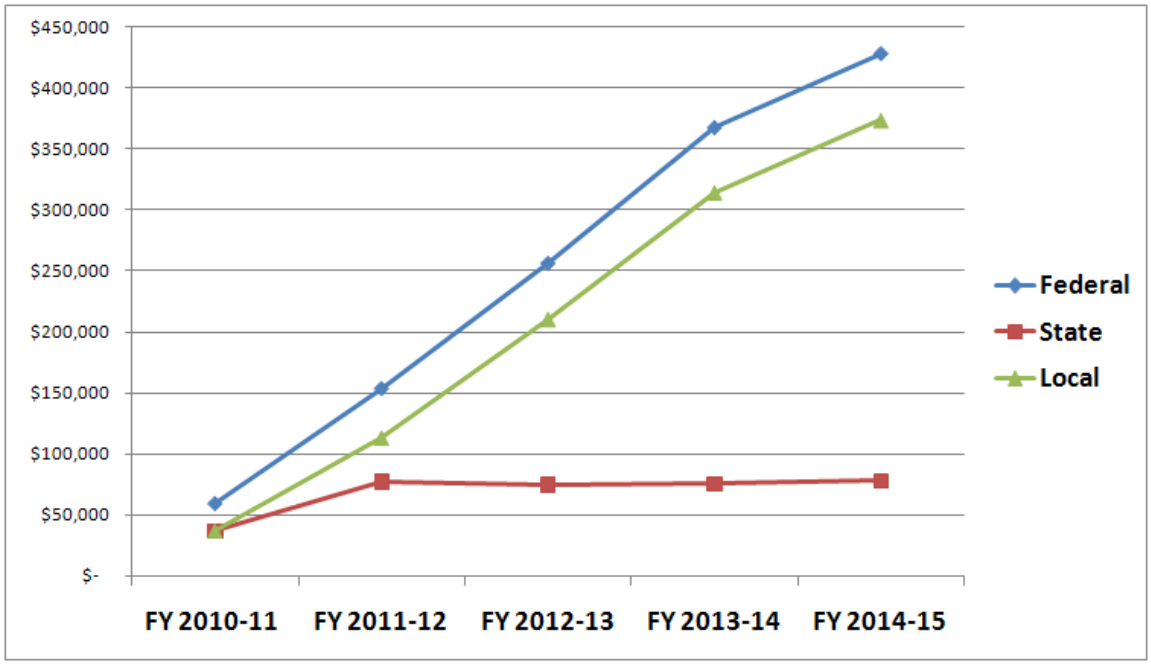


CTSP and the "Bottom Line"

Overall, the required additional estimated local match needed to implement the recommendations of the Five-Year Plan will peak at $377,000 in the final Fiscal Year of the Five-Year Plan (FY 2014-15)(see Table 15.10 and Figure 15.8). This represents more than a two-fold increase from the estimated local match of $179,000 during the same fiscal year. It should be noted, however, that the additional projected local match associated with proposed recommendations from the Five-Year Plan will vary from one fiscal year to another; thus, while it is estimated at $377,000 during the final Fiscal Year of 2014-15, it is at $14,000 during the Fiscal Year 2010-11. Since the proposed service improvements are to be implemented gradually, it allows TRT to prepare for them in terms of securing financial revenues and obtain additional local funding if necessary (for instance, an increase vehicle registration tax instituted in Edgecombe and Nash Counties, as previously described, could be used to fund TRT's operating costs).

TRT would essentially operate at the break-even point for the entire duration of the Five-Year Plan. It should be noted that if TRT does not secure funding from targeted competitive programs such as JARC or New Freedom, the local match associated with implementing the proposed projects would no longer be required and the total local match required as part of this Plan would decrease. Other variables, such as an increase in ROAP funds or access to newly emerged federal sources of funding such as the State of Good Repair or TIGGER could drastically decrease the required local match as well.

Figure 15.8 Five-Year Plan and Local Match



CTSP and the "Selling Points"

The Financial Plan indicates that TRT will be able to implement the recommended service improvements from the Five-Year Plan after ensuring that the local funds required for such purpose are available. While the increase in required local funds is substantial, the benefits of improved and increased service are significant enough to warrant the full implementation of service improvements proposed as part of the Five-Year Plan.

If the Five-Year Plan's items are successfully implemented, TRT ridership will increase by 41 percent over the Base Case Scenario in the final Fiscal Year of the Five-Year Plan, 2014-15. Farebox revenues would make the comparison even more favorable – if the Five-Year Plan's items are successfully implemented, TRT farebox revenue will increase by 48 percent over the Base Case Scenario in the final Fiscal Year of the Five-Year Plan, 2014-15.

The Five-Year Plan will greatly enhance the existing urban transit network by adding an entirely new fixed route (East Rocky Mount), expanding and adjusting service on all other routes to increase user convenience, provide additional transfer points systemwide, enhance existing weekend service, and perhaps most notably, extend weekday evening hours of service by an average of two hours on each individual route (or an estimated two additional runs per route; shuttles are excluded). The improvements in scheduling and routing of the existing TRT fixed routes will improve the efficiency and effectiveness of the transit network and is bound to attract new riders (especially if marketed properly) and retain the existing patrons. Urban DARTS riders will benefit from extended weekday hours of service as well, but will also be given an opportunity to use new proposed transit services such as the weekday Shared Ride feeder service connecting them to proposed/existing fixed-routes stops, reverse-commute focused Sunday demand-responsive service to/from retail areas, and Grouping of Trips. In terms of RGP service, new Saturday service along with extended weekday service hours will greatly expand the riders' mobility, while the Reverse-Commute service along US-64 (East-West) and US-301/NC 97 (North-South) corridors would allow for better job accessibility in the entire Study Area. Demand-responsive ADA van riders in the Study Area would greatly benefit from extended weekday evening hours of service and Saturday service. Finally, the improvements recommended as part of the Capital Plan, including fare options revision (discounted monthly/weekly passes) and electronic fareboxes (electronic transit fare swipe cards), satellite transfer points, bus shelters, and other service improvements will enable TRT to become a much more efficient and complete transit service provider.

TABLE 15.1
FIVE-YEAR PLAN PROJECTED OPERATING COSTS ESTIMATES (IN U.S. DOLLARS)

	Actual	Estimated	Year 1	Year 2	Year 3	Year 4	Year 5
	FY 2008-09	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15
Base Case Operating Cost							
Fixed Routes	677,433	697,756	718,689	740,249	762,457	785,331	808,891
Paratransit Urban	115,734	$ 119,206	122,782	126,465	130,259	134,167	138,192
Paratransit Rural	1,244,227	1,281,553	1,320,000	$1,359,600	1,400,388	1,442,400	1,485,672
Fixed costs - Other	287,788	296,422	305,314	314,474	$323,908	333,625	343,634
Total Base Case Operating Costs	**2,325,181**	**2,394,937**	**2,466,785**	**2,540,788**	**2,617,012**	**2,695,522**	**2,776,388**
Service Plan Elements Incremental Impacts:							
Urban Fixed-Route Network							
Phase I:							
New 10th fixed route - 'East Rocky Mount'			57,519	59,245	61,022	62,853	64,738
Golden East route extension			61,944	63,802	65,716	67,687	69,718
Phase I Total			*119,463*	*123,047*	*126,738*	*130,540*	*134,456*
Phase II:							
Extended Evening Fixed-Route Service Monday-Friday				145,833	150,208	154,714	159,356
Enhanced Saturday service					19,144	19,718	20,310
Phase II Total				*145,833*	*169,352*	*174,433*	*179,666*
Total Urban Fixed-Route Network			***119,463***	***268,880***	***296,090***	***304,973***	***314,122***
Urban Demand-Responsive Network: DARTS							
Extended Evening Service Monday-Friday				60,898	62,725	64,607	66,545

Shared Ride - Paratransit Feeder Service Monday-Friday					203,857	209,973	216,272
Sunday Demand-Responsive Service to/from Retail Areas (reverse-commute)						29,643	30,533
Grouping of Trips						14,822	15,266
Total Urban Demand-Responsive Network: DARTS				***60,898***	***266,583***	***319,045***	***328,616***
Rural Demand-Responsive Network: RGP							
Saturday Service			28,807	29,671	30,561	31,478	32,422
Extended Evening Monday-Friday Service				43,651	44,960	46,309	47,698
US-64 East-West Corridor Reverse-Commute service						100,336	103,347
US-301/NC 97 North-South Corridor Reverse-Commute service							103,347
Total Rural Demand-Responsive Network: RGP			***28,807***	***73,322***	***75,522***	***178,124***	***286,814***
Rural Demand-Responsive Network: ADA							
Extended Evening Service Monday-Friday				43,647	44,957	46,305	47,695
Saturday Service						33,848	34,864
Total Rural Demand-Responsive Network: ADA				***43,647***	***44,957***	***80,153***	***82,558***
Enhanced Marketing Costs			5,000	20,000	20,000	20,000	20,000
Total Service Plan Elements Incremental Impacts			***148,270***	***446,747***	***683,151***	***882,295***	***1,012,110***
Total Transit Operating Costs	**2,325,181**	**2,394,937**	**2,615,054**	**2,987,535**	**3,300,163**	**3,577,817**	**3,788,498**
% Increase Service Plan Incremental Impacts/Base Case			**6.0%**	**17.6%**	**26.1%**	**32.7%**	**36.5%**

Assumptions:

3% annual inflation

TABLE 15.2
FIVE-YEAR PLAN PROJECTED RIDERSHIP ESTIMATES (ANNUAL ONE-WAY TRANSIT TRIPS)

TRT CTSP 2009	Actual	Estimated	Projected				
Projected Ridership Estimates: One-way Transit Trips	FY 2008-09	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15
Base Case Ridership							
Fixed Routes	280,902	286,520	292,250	298,095	304,057	310,139	316,341
Paratransit Urban	7,835	7,992	8,152	8,315	8,481	8,650	8,823
Paratransit Rural	89,962	92,031	94,148	96,313	98,528	100,795	103,113
Total	**378,699**	**386,543**	**394,550**	**402,723**	**411,067**	**419,584**	**428,278**
Service Plan Elements Incremental Impacts:							
Urban Fixed-Route Network							
Phase I:							
New 10th fixed route - 'East Rocky Mount'			16,206	22,888	25,939	26,458	26,987
Golden East route extension + Sunset rerouting			17,452	24,890	27,935	28,493	29,063
Phase I Total			*33,658*	*47,778*	*53,874*	*54,951*	*56,050*
Phase II:							
Extended Evening Fixed-Route Service Monday-Friday				40,689	57,466	65,128	66,430
Enhanced Saturday service					5,290	7,471	8,467
Phase II Total				*40,689*	*62,755*	*72,598*	*74,897*
Total Urban Fixed-Route Network			***33,658***	***88,467***	***116,629***	***127,550***	***130,947***
% Increase Aboove Base Case Fixed-Routes	*N/A*	*N/A*	*11.5%*	*29.7%*	*38.4%*	*41.1%*	*41.4%*
Urban Demand-Responsive Network: DARTS							
Extended Evening Service Mon-Fri				2,681	3,786	4,291	4,376
Paratransit Feeder Service Mon-Fri					8,886	12,550	14,223

Sunday Demand-Responsive Service to/from Retail Areas (reverse-commute focused)						1,280	1,807
Grouping of Trips						640	904
Total Urban Demand-Responsive Network: DARTS				***2,681***	***12,672***	***18,760***	***21,310***
% Increase Above Base Case Paratransit Urban	*N/A*	*N/A*	*N/A*	*32.2%*	*149.4%*	*216.9%*	*241.5%*
Rural Demand-Responsive Network: RGP							
Saturday Service			1,304	1,847	2,099	2,147	2,197
Extended Evening Monday-Friday Service				1,962	2,779	3,159	3,232
US-64 East-West Corridor Reverse-Commute service						4,449	6,302
US-301/NC 97 North-South Corridor Reverse-Commute service							4,551
Total Rural Demand-Responsive Network: RGP			***1,304***	***3,809***	***4,878***	***9,755***	***16,282***
Rural Demand-Responsive Network: ADA							
Extended Evening Service Monday-Friday				1,962	2,779	3,159	3,232
Saturday Service						1,640	2,323
Total Rural Demand-Responsive Network: ADA				***1,962***	***2,779***	***4,799***	***5,555***
Total Rural Network % Increase Above Base Case Rural	*N/A*	*N/A*	***1.4%***	***6.0%***	***7.8%***	***14.4%***	***21.2%***
Total Service Plan Elements Incremental Impacts			***34,962***	***96,918***	***136,958***	***160,864***	***174,094***
Total Transit Program Ridership	**378,699**	**386,543**	**429,512**	**499,641**	**548,025**	**580,447**	**602,372**
% Ridership Increase of Service Plan Impacts/Base Case Ridership	N/A	N/A	8.9%	24.1%	33.3%	38.3%	40.6%
% Ridership of Service Plan Impacts/Total Transit Ridership	N/A	N/A	8.1%	19.4%	25.0%	27.7%	28.9%

Assumptions:

0.02 annual population growth in Rocky Mount
0.023 annual population growth in non-urbanized Study Area

TABLE 15.3
TRT FY 2008-09 PERFORMANCE ANALYSIS

FY 2008-09 Performance Analysis				
Line Item	**Fixed Routes/ Paratransit Urban**	**Paratransit Urban**	**Paratransit Rural**	**Systemwide**
One-way Passenger Trips	280,902	7,835	89,962	378,699
Operating Expenses	$677,433	$115,734	$1,312,796	$2,105,963
Passenger Fares	$244,945	$10,442	$15,178	$270,565
Vehicle Service Hours	19,429	4,113	48,817	72,359
Vehicle Service Miles	322,828	65,675	1,112,829	1,501,332
Passenger Trips / Vehicle Service Hours	14.5	1.9	1.8	5.2
Passenger Trips / Vehicle Service Miles	0.87	0.12	0.08	0.25
Operating Cost per Passenger - Trip	$2.41	$14.77	$14.59	$5.56
Operating Subsidy per Passenger - Trip	$1.54	$13.44	$14.42	$4.85
Farebox Recovery Ratio	36.16%	9.02%	1.16%	12.85%
Fare per passenger trip	**$0.87**	**$1.33**	**$0.17**	**$0.71**

Source: TRT FY 2008-09 OpStats

TABLE 15.4
FIVE-YEAR PLAN ESTIMATED FAREBOX REVENUES

	Actual	Estimated	Projected				
	FY 2008-09	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15
Base Case Fare Revenue							
Fixed Routes	$244,945	$249,844	$254,841	$259,938	$265,137	$270,439	$275,848
Paratransit Urban	$10,442	$10,651	$10,864	$11,081	$11,303	$11,529	$11,759
Paratransit Rural	$15,178	$15,527	$15,884	$16,249	$16,623	$17,005	$17,396
Total	**$270,565**	**$276,022**	**$281,589**	**$287,268**	**$293,062**	**$298,973**	**$305,004**
Service Plan Elements Incremental Impacts:							
Urban Fixed-Route Network Revenue							
Phase I:							
New 10th fixed route - 'East Rocky Mount'			$14,131	$19,958	$22,619	$23,071	$23,533
Golden East route extension + Sunset rerouting			$15,218	$21,704	$24,359	$24,846	$25,343
Phase I Total			*$29,350*	*$41,662*	*$46,978*	*$47,917*	*$48,876*
Phase II:							
Extended Evening Fixed-Route Service Monday-Friday				$35,481	$50,110	$56,791	$57,927
Enhanced Saturday service					$4,612	$6,514	$7,383
Phase II Total				*$35,481*	*$54,722*	*$63,305*	*$65,310*
Total Urban Fixed-Route Network Revenue			***$29,350***	***$77,143***	***$101,700***	***$111,223***	***$114,185***
% Increase Aboove Base Case Fixed-Route Revenue	*N/A*	*N/A*	*11.5%*	*29.7%*	*38.4%*	*41.1%*	*41.4%*
Urban Demand-Responsive Network: DARTS Revenue							
Extended Evening Service Monday-Friday				$3,572	$5,045	$5,718	$5,832
Paratransit Feeder Service Monday-Friday					$11,843	$16,725	$18,955
Sunday Demand-Responsive Service to/from Retail Areas (reverse-commute focused)						$1,705	$2,408
Grouping of Trips						$853	$1,204

Total Urban Demand-Responsive Network: DARTS Revenue				***$3,572***	***$16,888***	***$25,001***	***$28,400***
% Increase Above Base Case Paratransit Urban Revenue	*N/A*	*N/A*	*N/A*	*32.2%*	*149.4%*	*216.9%*	*241.5%*
Rural Demand-Responsive Network: RGP Revenue							
Saturday Service			$220	$312	$354	$362	$371
Extended Evening Monday-Friday Service				$331	$469	$533	$545
US-64 East-West Corridor Reverse-Commute service						$751	$1,063
US-301/NC 97 North-South Corridor Reverse-Commute service							$768
Total Rural Demand-Responsive Network: RGP Revenue			***$220***	***$643***	***$823***	***$1,646***	***$2,747***
Rural Demand-Responsive Network: ADA Revenue							
Extended Evening Service Monday-Friday				$331	$469	$533	$545
Saturday Service						$277	$392
Total Rural Demand-Responsive Network: ADA Revenue				***$331***	***$469***	***$810***	***$937***
Total Rural Network % Increase Above Base Case Rural Revenue	*N/A*	*N/A*	*1.4%*	*4.0%*	*5.0%*	*9.7%*	*15.8%*
Total Service Plan Elements Incremental Impacts Revenue			***$29,570***	***$81,689***	***$119,880***	***$138,680***	***$146,270***
Total Transit Program Revenue	**$270,565**	**$276,022**	**$311,158**	**$368,957**	**$412,942**	**$437,653**	**$451,274**
% Revenue Increase of Service Plan Impacts/Base Case Revenue	*N/A*	*N/A*	10.5%	28.4%	40.9%	46.4%	48.0%
% Revenue of Service Plan Impacts/Total Transit Revenue	*N/A*	*N/A*	9.5%	22.1%	29.0%	31.7%	32.4%

TABLE 15.5
FIVE-YEAR PLAN CAPITAL PLAN

	Projected					
	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	Funding Source
Project Costs:						
Downtown Transfer Center / Bus Station renovation	$24,000					S.5307
Establish Satellite Transfer Points at:						
-Golden East Crossing Mall	$25,000					S.5309
-Oakwood Shopping Center	$15,000					S.5309
Edgecombe Community College superstop	$10,000					S.5309
Operations and Maintenance center:						
-Shop Equipment	$90,000					S.5307
-Purchase Existing Facility	$160,000					S.5307
Fare options revision - feasibility study and implementation	$30,000					S.5307
Transit and Pedestrian Access Program inventory	$10,000	$10,300	$10,609	$10,927		S.5317
Service Safety Improvements:						
-Install Bus Shelters, Bus Signs, Bus Cameras, Fareboxes & Preventive Maint.	$267,000	$271,000				S.5307
-Bus Turn-outs along US 301 and Benvenue Rd			$127,182			S.5303
Vahicle Fleet Replacement and Expansion						

-Orion VII: Bus Expansion: Hybrid Diesel-Electric bus	$360,500					S.5309
-Vans: Expansion - Corridor Reverse-Commute Service:						
--US-64 East-West				$100,336		S.5316
--US-301/NC 97 North-South					$103,347	S.5316
-Vans: Replacement						
--Coach	$185,400					S.5307
--Lift	$451,140	$387,229	$478,614	$246,486		S.5309
--Lift (UPWP)					$164,324	S.5303
--Standard	$212,180	$262,254				S.5303
--Standard (UPWP)				$45,020		S.5303
Feasibility Study - paratransit rural scheduling software upgrade				$30,000		S.5311
Total Capital Plan Costs	***$1,840,220***	***$930,783***	***$616,406***	***$432,770***	***$267,671***	

Assumptions: 3 percent annual inflation rate where applicable.

TABLE 15.6
FIVE-YEAR PLAN FIXED-ROUTES FINANCIAL PLAN

	Actual	Estimated	Projected				
	FY 2008-09	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15
Urban Fixed-Routes: Base Case							
Operating Costs	$677,433	$697,756	$718,689	$740,249	$762,457	$785,331	$808,891
Farebox Revenues	$244,945	$249,844	$254,841	$259,938	$265,137	$270,439	$275,848
Other revenue (vehicle sales, interest, advertising, other)			$23,000	$5,150	$5,305	$5,464	$5,628
Urban Fixed-Routes Base Case Operating Subsidy	***$432,488***	***$447,912***	***$440,848***	***$475,162***	***$492,016***	***$509,428***	***$527,415***
Urban Fixed Routes Operating Assistance - Base Case							
Federal assistance	$273,048	$281,239	$220,423	$237,580	$246,007	$254,713	$263,707
State assistance	$136,525	$140,620	$110,212	$118,791	$123,004	$127,357	$131,854
Local government assistance	$136,525	$140,620	$110,212	$118,791	$123,004	$127,357	$131,854
Urban Network Base Case Operating Assistance	***$546,097***	***$562,480***	***$440,848***	***$475,162***	***$492,016***	***$509,428***	***$527,415***
Urban Fixed-Routes: Plan Recommendations							
Operating Costs: Proposed Improvements	*n/a*	*n/a*	*$119,463*	*$268,880*	*$296,090*	*$304,973*	*$314,122*
Farebox Revenues	*n/a*	*n/a*	$29,350	$77,143	$101,700	$111,223	$114,185
Urban Fixed-Routes Plan Recommendations Operating Subsidy	*n/a*	*n/a*	***$90,113***	***$191,737***	***$194,390***	***$193,750***	***$199,937***
Urban Fixed-Routes Operating Assistance - Plan Recommendations							
Phase I:							
S. 5307: New 10th fixed route - 'East Rocky Mount' - Operating Costs			***$43,388***	***$39,287***	***$38,403***	***$39,781***	***$41,205***
Federal assistance			$21,694	$19,643	$19,202	$19,891	$20,603
State assistance			$10,847	$9,822	$9,601	$9,945	$10,301

Local share			$10,847	$9,822	$9,601	$9,945	$10,301
S.5307: Golden East route extension - Operating Costs			***$46,725***	***$42,098***	***$41,357***	***$42,841***	***$44,375***
Federal assistance			$23,363	$21,049	$20,679	$21,421	$22,188
State assistance			$11,681	$10,525	$10,339	$10,710	$11,094
Local share			$11,681	$10,525	$10,339	$10,710	$11,094
Phase I Total Operating Costs			*$90,113*	*$81,385*	*$79,760*	*$82,623*	*$85,581*
Phase I Total Operating Assistance			$90,113	$81,385	$79,760	$82,623	$85,581
Phase II:							
S.5307: Extended Evening Fixed-Route Service Monday-Friday - Operating Costs				***$110,352***	***$100,098***	***$97,923***	***$101,429***
Federal assistance				$55,176	$50,049	$48,962	$50,714
State assistance				$27,588	$25,025	$24,481	$25,357
Local share				$27,588	$25,025	$24,481	$25,357
CMAQ: Enhanced Saturday service (assistance limited to 3 years) - Operating Costs					***$14,532***	***$13,204***	***$12,927***
Federal assistance					$7,266	$6,602	$6,464
State assistance					$0	$0	$0
Local share					$7,266	$6,602	$6,464
Phase II Total Operating Costs				*$110,352*	*$114,630*	*$111,127*	*$114,356*
Phase II Total Operating Assistance				***$110,352***	***$114,630***	***$111,127***	***$114,356***
Total Operating Costs: Phase I and Phase II Plan Recommendations	n/a	n/a	**$90,113**	**$191,737**	**$194,390**	**$193,750**	**$199,937**
Total Operating Assistance: Phase I and Phase II Plan Recommendations	n/a	n/a	**$90,113**	**$191,737**	**$194,390**	**$193,750**	**$199,937**
Total Local Share: Phase I and Phase II Plan Recommendations	*n/a*	*n/a*	***$22,528***	***$47,934***	***$52,230***	***$51,739***	***$53,216***
% Increase Local Share Recommendations vs. Base Case	*n/a*	*n/a*	*20.4%*	*40.4%*	*42.5%*	*40.6%*	*40.4%*

TABLE 15.7
FIVE-YEAR PLAN DARTS FINANCIAL PLAN

	Actual	Estimated	Projected				
	FY 2008-09	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15
Urban Demand-Responsive (DARTS): Base Case							
Operating Costs	$115,734	$119,206	$122,782	$126,465	$130,259	$134,167	$138,192
Farebox Revenues	$10,442	$10,651	$10,864	$11,081	$11,303	$11,529	$11,759
Urban Demand-Responsive (DARTS) Base Case Operating Subsidy	***$105,292***	***$108,555***	***$111,918***	***$115,384***	***$118,957***	***$122,638***	***$126,433***
Urban Demand-Responsive (DARTS) Operating Assistance – Base Case							
Federal assistance	$76,535	$78,831	$60,824	$62,708	$64,650	$66,651	$68,713
State assistance	$64,291	$66,219	$51,094	$52,676	$54,307	$55,988	$57,720
Local government assistance							
Urban Demand-Responsive (DARTS) Base Case Operating Assistance	***$140,825***	***$145,050***	***$111,918***	***$115,384***	***$118,957***	***$122,638***	***$126,433***
Urban Demand-Responsive (DARTS): Plan Recommendations							
Operating Costs: Proposed Improvements	*n/a*	*n/a*		*$60,898*	*$266,583*	*$319,045*	*$328,616*
Farebox Revenues	*n/a*	*n/a*		$3,572	$16,888	$25,001	$28,400
Other revenue (vehicle sales, interest, advertising, other)	*n/a*	*n/a*					
Urban Demand-Responsive (DARTS) Plan Recommendations Operating Subsidy Requirements	*n/a*	*n/a*		***$57,326***	***$249,695***	***$294,044***	***$300,216***
Urban Demand-Responsive (DARTS) Operating Assistance –Plan Recommendations							
S.5307: Extended Evening Service Monday-Friday - Operating Cost				***$57,326***	***$57,680***	***$58,889***	***$60,713***
Federal assistance				$28,663	$28,840	$29,445	$30,356
State assistance				$14,331	$14,420	$14,722	$15,178

Local share				$14,331	$14,420	$14,722	$15,178
S.5317: Paratransit Feeder Service Monday-Friday Operating Cost					***$192,015***	***$193,248***	***$197,317***
Federal assistance					$96,007	$96,624	$98,658
State assistance					$0	$0	$0
Local share					$96,007	$96,624	$98,658
S.5316: Sunday Demand-Responsive Service to/from Retail Areas (reverse-commute) Operating Cost						***$27,938***	***$28,124***
Federal assistance						$13,969	$14,062
State assistance							
Local share						$13,969	$14,062
CMAQ: Grouping of Trips (assistance limited to 3 years) - Operating Cost						***$13,969***	***$14,062***
Federal assistance						$6,984	$7,031
State assistance						$0	$0
Local share						$6,984	$7,031
Total Urban Demand-Responsive (DARTS) Plan Recommendations Operating Costs				**$57,326**	**$249,695**	**$294,044**	**$300,216**
Total Urban Demand-Responsive (DARTS) Plan Recommendations Operating Assistance				**$57,326**	**$249,695**	**$294,044**	**$300,216**
Total Local Share: Plan Recommendations	***n/a***	***n/a***	***n/a***	***$14,331***	***$110,427***	***$132,300***	***$134,930***

TABLE 15.8
FIVE-YEAR PLAN RGP FINANCIAL PLAN

	Actual	Estimated	Projected				
	FY 2008-09	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15
Rural Demand-Responsive (RGP): Base Case							
Operating Costs	$68,570	$70,627	$72,745	$74,928	$ 77,176	$79,491	$81,876
Farebox Revenues	$793	$811	$827	$844	$ 861	$878	$895
Rural Demand-Responsive (RGP) Base Case Operating Subsidy	***$67,777***	***$69,816***	***$71,918***	***$74,084***	***$76,315***	***$78,613***	***$80,980***
Rural Demand-Responsive (RGP) Operating Assistance – Base Case							
Urban Demand-Responsive (RGP) Base Case Operating Assistance	***$0***	***$0***	***$71,918***	***$74,084***	***$76,315***	***$78,613***	***$80,980***
Urban Demand-Responsive (RGP): Plan Recommendations							
Operating Costs: Proposed Improvements	*n/a*	*n/a*	*$28,807*	*$73,322*	*$75,522*	*$178,124*	*$286,814*
Farebox Revenues	*n/a*	*n/a*	$220	$643	$823	$1,646	$2,747
Rural Demand-Responsive (RGP) Plan Recommendations Operating Subsidy	*n/a*	*n/a*	***$28,587***	***$72,679***	***$74,699***	***$176,478***	***$284,067***
Rural Demand-Responsive (RGP) Operating Assistance - Plan Recommendations							
S.5311: Saturday Service Operating Cost			***$ 28,587***	***$ 29,360***	***$30,207***	***$31,116***	***$32,052***
Federal assistance			$14,293	$14,680	$ 15,104	$15,558	$16,026
State assistance			$0	$0	$0	$0	$0
Local share			$ 14,293	$14,680	$15,104	$15,558	$16,026
S.5311: Extended Evening Monday-Friday Service Operating Cost				***$43,320***	***$44,491***	***$45,776***	***$47,153***
Federal assistance				$21,660	$22,246	$22,888	$23,577
State assistance				$0	$0	$0	$0

Local share				$21,660	$22,246	$22,888	$23,577
S.5316: US-64 East-West Corridor Reverse-Commute Service Operating Cost						***$99,586***	***$102,283***
Federal assistance						$ 49,793	$51,142
State assistance						$0	$0
Local share						$49,793	$51,142
S.5316: US-301/NC 97 Corridor Reverse-Commute Service Operating Cost							***$102,579***
Federal assistance							$51,289
State assistance							$0
Local share							$51,289
Total Rural Demand-Responsive (RGP) Plan Recommendations Operating Costs			**$28,587**	**$72,679**	**$74,699**	**$176,478**	**$284,067**
Total Rural Demand-Responsive (RGP) Plan Recommendations Operating Assistance			**$28,587**	**$72,679**	**$74,699**	**$176,478**	**$284,067**
Total Local Share: Plan Recommendations	***n/a***	***n/a***	***$14,293***	***$36,340***	***$37,349***	***$88,239***	***$142,034***

TABLE 15.9
FIVE-YEAR PLAN ADA FINANCIAL PLAN

	Actual	Estimated	Projected				
	FY 2008-09	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15
Rural Demand-Responsive (ADA) - Base Case							
Operating Costs	$1,244,227	$1,281,553	$1,320,000	$1,359,600	$1,400,388	$1,442,400	$1,485,672
Farebox Revenues	$14,385	$14,716	$15,010	$15,310	$15,616	$15,929	$16,247
Other revenue (vehicle sales, interest, advertising, other)	$1,282,899	$1,308,557	$1,334,728	$1,361,422	$1,388,651	$1,416,424	$1,444,752
Rural Demand-Responsive (ADA) Base Case Operating Subsidy	***$(53,057)***	***$(41,719)***	***$(29,738)***	***$(17,133)***	***$(3,879)***	***$10,047***	***$24,672***
Rural Demand-Responsive (ADA) Operating Assistance – Base Case							
Federal assistance	$0					$5,047	$12,300
State assistance	$116,401					$2,500	$6,150
Local government assistance	$34,607					$2,500	$6,150
Urban Demand-Responsive (ADA) Base Case Operating Assistance	***$151,008***					***$10,047***	***$24,600***
Urban Demand-Responsive (ADA) - Plan Recommendations							
Operating Costs: Proposed Improvements	*n/a*	*n/a*		*$43,647*	*$44,957*	*$80,153*	*$82,558*
Farebox Revenues	*n/a*	*n/a*		$331	$469	$810	$937
Rural Demand-Responsive (ADA) Plan Recommendations Operating Subsidy Requirements	*n/a*	*n/a*		***$43,316***	***$44,488***	***$79,344***	***$81,621***
Rural Demand-Responsive (ADA) Operating Assistance - Plan Recommendations							
S.5311: Extended Evening Service Monday-Friday - Operating Cost				***$43,316***	***$44,488***	***$45,772***	***$47,149***
Federal assistance				$21,658	$22,244	$22,886	$23,575
State assistance				$0	$0	$0	$0
Local share				$21,658	$22,244	$22,886	$23,575

S.5311: Saturday Service - Operating Cost						*$33,571*	*$34,472*
Federal assistance						$16,786	$17,236
State assistance						$0	$0
Local share						$16,786	$17,236
Total Rural Demand-Responsive (ADA) Plan Recommendations Operating Costs				**$43,316**	**$44,488**	**$79,344**	**$81,621**
Total Rural Demand-Responsive (ADA) Plan Recommendations Operating Assistance				**$43,316**	**$44,488**	**$79,344**	**$81,621**
Total Local Share: Plan Recommendations	*n/a*	*n/a*		*$21,658*	*$22,244*	*$39,672*	*$40,810*

TABLE 15.10
FIVE-YEAR PLAN SYSTEMWIDE FINANCIAL PLAN

	Actual	Estimated	Projected				
	FY 2008-09	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15
Projected Systemwide Financials - Base Case							
Operating Costs	$1,428,530	$1,471,386	$1,515,527	$1,560,993	$1,607,823	$1,656,057	$1,705,739
Farebox Revenues	$270,565	$276,022	$281,542	$287,173	$292,916	$298,775	$304,750
Other revenue (vehicle sales, interest, advertising, agency contracts)	$1,282,899	$1,308,557	$1,357,728	$1,366,572	$1,393,955	$1,421,887	$1,450,380
Total Operating Subsidy Requirements	*$ (124,934)*	*$(113,193)*	*$ (123,743)*	*$ (92,752)*	*$ (79,049)*	*$ (64,605)*	*$ (49,391)*
Federal assistance	$349,583	$360,070	$ (57,006)	$(41,360)	$ (34,353)	$ (26,947)	$ (19,199)
State assistance	$317,216	$206,840	$ (18,367)	$(13,596)	$ (13,303)	$ (10,488)	$ (6,499)
Local government assistance	$ 171,132	$140,620	$ (48,370)	$(37,797)	$ (31,393)	$ (27,169)	$ (23,693)
Total Operating Assistance - Base Case	*$837,930*	*$707,530*	*$(123,743)*	*$(92,753)*	*$(79,049)*	*$ (64,605)*	*$(49,391)*
Local Share % of Base Case Assistance	20.4%	19.9%	39.1%	40.7%	39.7%	42.1%	48.0%
Projected Systemwide Financials - Plan Recommendations							
Operating Costs			$28,807	$239,811	$596,696	$793,246	$920,390
Farebox Revenues			$220	$20,069	$76,293	$103,415	$115,354
Total Operating Subsidy Requirements			*$28,587*	*$219,742*	*$520,403*	*$689,831*	*$805,036*
Federal assistance			$14,293	$88,211	$237,956	$322,028	$378,941
State assistance			$14,293	$40,616	$39,993	$40,498	$41,790
Local government assistance			$14,293	$83,934	$235,312	$319,976	$376,753
Total Operating Assistance - Plan Improvements			42,880	212,762	513,260	682,501	797,485
Local Share % of Plan Improvements Assistance			*33.3%*	*39.4%*	*45.8%*	*46.9%*	*47.2%*

APPENDIX A: ON-BOARD SURVEY RESULTS

ON-BOARD SURVEY RESULTS

A.1 ON-BOARD SURVEY – AN OVERVIEW

M/A/B conducted an on-board survey of fixed route and demand responsive Tar River Transit riders to determine rider characteristics, trip purposes, trip origins and destinations, riding habits of the passengers, perceptions of service and potential improvements. The surveys were conducted on all nine fixed routes by M/A/B staff that included locally hired students from the North Carolina Wesleyan College. Surveyors were on hand to verbally administer the surveys to disabled or limited English proficiency persons. The survey results were used to identify existing benefits and deficiencies and help quantify transit demand.

A.2 METHODOLOGY

The on-board survey was offered to the riders of the Tar River Transit Bus service on January 20, 2010. The bus riders completed a total of 263 bus surveys. Van riders completed additional 7 surveys – those surveys were handed out to the riders by van drivers from January 20th to 26th, 2010.. There were slight differences between bus and van survey design. The results of van surveys should be treated as less significant when compared to the bus surveys due to the smaller sample of respondents. The summary is not intended as a full statistical analysis of the results, but as an easy-reading summary of the results and their possible implications for the Tar River Transit.

Statistical note: In some cases, multiple answers were accepted from each respondent (i.e. riders could indicate that they used more than one other service). In those cases, the percentages analyzed and discussed actually constitute the proportion of valid responses rather than the number of respondents that answered the question. The questions where proportions were used include Question 2, 3, 4, 6, 7, and 10. For example, Question 2 in the bus survey has 7 possible answer choices. We received 263 surveys with 326 responses to the question. This is due to the fact some of the respondents picked multiple choices when answering a given question.

The summary of the results will begin with identification of the most important issues as gathered from both bus and van surveys, followed by more detailed analysis of the bus surveys, and, finally, the analysis of van surveys.

A.3 SUMMARY OF SIGNIFICANT ISSUES

The top issues identified in the surveys can be summarized as follows:

- Overall, the perception of both Tar River Transit Bus and Van service was good among the surveyed riders
- Many aspects of the Tar River Transit service were perceived to be first-rate by the riders, particularly cost of service, safety, and driver courtesy
- Most riders are captive transit users rather than choice users – they depend on Tar River Transit to get around

Several service improvements would result in increases in ridership levels:

- Expanding service hours, particularly weekday evening hours
- Increased frequency of service and serving more destinations, particularly within the City of Rocky Mount
- Offering a weekly/monthly discount pass
- More courteous drivers, more comfortable buses and more bus stops, as well as better access to printed and phone transit information

A.4 QUESTION-BY-QUESTION ANALYSIS: TAR RIVER TRANSIT BUS SERVICE

The actual on-board bus survey is shown in Figure A.1. For each question, the following are provided: **Purpose** (a brief explanation of why the question was asked, **Results** (a brief summary of the main results) and **Significance** (an assessment of what the results mean for Tar River Transit).

Figure A.1: Tar River Transit Bus Service On-Board Survey

Dear Rider: We are conducting a survey to improve **Tar River Transit Bus service** in Rocky Mount. Please help us by answering the questions below before you leave the bus.
All responses are confidential.

TAR RIVER TRANSIT

1. **How did you get to the bus stop for this trip?**
   - ☐ Walked
   - ☐ Bicycled
   - ☐ Drove alone
   - ☐ Was dropped off
   - ☐ Taxi
   - ☐ Transferred from another bus

2. **What is the purpose of this trip?**
   - ☐ Work
   - ☐ School
   - ☐ Recreation/Social
   - ☐ Shopping
   - ☐ Medical/Dental Services
   - ☐ Human/Social Services
   - ☐ Personal Business

3. **Why did you choose to ride the Tar River Transit Bus service for this trip? Mark all that apply.**
   - ☐ Disability
   - ☐ Limited mobility
   - ☐ Lack of alternatives
   - ☐ Cost of service
   - ☐ Environmental
   - ☐ Convenience
   - ☐ Avoid traffic

4. **If the Tar River Transit Bus service did not exist, how would you have made this trip?**
   - ☐ Tar River Transit Van service
   - ☐ Amtrak Train service
   - ☐ Greyhound Bus service
   - ☐ Walk
   - ☐ Bicycle
   - ☐ Drive alone
   - ☐ Ride with someone
   - ☐ Taxi
   - ☐ Buy or rent a car
   - ☐ I would have sent someone on this trip for me
   - ☐ I would not have made this trip

5. **How long have you been riding the Tar River Transit Bus service?**
   - ☐ Less than 1 year
   - ☐ 1-3 years
   - ☐ More than 3 years

6. **On average, how often do you ride each of the following transit services in Nash or Edgecombe Counties?**

	5+ per week	2-4 per week	1-4 per month	Occasionally	Never
Tar River Transit Bus Service (Urban – Rocky Mount)	☐	☐	☐	☐	☐
Tar River Transit Bus Service (Rural – County)	☐	☐	☐	☐	☐
Tar River Transit Van Service	☐	☐	☐	☐	☐
Amtrak Train	☐	☐	☐	☐	☐
Greyhound Bus	☐	☐	☐	☐	☐

7. **Please indicate your opinion of the following Tar River Transit Bus service qualities.**

	Excellent	Good	Average	Fair	Poor	No Opinion
Driver courtesy	☐	☐	☐	☐	☐	☐
Comfort: Buses	☐	☐	☐	☐	☐	☐
Bus stops	☐	☐	☐	☐	☐	☐
Transfer facility	☐	☐	☐	☐	☐	☐
Cost to ride	☐	☐	☐	☐	☐	☐
Hours of service	☐	☐	☐	☐	☐	☐
Places served	☐	☐	☐	☐	☐	☐
Service: Convenience	☐	☐	☐	☐	☐	☐
Frequency	☐	☐	☐	☐	☐	☐
Reliability	☐	☐	☐	☐	☐	☐
Safety	☐	☐	☐	☐	☐	☐
Schedule/information: Telephone	☐	☐	☐	☐	☐	☐
Printed	☐	☐	☐	☐	☐	☐

Please turn over →

Figure A1 Cont.

Tar River Transit Bus Service On-Board Rider Survey

TAR RIVER TRANSIT

Please help improve the service. All responses are confidential.

8. **Overall, how do you rate the Tar River Transit Bus service?**
   ☐ Excellent ☐ Good ☐ Average ☐ Fair ☐ Poor

9. **Are there any locations inside Nash or Edgecombe Counties that need Tar River Transit Bus service – if so, which ones? Please provide city and destination name (ex. Courthouse) or major cross streets.**

   Location:_____

   Location:_____

   Location:_____

10. **If the following IMPROVEMENTS were made, how many MORE TRIPS would you make, on average?**

IMPROVEMENTS	MORE TRIPS: 5+ per week	2-4 per week	1-4 per month	Occasional	None
More courteous drivers	☐	☐	☐	☐	☐
More comfortable: Buses	☐	☐	☐	☐	☐
Bus stops	☐	☐	☐	☐	☐
Transfer facility	☐	☐	☐	☐	☐
Bicycle racks on buses	☐	☐	☐	☐	☐
Lower cost to ride: Regular fare	☐	☐	☐	☐	☐
Monthly ride pass	☐	☐	☐	☐	☐
Student ride pass	☐	☐	☐	☐	☐
Youth ride pass	☐	☐	☐	☐	☐
Longer service hours: Weekday AM	☐	☐	☐	☐	☐
Weekday PM	☐	☐	☐	☐	☐
Weekend AM	☐	☐	☐	☐	☐
Weekend PM	☐	☐	☐	☐	☐
More places served: Nash County	☐	☐	☐	☐	☐
Edgecombe County	☐	☐	☐	☐	☐
Rocky Mount	☐	☐	☐	☐	☐
Triangle region	☐	☐	☐	☐	☐
Increased: Convenience	☐	☐	☐	☐	☐
Frequency	☐	☐	☐	☐	☐
Reliability	☐	☐	☐	☐	☐
Safety	☐	☐	☐	☐	☐
Better schedule/information: Telephone	☐	☐	☐	☐	☐
Printed	☐	☐	☐	☐	☐
On-line	☐	☐	☐	☐	☐

11. **Please provide any other comments or suggestions:**_____

_____

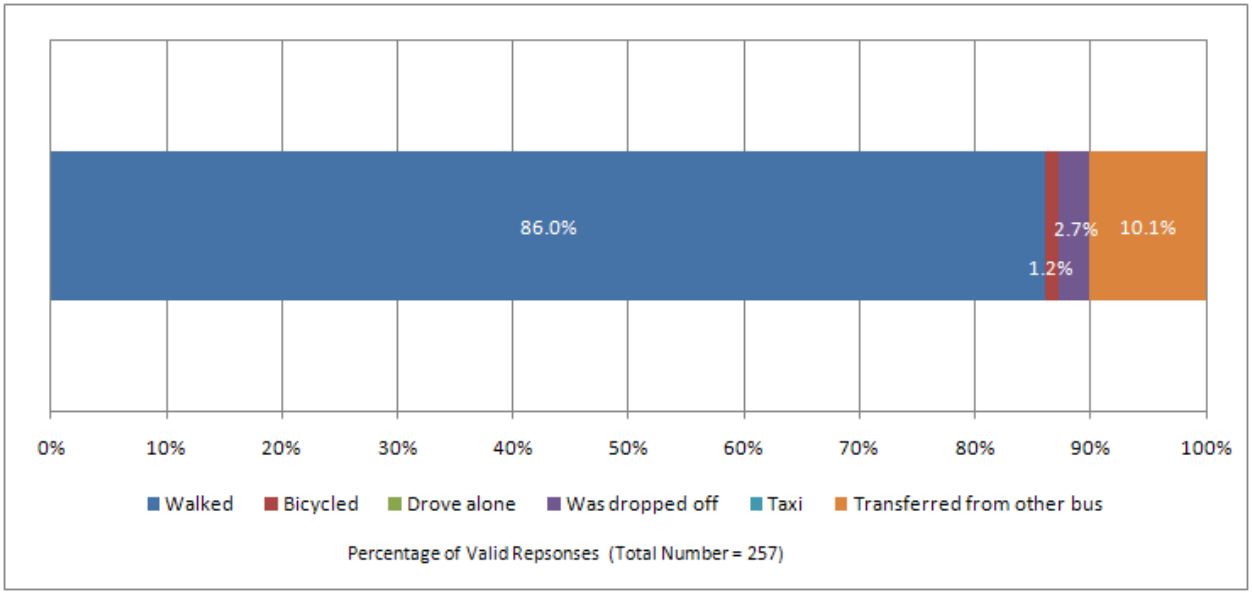
_____

_____

Thank you for participating. If you have any questions, comments, or suggestions, please contact Greg Saur at: 919-829-0328 (p) or transit@mabtrans.com.

A.4.1 How did you get to the bus stop for this trip?

Figure A.2: Tar River Transit Bus Service On-Board Survey: Question 1



Purpose:

To understand how riders get to Tar River Transit bus stops.

Results:

The vast majority of the respondents, 86 percent, reached their respective Tar River Transit's bus stops by walking (see Figure A.2). The second most popular mode utilized by the riders was transferring from another bus (at the Transfer Center, although an informal transfer point does exist at Oakwood Shopping Center that is served by the Oakwood and Meadowbrook routes) – 10.1 percent used this method to get to their Tar River Transit bus stop. Around 2.7 percent were dropped off at the bus stop, which means someone with access to a vehicle drove them to their bus stop. Finally, 1.2 percent of the riders rode bicycled to the bus stops.

Notably, none of the surveyed riders drove alone or took a cab to the bus stops.

Significance:

It is not surprising that the majority of riders walked to their bus stops. It is the most affordable transportation mode easily accessible to most people. It should be recognized that although sidewalk availability and condition in the most urbanized area of Rocky Mount (in/around downtown and in older established residential neighborhoods) is generally fair, many of the roadways served by Tar River Transit Bus/Van service lack suitable pedestrian facilities. Some bus stops are not ADA-accessible since they are located on streets lacking sidewalks.

One in ten riders used the Transfer Center in downtown Rocky Mount to switch buses – it clearly suggests that while the Transfer Center is popular and serves its role well, it could be augmented by a few satellite

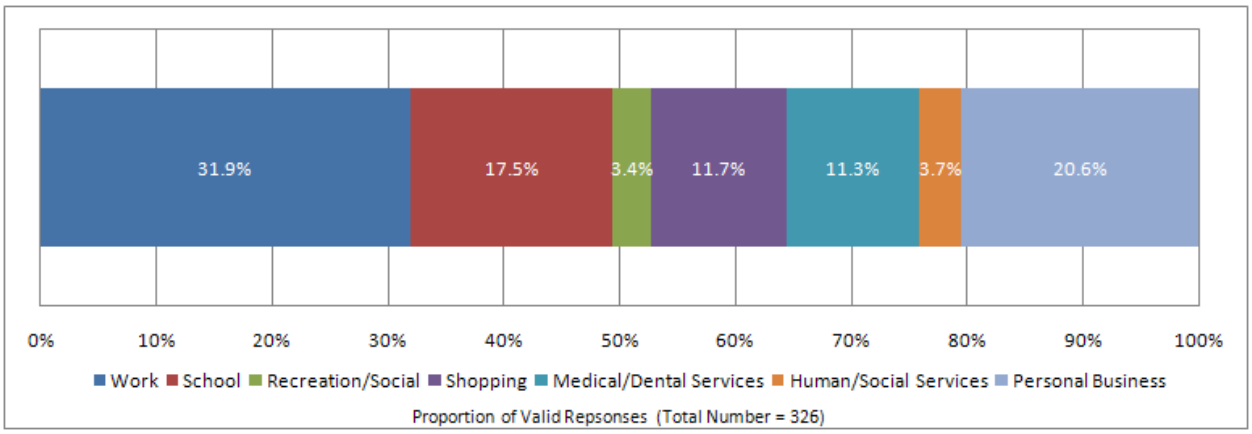
transfer points that would reduce the passenger load at the Transfer Center and increase passenger convenience. As expected, some of the respondents bicycled to their bus stops – it is necessary to investigate bicycle conditions in the Study Area to understand whether they are conducive to bicycling and whether bicycle racks installed at bus stops, the Transfer Center and on actual buses, along with striped bicycle lanes and paths, would promote bicycling as one of the means of traveling to bus stops.

Although none of the respondents took a cab to get to the bus stops, it should be noted some of the respondents mentioned taking a taxi in lieu of a return bus trip in the evening due to lack of other options. This is most likely due to the lack of sufficient late evening Tar River Transit Bus service.

The fact that none of the surveyed riders drove alone, or took a cab in order to get to the bus stops actually makes sense given the economics of those transportation modes – they are much more expensive in comparison to walking as a transportation mode.

A.4.2 What is the purpose of this trip?

Figure A.3: Tar River Transit Bus Service On-Board Survey: Question 2



Purpose:

To find out the transit trip purpose(s) and get an idea about the type of trips' origins/destinations.

Results:

As seen in Figure A.3, the greatest proportion of the trips, 31.9 percent, was for work purposes. About 20.6 percent of the trips were personal business trips, followed by 17.5 percent to and from school, 11.7 percent for shopping, and 11.3 percent for medical/dental services. Lastly, about 7.1 percent of the trips were for human/social services and recreation/social purposes.

We can separate the types of riders who utilize Tar River Transit services into three distinct groups:

1. **Regular riders** who take Tar River Transit service to get to work and school;
2. **Scheduled riders** who use Tar River Transit for medical/dental services and human/social services; and

3. **Variable riders** who use Tar river Transit services for personal business and recreation/social reasons, as well shopping trips.

Regular riders constitute nearly half, or 49.4 percent of the surveyed sample pool of responses, as the riders had the option to choose more than one category when answering the question, followed by variable riders who comprise 35.7 percent, and, lastly, scheduled riders at 15 percent.

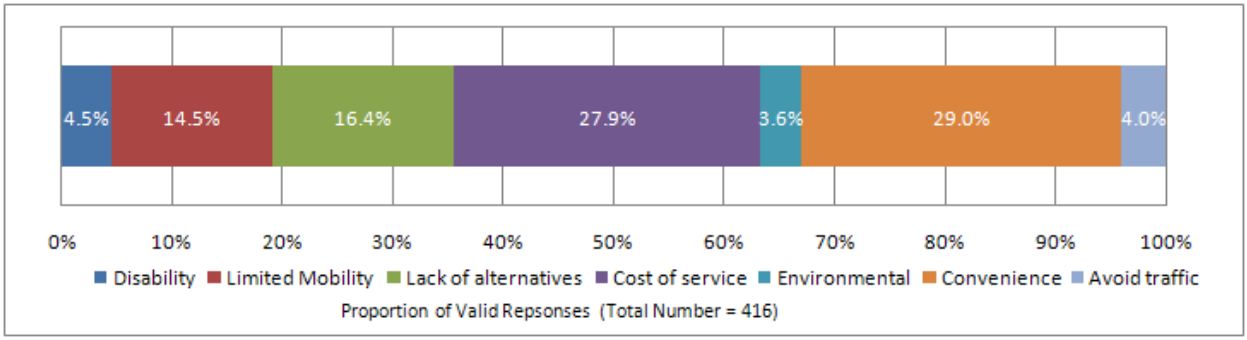
Significance:

The Tar River Transit Bus service trips are spread among all purposes, with regular riders comprising nearly half of all respondents, and scheduled riders constituting 15 percent of the ridership base.

Thus, Tar River Transit fulfills critical mobility need for residents (workers, students, hospital/clinic patients, etc).

A.4.3 Why did you choose to ride the Tar River Transit bus for this trip this trip? Mark all that apply.

Figure A.4: Tar River Transit Bus Service On-Board Survey: Question 3



Purpose:

To understand the reason(s) behind the decision to ride the Tar River Transit Bus. To separate captive (transit-dependent) versus choice riders.

Results:

As seen in Figure A.4, the majority of Tar River Transit bus riders are captive riders who fully depend on transit due to disability, limited mobility, lack of alternatives and lack of funds to pursue them. In fact, about 63.3 percent of the responses could be categorized as originating from captive riders (disability, limited mobility, lack of alternatives, and cost of service). The remaining 36.7 percent were choice riders who deliberately chose to ride Tar River Transit either because they perceived the service to be convenient, environmentally-friendly, or to avoid traffic.

In terms of individual categories, the greatest proportion of the responses, 29.0 percent, pointed to convenience as the main factor that influenced their decision to ride Tar River Transit buses. The cost of service was a significant factor as well, at 27.9 percent of the total proportion of responses. Lack of alternatives and limited mobility combined amounted to a staggering 30.9 percent of the proportion of all

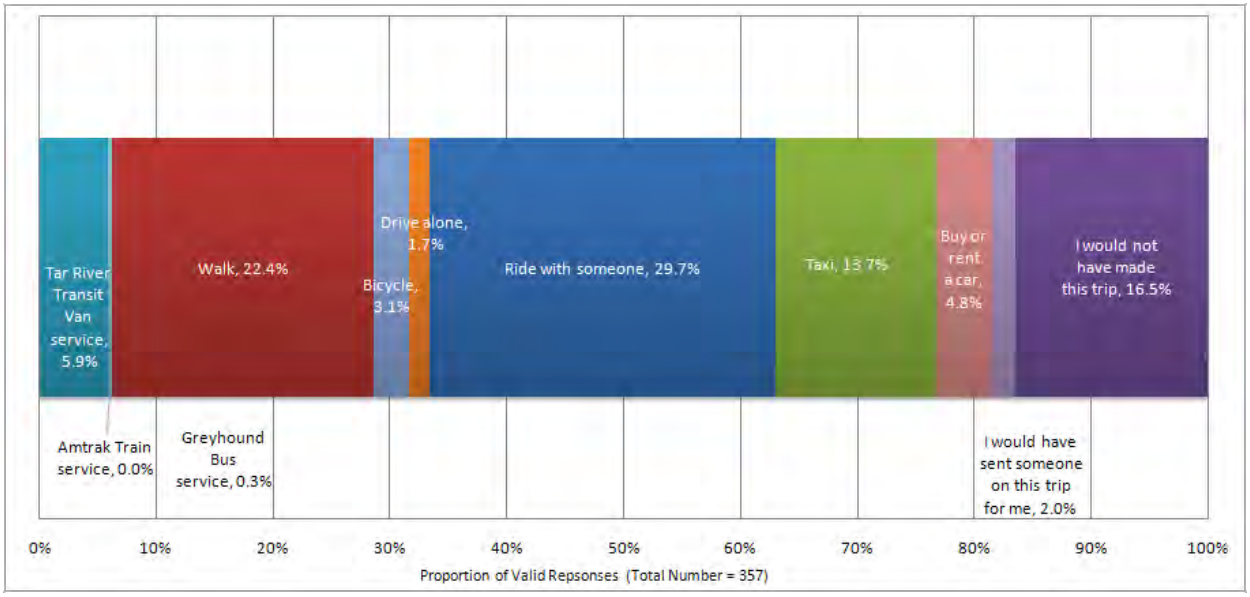
responses. Disability was a factor for 4.5 percent of responses, while avoiding traffic and environmental reasons stood at 4.0 percent and 3.6 percent, respectively.

Significance:

The majority of the riders are captive riders, and thus Tar River Transit needs to strive to serve their needs first, followed by accommodating choice riders who comprised the minority of the respondents.

A.4.4 If the Tar River Transit Bus service did not exist, how would you have made this trip?

Figure A.5: Tar River Transit Bus Service On-Board Survey: Question 4



Purpose:

To find out how riders would have made the trip if transit services were not available. To find out the relationship between captive and choice riders. To understand alternative transportation options.

Results:

The results are shown in Figure A.5. In terms of captive riders, about 16.5 percent of the respondents would not make the trip if the service was not available and 2.0 percent would have sent someone else on this trip for them – presumably someone with access to a vehicle. Thus, 18.5 percent of the respondents (or nearly one in five) would probably not have made the trip at all if Tar River Transit Bus service was not available. An additional 5.9 percent would have relied on Tar River Transit Van service instead. In addition, 29.7 percent of the respondents would get a ride from someone else, 13.7 percent would take a cab, and 0.3 percent would utilize existing Greyhound Bus service.

In terms of choice riders, some of them would opt to drive if the Tar River Transit services were not available: nearly 4.8 percent of the respondents stated they would rent or buy a vehicle, while 1.7 percent would drive alone. Non-motorized transportation would be the mode of choice for 25.5 percent of the

surveyed respondents (or one in four respondents); if Tar River Transit Bus service was not available, 22.4 percent would walk to their destinations while 3.1 percent would bicycle instead.

Significance:

The riders who indicated that they would not have made the trip at all or would send someone else on the trip (18.5 percent) are particularly important as their mobility would be greatly reduced if the Tar River Transit Bus service was not available. These riders essentially have no other means of traveling – they have very limited mobility options.

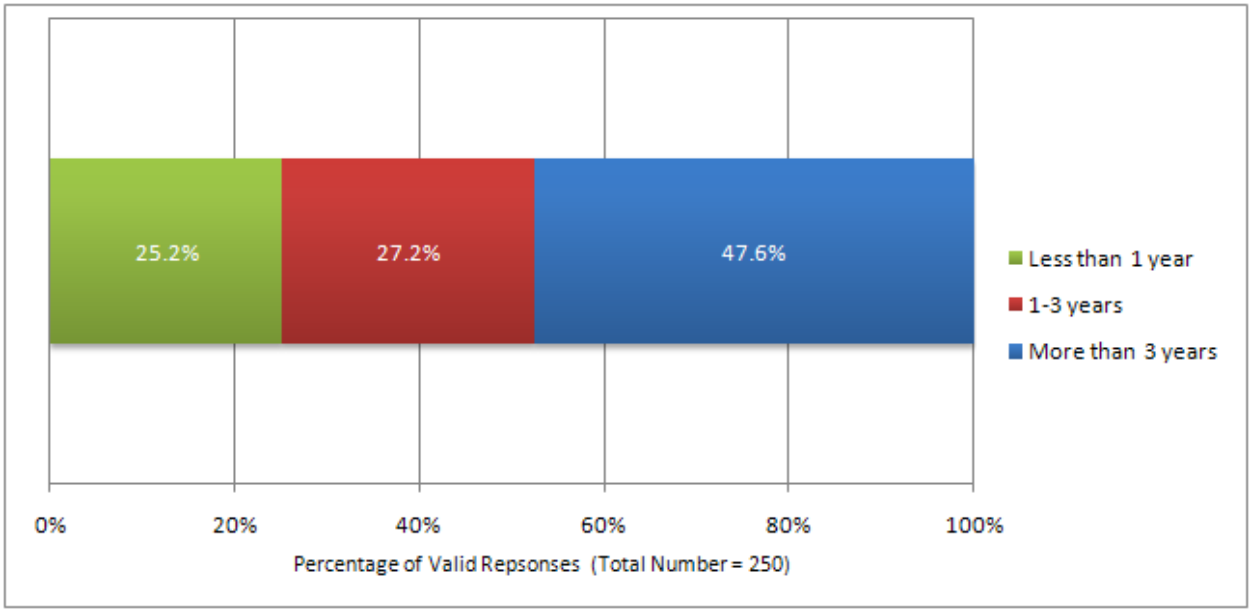
The fact that nearly 22.4 percent of the riders would choose to walk if the bus service was not available points to the importance of creating and sustaining a suitable pedestrian-friendly environment in and around Rocky Mount (this premise is further supported by the fact that 86 percent of Tar river Transit users actually walked to their bus stops as well - see Question 1). In addition, it suggests that at least some of the bus trip distances might not be very lengthy since the riders would seriously consider walking instead.

On the other hand, the data might suggest that walking would be chosen because other alternatives such as a taxi or buying/renting a car would be too costly. In effect, people would walk because that is the only mode of transportation that is affordable.

Lastly, it is important to recognize that about 6.2 percent of the respondents would still choose other existing transit services in the area even if Tar River Transit Bus service was not available (Tar River Transit Van service and Greyhound Bus service). These riders are likely to either be very much dependent on transit for their daily needs and/or like using transit in general (likely prefer to use transit over other modes). Although the multi-modal Transfer Center in downtown Rocky Mount includes a fully functional and very active Amtrak Train Station, none of the riders would have chosen the train in lieu of Tar River Transit Bus service – this is certainly due to Amtrak service being regional and long-distance in nature, and not very convenient/usable for local trips.

A.4.5 How long have you been riding the Tar River Transit Bus service?

Figure A.6: Tar River Transit Bus Service On-Board Survey: Question 5



Purpose:

To find out how long the riders have been patrons of the Tar River Transit Bus service and if their experiences with the service have been satisfactory enough to be retained as loyal riders.

Results:

As shown in Figure A.6, about 25 percent of the riders are fairly new to the bus system as they have been riding it for less than 1 year. More than 27 percent have used it for 1 to 3 years and close to 48 percent (or half of all riders) have used it for more than 3 years.

Overall, nearly 75 percent of the surveyed riders (or 3 in 4 riders) have been using Tar River Transit Bus service for longer than 1 year.

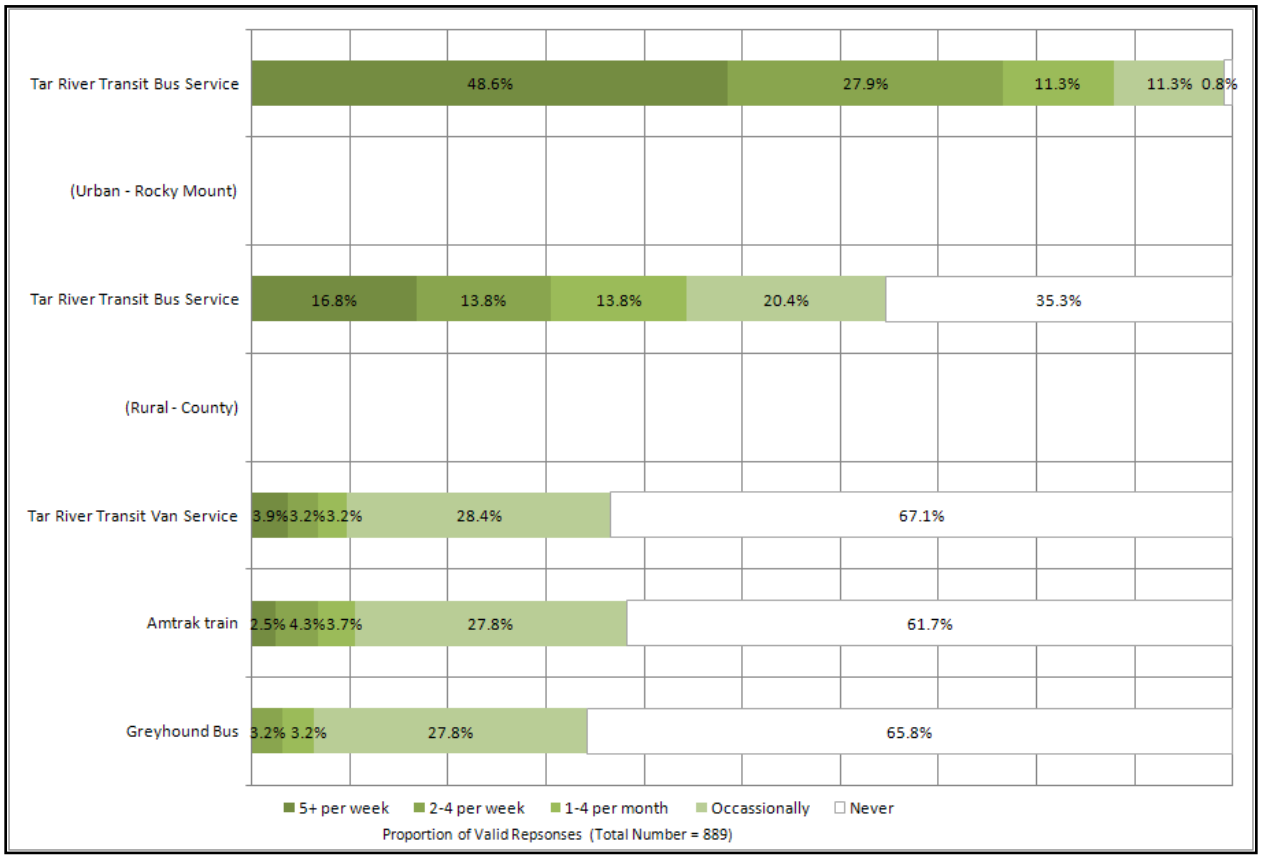
Significance:

The Tar River Transit Bus service riders are mostly established riders who have been utilizing the service for a very long time. This points out the important role the service plays in those people's daily lives - i.e. they are used to riding a bus and expect the service to continue, improve and expand. It also suggests a high quality of service since these are all return riders who have used Tar River Transit for a long time.

As important is the fact that one in every four surveyed riders is fairly new to the Tar River Transit Bus service – these riders are likely to be retained if the service continues improving and they perceive it be a viable alternative to other modes of transportation available to them in the future. This segment of riders presents an opportunity to Tar River Transit to increase the pool of riders utilizing the system on a regular basis in the future, especially if significant improvements would be made to the Tar River Transit system and if gasoline prices are high and/or the economy does not improve significantly.

A.4.6 On average, how often do you ride each of the following transit services in Nash or Edgecombe Counties?

Figure A.7: Tar River Transit Bus Service On-Board Survey: Question 6



On average, how often do you ride each of the following transit services in Nash or Edgecombe Counties?	5+ per week	2-4 per week	1-4 per month	Occassionally	Never
Tar River Transit Bus Service (Urban - Rocky Mount)	48.6%	27.9%	11.3%	11.3%	0.8%
Tar River Transit Bus Service (Rural - County)	16.8%	13.8%	13.8%	20.4%	35.3%
Tar River Transit Van Service	3.9%	3.2%	3.2%	28.4%	67.1%
Amtrak train	2.5%	4.3%	3.7%	27.8%	61.7%
Greyhound Bus	0.0%	3.2%	3.2%	27.8%	65.8%

Purpose:

To find out how often riders use bus service as well as all other existing public transit services in the Study Area.

Results:

The results are shown in Figure A.7. If we separate the results into three distinct categories: regular riders (those who ride Tar River Transit buses 2-4 times per week or more); occasional riders (who ride it 1-4 times per month/occasionally) and non-riders (who never ride Tar River Transit or never take certain Tar River Transit routes/do not utilize other transit services available in the Study Area), we can conclude that:

- Riders tend to regularly patronize Tar River Transit fixed bus urban routes, with 76.5 percent of the respondents patronizing it very often. In essence, 3 in 4 respondents ride urban buses regularly, 1 in 4 respondents occasionally, and only a small fraction, less than 1 percent, never do so.
- About 30.5 percent of respondents use Tar River Transit bus rural service (servicing rural areas in the Study Area) on a regular basis, with 34.2 percent of respondents using it occasionally, and 35.3 percent never using it. The results show that Tar River Transit Bus service riders are split into three distinct groups when it comes to their use of Tar River Transit bus services in the rural areas - close to $1/3^{rd}$ use it regularly, $1/3^{rd}$ use it on occasion, and $1/3^{rd}$ never use it.
- Only about 7.1 percent of respondents also use Tar River Transit Van service (servicing the entire Study Area) on a regular basis, with 31.6 percent of respondents using it occasionally, and 67.1 percent never using it. The results show that Tar River Transit Bus service riders tend to use Tar River Transit Van service only occasionally.
- Amtrak train is on par with Tar River Transit Van in terms of its usage among the surveyed Tar River Transit Bus service riders. Around 6.8 percent of the respondents use Amtrak regularly, with 31.5 percent of respondents using it occasionally, and 61.7 percent never using it. The results show that Tar River Transit Bus service riders tend to use Amtrak train service only occasionally.
- Finally, Greyhound Bus service is the least popular transit option in terms of its usage among the surveyed Tar River Transit Bus service riders. Only around 3.2 percent of the respondents use Greyhound Bus regularly, with 31 percent of respondents using it occasionally, and 65.8 percent never using it.

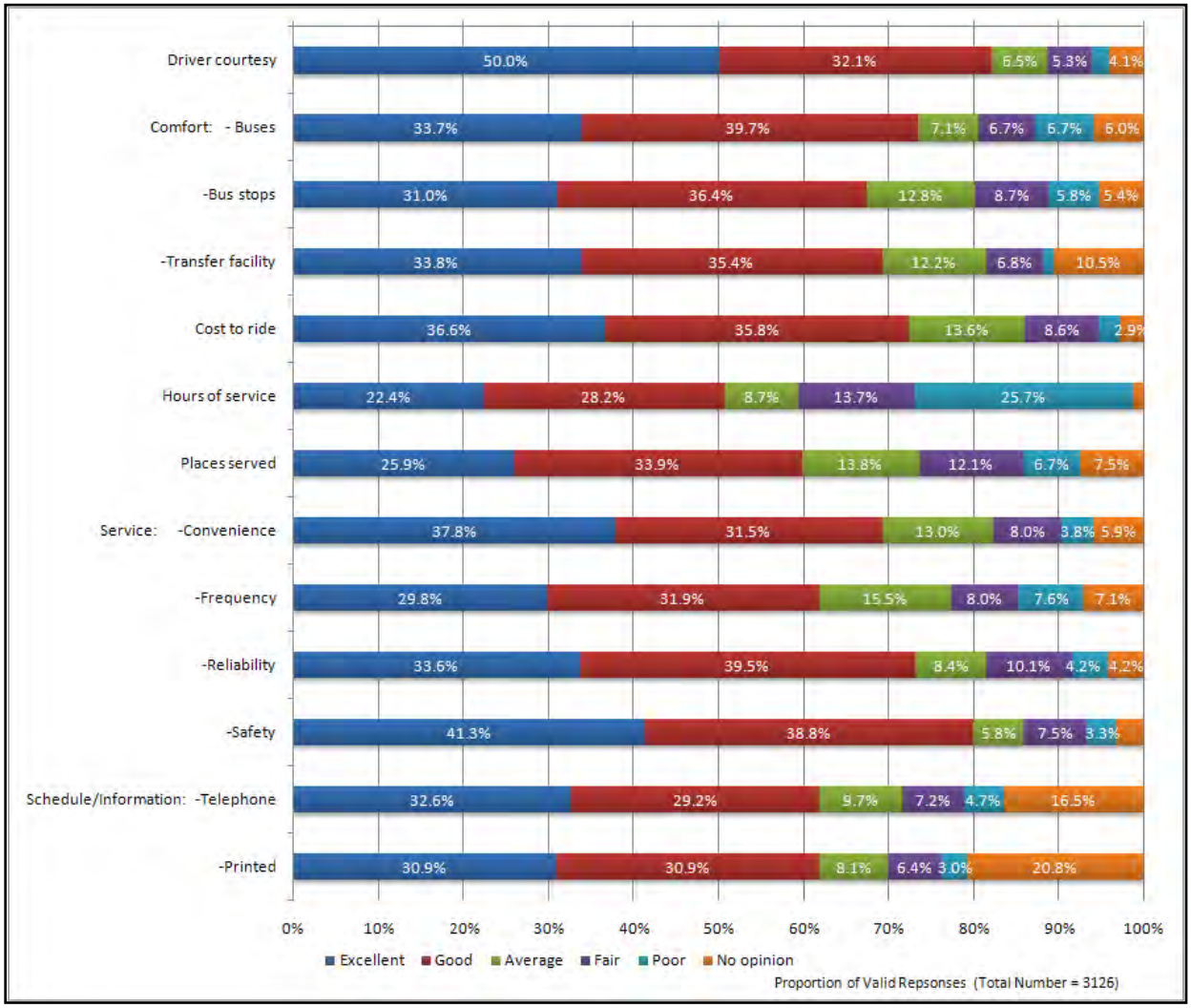
Significance:

The data suggests that the Tar River Transit urban fixed bus service is the transit option of choice for surveyed riders. While the fact that about 30 percent of regular riders use Tar River Transit rural bus service and 7 percent use Tar River Transit Van service regularly suggests cross-usage of services, it should be noted that more than 35 percent of the riders never use Tar River Transit rural bus service and more than 67 percent never use Tar River Transit Van service. The fairly high frequency of use of Tar River Transit rural bus service suggests there exists a market for the service among a certain group of users – thus, those groups could be targeted and service further tailored to suit their needs. One option would involve using a dedicated fixed bus route to replace the busiest RGP routes – on the other hand, a more cost-effective solution would be to entice those riders to already existing Tar River Transit urban fixed routes by adjusting those accordingly to capture them.

As already mentioned, the Tar River Transit Van, Amtrak train, and Greyhound Bus services are not very popular with Tar River Transit Bus service riders. In terms of the Tar River Transit Van, the demand-responsive type of transit is targeted and used by certain groups of people, and it is not likely that most Tar River Transit Bus service riders would qualify for that service. Amtrak and Greyhound offer regional transit links, but cannot really be used for local travel in the Study Area.

A.4.7 Please indicate your opinion of the following Tar River Transit Bus service qualities?

Figure A.8: Tar River Transit Bus Service On-Board Survey: Question 7



Please indicate your opinion of the following Tar River Transit Bus service qualities.	Excellent	Good	Average	Fair	Poor	No opinion
Driver courtesy	50.0%	32.1%	6.5%	5.3%	2.0%	4.1%
Comfort: - Buses	33.7%	39.7%	7.1%	6.7%	6.7%	6.0%
-Bus stops	31.0%	36.4%	12.8%	8.7%	5.8%	5.4%
-Transfer facility	33.8%	35.4%	12.2%	6.8%	1.3%	10.5%
Cost to ride	36.6%	35.8%	13.6%	8.6%	2.5%	2.9%
Hours of service	22.4%	28.2%	8.7%	13.7%	25.7%	1.2%
Places served	25.9%	33.9%	13.8%	12.1%	6.7%	7.5%
Service: -Convenience	37.8%	31.5%	13.0%	8.0%	3.8%	5.9%
-Frequency	29.8%	31.9%	15.5%	8.0%	7.6%	7.1%
-Reliability	33.6%	39.5%	8.4%	10.1%	4.2%	4.2%
-Safety	41.3%	38.8%	5.8%	7.5%	3.3%	3.3%
Schedule/Information: -Telephone	32.6%	29.2%	9.7%	7.2%	4.7%	16.5%
-Printed	30.9%	30.9%	8.1%	6.4%	3.0%	20.8%

Purpose:

To understand the riders' perceptions of the current quality of the Tar River Transit services rendered to them and to know which of these qualities need improvements.

Results:

Overall, as shown in Figure A.8, two qualities received 80 percent plus 'better than average' rating (good or excellent): driver courtesy and safety. In terms of 'comfort,' about 70 percent of the riders rated the buses, bus stops, and transfer facility as better than average (good or better). However, 14 percent of riders perceived the buses and bus stops to be below average (fair or poor rating).

The riders were generally very pleased with the costs of service, with 72.4 percent of them assigning it an above average rating (good or better), but they were actually quite dissatisfied with the hours of service and places served. Alarmingly, 25.7 percent of the riders thought the hours of service were 'poor' and close to 40 percent thought they were below average. This is also the quality that received the least 'No Opinion' responses from the surveyed riders, suggesting they hold a strong opinion about the inadequate hours of service as they made an extra effort to have a concrete answer on their survey forms. Nearly 60 percent of the respondents perceived places served better than average (good or excellent). This finding suggests that the existing Tar River Transit Bus service coverage area is quite adequate to current needs.

In terms of service convenience, frequency, reliability, and safety, the riders were most pleased with the safety aspect of service, with 80 percent of the respondents giving it an 'excellent' or 'good' rating (better than average), and still quite pleased with reliability and convenience at 71 and 69 percent, respectively. However, about 16 percent of the riders also thought frequency of service was worse than average ('fair' or 'poor'), and about 14 percent of the riders also gave reliability the same kind of rating. Altogether, the frequency of service was the service quality that the riders thought needed the most improvement.

Lastly, in terms of schedule/information, the riders were generally fairly satisfied with these service qualities, with about 62 percent rating them as above average (either 'excellent' or 'good' rating). About 19 percent of the riders held no opinion about those two qualities.

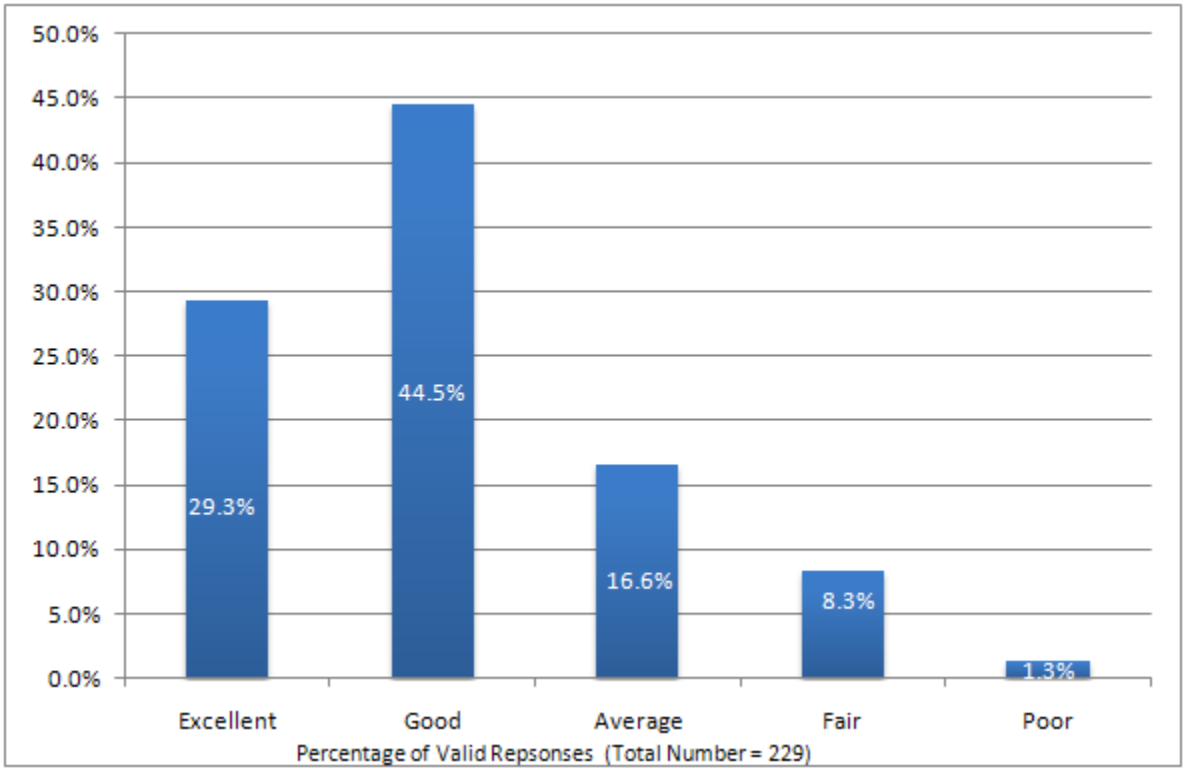
Significance:

The overall data suggest that service is perceived to be good (this perception is further confirmed in the answers given to Question 8 below). The riders are particularly satisfied with the cost of service, giving high ratings to the safety aspect of service and acknowledging high level of driver courtesy.

However, the results also suggest that the single quality in need of improvement is the hours or service. The field data and observations suggest that the riders are specifically not satisfied with the lack of late evening and Sunday service. In terms of reliability, the riders might specifically refer to the fact that the buses often arrive late at the Transfer Center and cause delays on all 9 fixed routes, as typically none of the buses can depart until all arrive at the Transfer Center allowing the riders to transfer. Field data and observations suggest that the Golden East/Ravenwood and Meadowbrook/Oakwood are the two routes that tend to arrive late at the Transfer Center and cause systemwide delays. Any improvements to those routes could result in alleviating the issue. Comfort-wise, filed work suggest that the bus stops could use better markings (including pavement markings) and there should be more of them on certain routes (particularly Golden East route) and more actual bus shelters should be installed as well.

A.4.8 Overall, how do you rate the Tar River Transit Bus service?

Figure A.9: Tar River Transit Bus Service On-Board Survey: Question 8



Purpose:

To understand the riders' overall impression of the current Tar River Transit Bus service.

Results:

Overall, as shown in Figure A.9, about 73.8 percent of the riders thought Tar River Transit Bus service was above average ('excellent' or 'good' rating), and about 16.6 percent thought the service was average. Lastly, about 9.6percent of the respondents perceived the service overall to be below average ('fair' or 'poor' rating).

Significance:

The data suggest that the riders generally rate the Tar River Transit Bus service as quite 'good.' However, this question is very general in nature, and the riders' answers to more specific Questions 7 and 10 also point out that perhaps the surveyed respondents were a bit too optimistic/generous when answering Question 8. In fact, it is likely that people tend to remember specific issues (i.e. dislikes of the bus service) associated with service much better and point them out if specific questions listing them are asked.

A.4.9 Are there any locations inside Nash or Edgecombe Countites that need Tar River Transit Bus service – if so, which ones? Please provide city and destination name (ex. Courthouse) or major cross streets.

Purpose:

To find out the riders' opinion about the areas/places where the Tar River Transit Bus service might be needed.

Results:

A variety of responses were given (see below), but a few areas the riders noted as needing the Tar River Transit Bus service the most were Edgecombe County, Nashville, and a variety of locations along US Highway 301 in Rocky Mount. In general, the riders would like better access to shopping areas as well as bus service to all major housing complexes. While some of the locations the riders requested might already be serviced by Tar River Transit buses, it seems the riders often suggested the actual bus stops were not close enough/within comfortable walking distance to those destinations (i.e. K-mart or Walmart or Big Lots stores).

Locations that need Tar River Transit service as requested by the surveyed passengers are shown in Table A.1 below (Question 9):

Table A.1: Tar River Transit Bus Service On-Board Survey: Question 9

Locations requested:
Edgecombe County (4)
Nashville (4)
301 Hwy (4)
Goldrock Rd (2)
Raleigh (2)
Sharburg (2)
Battleboro
Battleboro by Walmart add Satuday service / work 6 days/week
Tarboro
Tarboro - Heritage Hospital
Enfield - Whitaker
Enfield NC
Walmart
Walmart and Target
506 Vestal Rd Rocky Mount
Aldis grocery store by the Mall
All shopping centers and grocery stores
Arlington St
Bertshire
Big Lots and other stores
Clark St
Clover Dale
Crescent St/Sunset Ave
Easonburg on Saturday
Edgecombe County - Sutton Rd
Everywhere where there is no bus stop or service
Fairway Terrace, 1317 Wildwood
Green Pasture Rd
Hazel Woods
Housing complex past Golden East and Old Navy
K-Mart (closer to)
Nash Community College (night class)
Nash County
Cokey Rd Apartments -have to walk 1/2 mile to bus stop
New Town
Old Wilson Rd
Dortches (Red and White)
Rural areas/ Bulluck School Rd
Sunset Tower
Thorne Ridge Apts (Edgecombe)
Washington St
Whitakers
Willford elementary Schhol - Williford St, 1830

Significance:

A variety of responses suggest that there are many destinations currently not served by Tar River Transit Bus service with demand for transit. If the demand is analyzed and service warranted, these destinations should be serviced by Tar River Transit in the future.

A.4.10 If the following improvements were made, how many additional trips would you make, on average?

Purpose:

To find what types of service improvements could result in increased ridership levels.

Results:

Note: results were broken into six distinct sub-categories.

If we separate the results of each subcategory into three distinct groups: regular riders (those who ride Tar River Transit buses 2-4 times per week or more); occasional riders (who ride it 1-4 per month) and non-riders (who never ride Tar River Transit/do not utilize other transit services available in the Study Area), we can conclude that:

Comfort-wise (see Figure A.10a), there was not a single improvement that particularly stood out, but about 72 percent of the riders claimed that more courteous drivers, more comfortable buses and bus stops, would result in them becoming regular riders (take at least additional 2-4 transit trips per week). Improvements to an already very adequate transfer facility would result in close to 67 percent of respondents becoming regular riders (take at least additional 2-4 transit trips per week). Bicycle racks would be the single comfort improvement resulting in the smallest increase in potential ridership levels –while 40 percent of the surveyed riders would be more likely to become regular riders if bicycle racks were installed on buses, 43 percent would not care at all.

The riders were generally fairly satisfied with the current cost of Tar River Transit Bus service (see Figure A.10b). Still, roughly 63 percent of all respondents claimed they would become regular riders (make at least 2-4 or more transit trips per week) if some sort of a fare discount was implemented – either in the form of a discounted pass or an actual single ride fare decrease. In terms of cost reduction, the student ride pass has a slight edge in the number of positive responses among the other options presented in the survey. This exemplifies the importance of the Nash County Community College and Wesleyan College as important destinations in the Tar River Transit Bus service system – college students seemingly comprise a significant portion of the Tar River Transit riders particularly on the two fixed shuttle routes (TRT routes 8 and 9) and evidence suggests they would be more likely to use the service more if a student ride pass was available. The youth pass was the type of discount pass least likely to induce more ridership as close to 22 percent of the respondents claimed they would not make any additional trips if that kind of pass existed (of course, one of the limitations of the survey is the fact that the actual respondents belonged to one of the specific demographic groups: adults, students, and youth riders. Thus, it was likely that their choice of answer was influenced by their age or whether they were enrolled in school, as the pass offered specifically for them would essentially lower their ride cost). Overall, it should be noted that offering a monthly ride pass would result in more riders becoming regular riders when compared to a simple reduction in single ride fare. This

data was further verified by fieldwork that suggested that existing Tar River Transit riders would really appreciate and utilize any form of ride pass offered to them.

Overall, as shown in Figure A.10c, responses suggest that extended service hours and providing service on the weekends could result in a very substantial increase in ridership levels. In particular, nearly 81 percent of the respondents claimed that longer evening weekday hours would result in them becoming regular Tar River Transit riders (taking additional 2-4 or more trips on average per week).Longer evening weekend service hours would result in 79 percent of them becoming regular Tar River Transit riders, followed by early weekday service at 78 percent and early weekend service at 76 percent. In addition, only about 6 percent of the respondents would not make any additional transit trips if the weekday/weekend evening hours of service were to be extended. The responses suggest that the need for longer service hours is particularly acute on weekdays, but overall longer service hours are the single improvement that could be made that would result in significant increase in ridership numbers.

In terms of area served, the riders would generally take more transit trips if more places were served by transit in Rocky Mount proper rather than areas outside the city limits (see Figure A.10d). About 77 percent of the riders would become regular riders (take 2-4 or more additional transit trips per week) if Tar River Transit served more places in Rocky Mount, as compared to about 71 percent if Tar River Transit served more places in Edgecombe and Nash County, and 67 percent if Tar River Transit served the Triangle area. The results suggest that what the riders *really* want is a more comprehensive regional transit system serving the entire Study Area – one could be skeptical about more than half of surveyed riders claiming that they would take five or more additional transit trips if the Tar River Transit Bus service actually served more places in the Study Area, but what these answers really suggest is the need to study a more regional and comprehensive approach to transit planning in the two-county Study Area, including providing more transit options.

In terms of service convenience, frequency, reliability, and safety, about 74 percent of the respondents claimed that improvements to those service qualities would result in them taking at least 2-4 additional Transit trips per week – or essentially become regular riders (see Figure A.10.e). The frequency aspect had a slight positive edge over the other qualities, with the most percentage of riders who claimed to become regular riders if frequency of service was increased and the least percentage of riders stating that improved frequency of service would not entice them to make any additional transit trips.

Lastly, the data suggests that the riders would be willing to take additional transit trips if improved transit information/scheduling was made available to them via phone, followed by printed materials and online (see Figure A.10f). The riders would prefer access to improved information regarding the transit system by phone and in print format as that type of information is probably most accessible and readily available. Fieldwork suggested that the availability of printed material is not always readily available to the riders. For one, not all route schedules were available in printed format at the Transfer Center's Transit Information display. In addition, the slots assigned to route schedules on buses were depleted and empty on the day the survey.

Significance:

In general, the riders would be willing to make many more additional transit trips if the proposed service improvements were made. As far as specific improvements' usefulness, the survey results suggest longer weekday and weekend hours of service as well as earlier service on weekdays would result in the most significant increase in ridership levels and be most beneficial. In addition, more frequent and comprehensive

local service (in Rocky Mount itself) would result in increased transit ridership. While the riders were generally satisfied with the current cost of Tar River Transit Bus service, they also expressed a strong desire to be able to purchase and use some sort of a transit pass. More courteous drivers, more comfortable buses and more bus stops along with better access to printed and phone transit information would be other types of improvements resulting in increased ridership levels.

Figure A.10a: Tar River Transit Bus Service On-Board Survey: Question 10

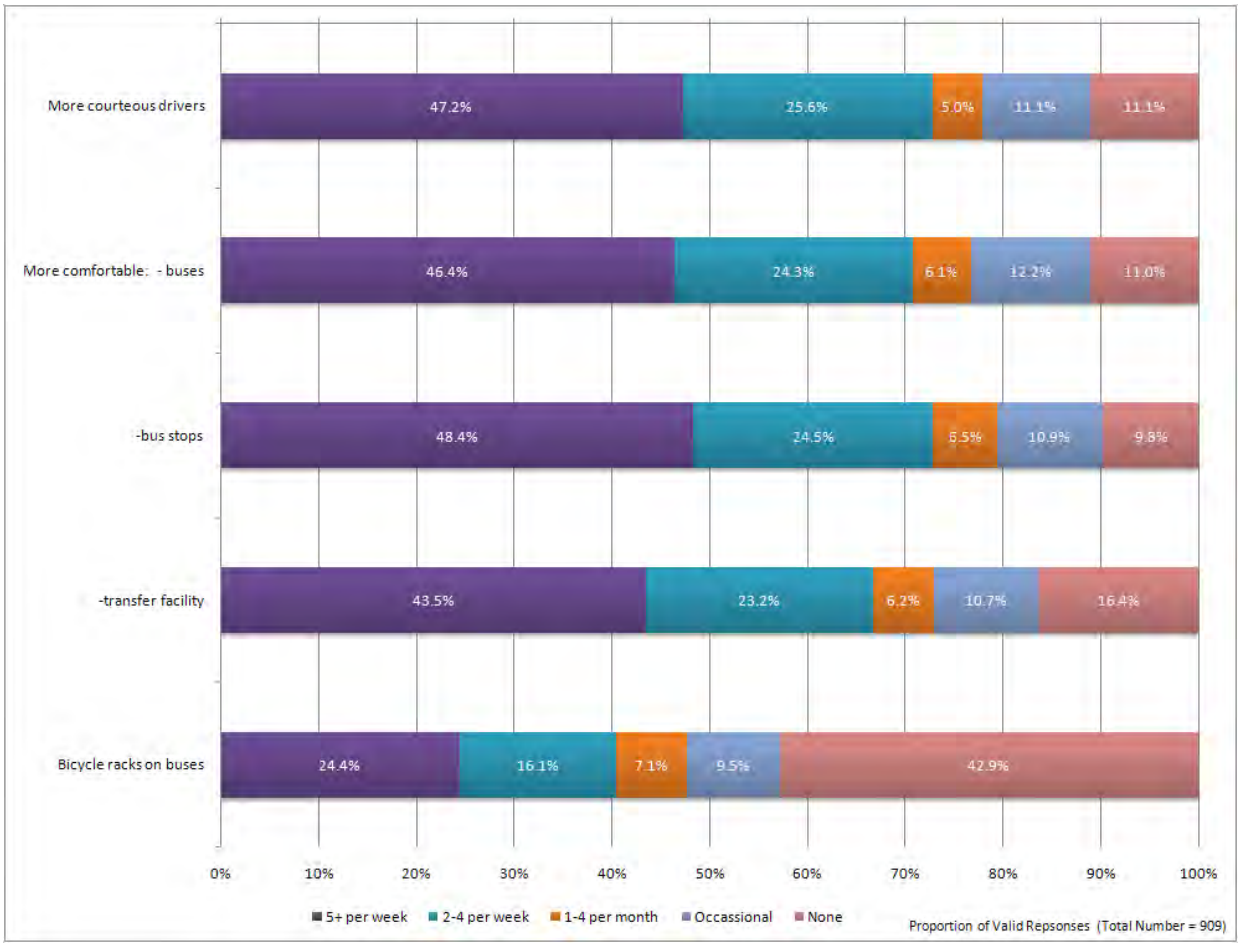


Figure A.10b: Tar River Transit Bus Service On-Board Survey: Question 10

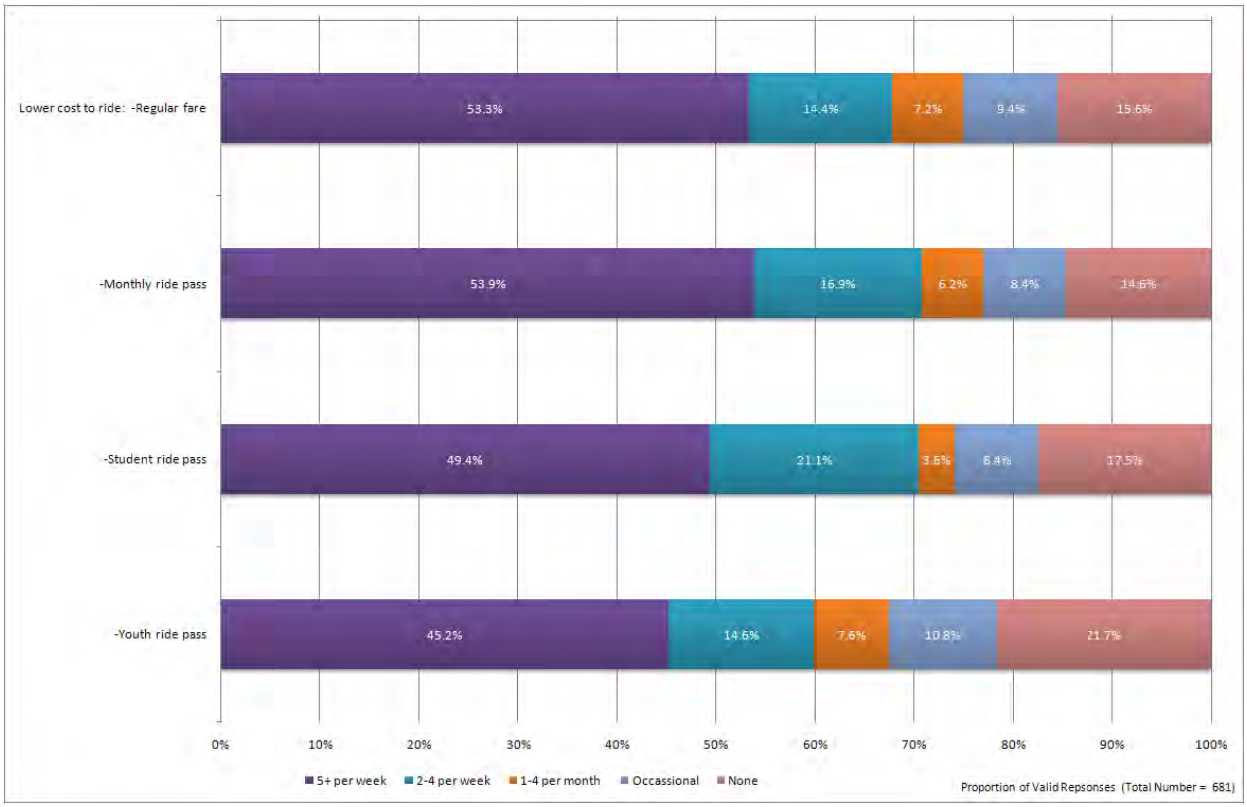


Figure A.10c: Tar River Transit Bus Service On-Board Survey: Question 10

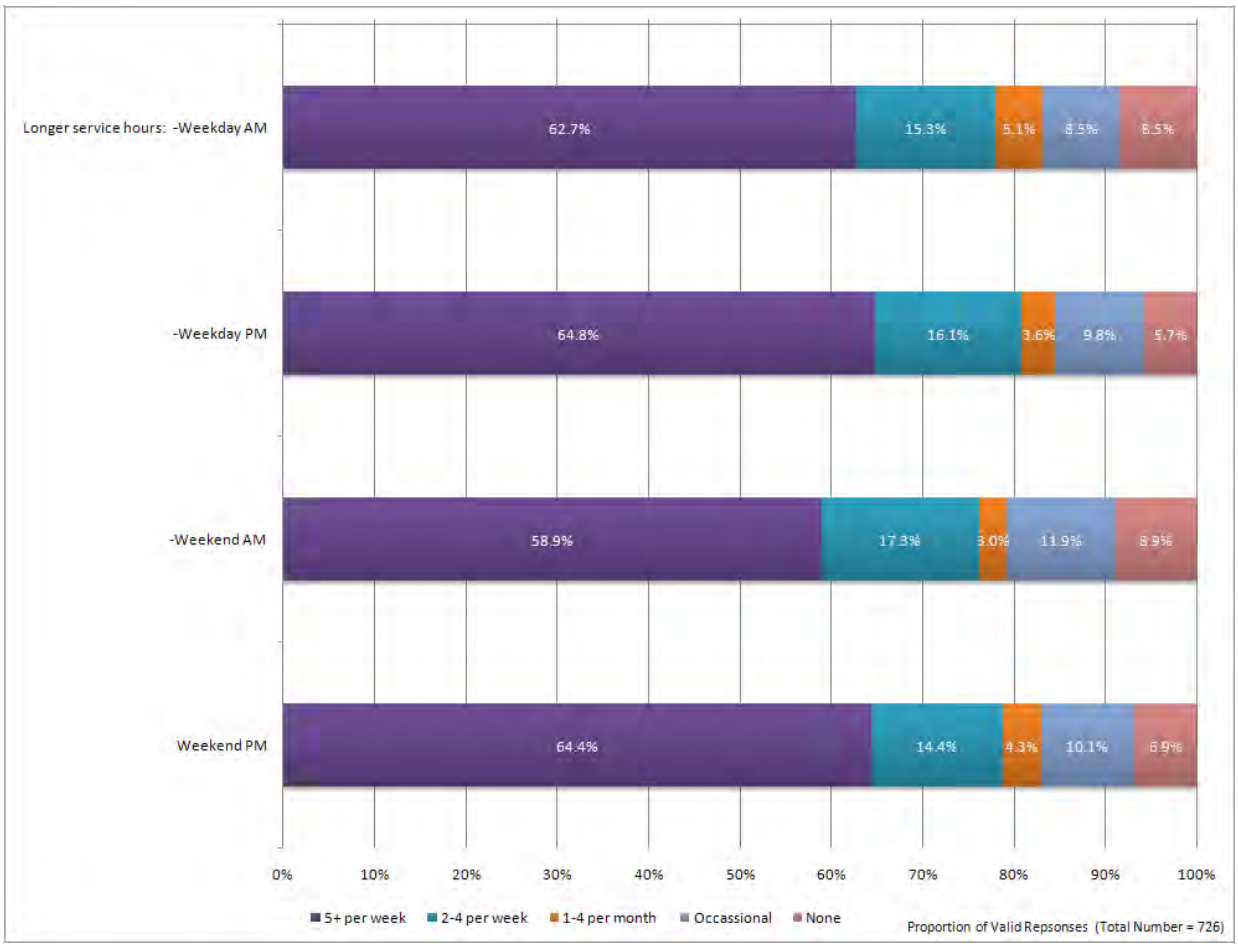


Figure A.10d: Tar River Transit Bus Service On-Board Survey: Question 10

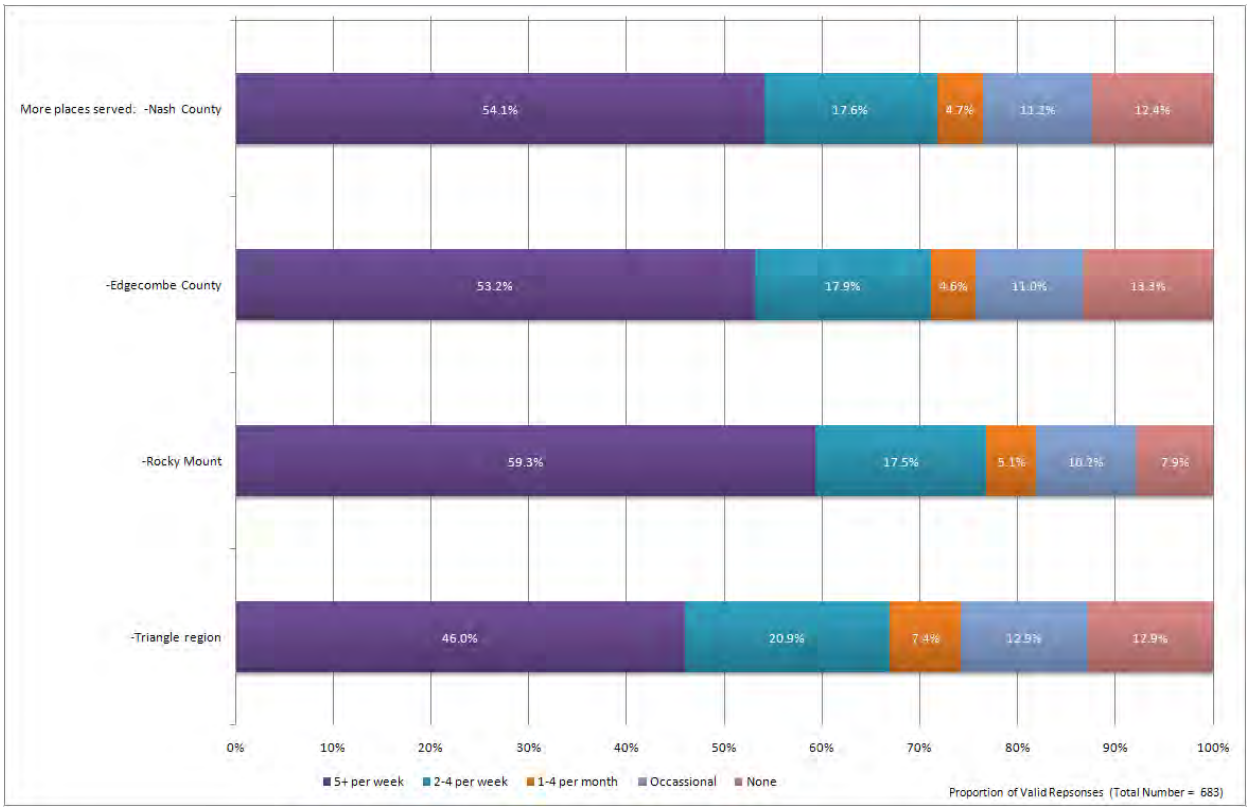


Figure A.10e: Tar River Transit Bus Service On-Board Survey: Question 10

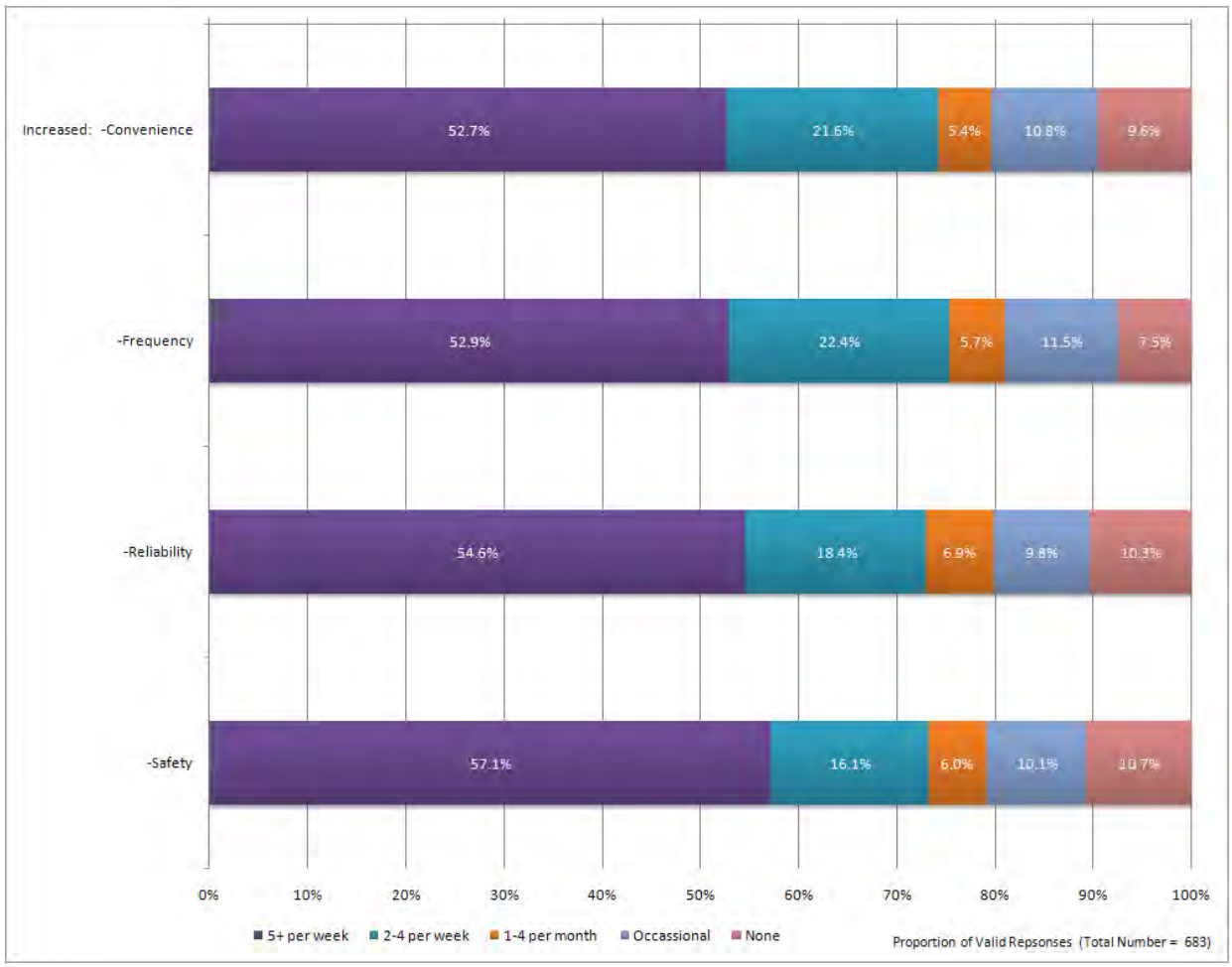
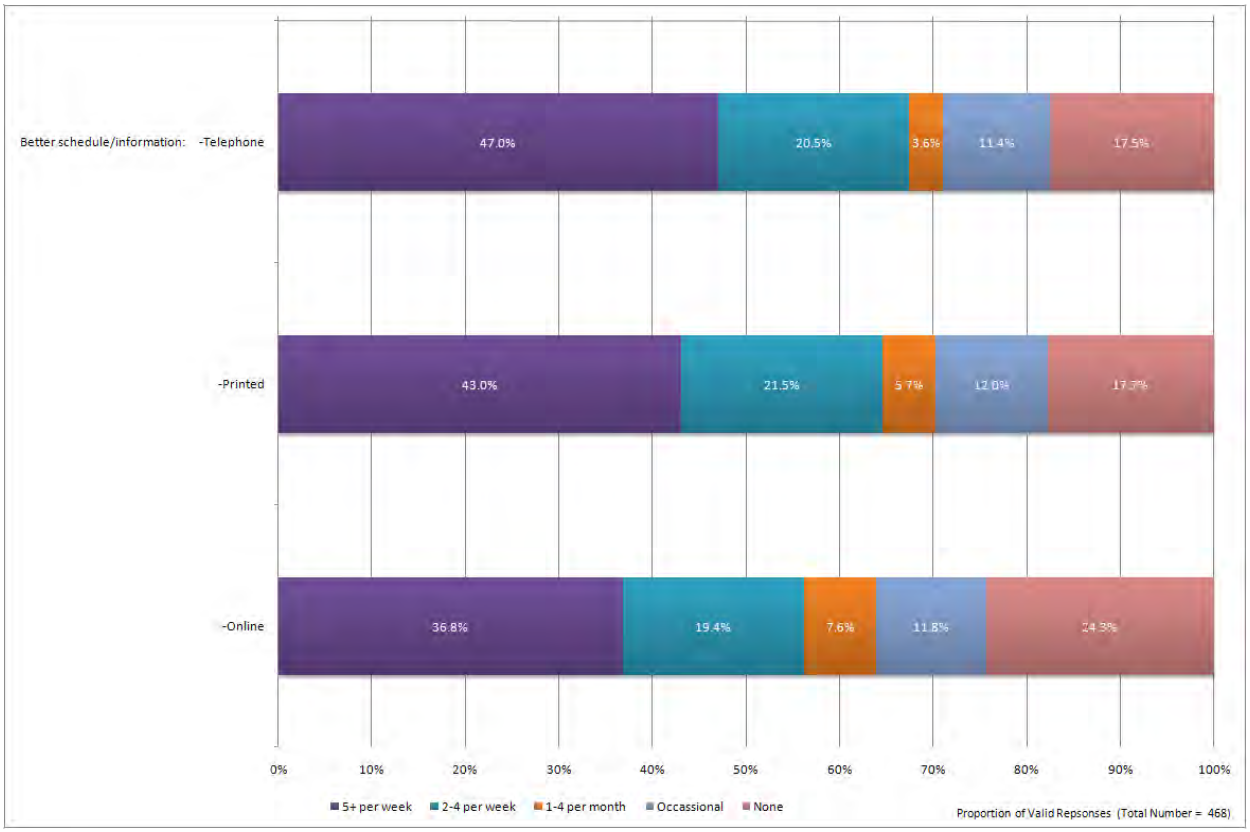


Figure A.10f: Tar River Transit Bus Service On-Board Survey: Question 10



A.4.11 Please provide any other comments or suggestions.

A large number of respondents made additional comments as most all riders are affected by the Tar River Transit Bus service on a daily basis. The following points aim to give an overall flavor of the comments. A sample of direct quotes is given below.

More specific themes included:

- Longer operating hours and Sunday service – a reoccurring comment, with many respondents suggesting that bus service should run later in the evening on the weekdays and that there should be Sunday service as well:

    - Longer hours.
    - Just needs to run a little longer.
    - All round good service just need to service longer.
    - Maybe need some service on Sunday. It will help people who work on Sundays.
    - I wish the time was long for the buses to run 6:00pm isn't long enough.
    - Getting the bus to come through Battleboro/Goldrock on Saturdays.
    - 24 hours buses. Bus service on Sunday would help people that rely totally on buses as their transportation.
    - 24 hours service.
    - Better weekend service.

- Longer hours that the bus is in service.
- They need to run a little longer on weekdays and weekend.
- I wish the bus would run at later times on weekdays and weekends, and start running on Sundays also.
- Earlier be at work at 6am.
- Extend their hours til at least 12 midnight, and should also include the weekends.
- Buses should run on Sundays as well. And late nights.
- That the buses run longer and that they run 7 days a week.
- Longer hours on am and pm.
- Run more hours and 7 days a week.
- Need longer hours on weekends and run the Ravenwood on the weekend too.
- Rocky Mount Transit needs to stay open longer like 11:00PM at night for people getting off work and people leaving school or college classes. It would be an excellent help for this community/city. SERIOUSLY!! Hire more drivers.
- It would be more convenient if the hours of availability were extended. That's my only problem. I get to work/school on the bus that by the time I get off work, they have stopped running.
- I wish the Battleboro bus run on Saturday then I would away have a ride to work.
- Need night service for those getting off work.
- Cost to ride is better than NY $2.25. I got to work early and wish the bus would run on Sunday. And start on Saturday the same as on the weekday.
- Buses should still run on holidays as people still got o work.
- Buses need to run longer for the people have to work past 5pm.
- Run on Sunday.
- Providing weekend service on shuttle buses as well as regular bus routes.
- I wish the bus service was longer hours. Also on Sundays.
- Longer bus service hours are needed pass six o'clock.
- They should run longer and on Sundays.
- If the hours of the bus schedule lasted longer then I feel like it would be even more convenient to me and others a swell. Overall the services given by the employees are great.
- It would be more convenient if buses run later at night and on Sundays.
- Nash Community should make longer trips to the college so it would be convenient to take evening classes.
- The Goldrock/Battleboro route needs to run holidays people still work on holidays and longer hours for those who are employed later it will be a better convenience.
- There are a lot of people that need to get to work at least at 8:00am. They call cabs when money could go to the city. Easonburg route more than on weekdays.
- I would like to see the hours extended especially on the Nash Comm. College bus. This bus would benefit from a Saturday service. Other cities offer longer hours. I rely solely on the bus to get to work.

- Need buses on weekends.
- We need buses to run until 11:00 at night some get off work at night.
- Longer hours at night to 8pm.
- The transit needs to run longer during the weekday and on the weekends especially on Sunday!
- Allow bus to drive for a longer period of time and on weekends!
- There is a great need for longer bus service in the evening.
- I think the bus service should run longer than 6pm on weekdays and 5pm weekends.
- I think there should be service up to 12am and just raise fare to $2 for service after 6pm.
- Buses need to come on weekend.
- I rely on the bus to go to work. I would like to suggest longer hours. Evening service would help those who have to work night or have night classes at school.
- I think the bus need to run until midnight for people who work at night.
- Run on Saturdays - Goldrock run
- Battleboro by Walmart add Satuday service / work 6 days/week
- Rocky Mount is a city building up. Rocky Mount Transit really needs to run at night. It would really help working people + students going o school. Cabs are very high to pay for in the area. Maybe one day Tar River Transit will try to make a change for people it would be a great help to the community and this city.

- Increased frequency of service:

  - Too long to wait on bus.
  - Bus needs to come more often.
  - Every 30 minutes routes would be more convenient.
  - Wish they could run every 30 minutes or run all day.
  - The bus is mostly late all the time.
  - I've been riding the bus for 1 yr. I only had 1 occasion that the bus didn't show up.
  - The Goldrock/Battleboro route needs to run every hour because people still have to be at work between 11 and 2pm.
  - There need to be more buses on all lines.
  - More than one bus for Sunset.

- More places served and improved comfort/amenities/safety:

  - The buses need to service the rural areas like Bullock School Rd, Sharpsburg, more areas in the county
  - Let the bus go to Whitakers Tarboro etc.
  - Nash Comm. Bus does not circle the whole facility; a large campus walking from one end to the other can sometimes take 10-15 minutes.
  - Nash County.

- There is only 1 TRT stop on Grace St on the Ravenwood route. There needs to be a TRT stop before the bus crosses the tracks.
- 5 years too long to wait for bus stop for Lowes or Big Lot. That needs to be done ASAP.
- There are a lot of elderly people who have to walk too far to bus stop from Cokey Rd Apartments. Especially in hot or really hot weather.
- 301 Wesleyan Blvd there a bus stop by KFC where I worked at Bojangles cross street there no bus stop there at the traffic steadily
- More bus stops.
- Have bus stop in W/Armstrong so people who have to cross over in traffic be eliminated. Thank you.
- They should give more service in more towns.
- More need for shelters at the major bus stops. Like Raleigh Street stops and Oakwood stop.
- Buses should be cleaned throughout the day / should install radio or television or at least a newspaper for the people who ride and a trash can.
- I use this service ever day. I just want service to be a better experience. Not know what you are going to encounter on some days.
- Start having a police on duty with the bus driver when it begin to get dark.
- Have rules posted about not using profanity.
- Spread out seats for more legroom! And extra cushion seats.
- Please let heat be on the buses when it's cold.
- The only suggestion I have is about the rain shelters. There should be one at every stop.
- In the summertime it's too hot to walk to a bus stop you need to make them more closer. Even in the winter it might be 15 degrees. Please allow food and drinks on the bus. Even on the traveling bus it's very important.
- More sheltered areas with seats

- Cost to ride:
  - Student fares and bus passes would be great as well as pm services extended.
  - Price for tickets.

- Schedule/Information
  - How do I get tickets to ride?
  - Better service at all.
  - More than one bus for Sunset.

- Bus driver courtesy:
  - Drivers should be more courteous and understanding!!! Courtesy is very important.
  - They need to get rid of some of the drivers
  - Some of the bus drivers have a bad attitude.

- Some of the drivers are rude and need some attitude adjustment - Sylvia for one!I think that bus drivers could be a little bit courteous to ever one.
- More courteous drivers, some of the drivers are rude for no reason.
- Some drivers are nasty and have bad attitudes other than that service is fine to me!!
- More compassion in some of he women drivers that are very rude and had bead attitudes with people it's only one.
- Ms. _____ is very rude to people and is usually late and sometimes won't even stop to pick up some people.
- If more of your drivers where more like _____ she is very polite and always smiling more people would ride the bus I wish Ravenwood would run on Saturdays, I work at Pizza Inn.
- Driver should not make stops to stores or other areas to take care of personal business. One driver stopped to the store to get food. Someone could have taken the bus while driver was in the store.

- Applaud/Appreciation of service:

  - In all I think RMT Transit is a good thing for people that need transportation.
  - They do a great job. Keep up the great job.
  - Very good transportation.
  - Overall bus does good for the community.
  - The best drivers in Rocky Mount. They are very courteous and helpful.
  - I love riding the transit bus, all my rides are a pleasure.
  - The bus is best service you could have to take you or where you need to go keep up the great work.
  - Everything seems to be great so far! Thank you!
  - You do a very good job to get people where they need to go so keep up the good work.
  - I love riding the transit buses, I have never had any concerns, every time I ride I enjoy the pleasure.
  - TRT is a blessing to me. I don't have a car and without the buses I don't know how I would handle business. I have kids so that means many doctor visits. No buses, no visits. Don't go away TRT!
  - I really enjoy my services with Tar River.
  - Keep up the good work.
  - Good service.
  - They have good services.
  - They do a wonderful job.
  - I would like to think the tar river transit because it helps a lot of people get where they need to go. I really do appreciate them a lot.
  - I like this service.

Significance:

Longer service hours, particularly on the weekdays would result in providing more mobility to many people, especially since it would enable workers taking Tar River Transit *to* work to also make the return trip using transit.

Frequency could be increased particularly during morning and late afternoon rush hour; 30-minute headways instituted for some of the busiest routes – including Golden East/Ravenwood, Meadowbrook/Oakwood, Sunset routes would probably result in most positive returns. Formal or semi-formal mini transit centers should be located throughout Rocky Mount to facilitate transfer between routes without the need to go all the way to the main transfer center. Already, one of those informal transfer points exists at the Oakwood Shopping center (serviced by Oakwood/Meadowbrook routes). Routes might need better/more convenient placement of bus stops in certain areas and bus shelters should be installed in more places. Lastly, bus drivers' courtesy should be monitored.

A.5 QUESTION-BY-QUESTION ANALYSIS: TAR RIVER TRANSIT VAN SERVICE

The actual on-board van survey is shown in Figure A.11. For each question, the following are provided: **Purpose** (a brief explanation of why the question was asked, **Results** (a brief summary of the main results) and **Significance** (an assessment of what the results mean for Tar River Transit).

Figure A.11: Tar River Transit Van Service On-Board Survey

Dear Rider: We are conducting a survey to improve Tar River Transit Van service. Please help us by answering the questions below before you leave the van. All responses are confidential.

TAR RIVER TRANSIT

1. **When did you make the reservation for this trip?**
   - ☐ More than 1 week ago
   - ☐ 4-7 days ago
   - ☐ 3 days ago
   - ☐ 2 days ago
   - ☐ 1 day ago
   - ☐ Today

2. **What is the purpose of this trip?**
   - ☐ Work
   - ☐ School
   - ☐ Recreation/Social
   - ☐ Shopping
   - ☐ Medical/Dental Services
   - ☐ Human/Social Services
   - ☐ Personal Business

3. **Why did you choose to ride the Tar River Transit Van service for this trip? Mark all that apply.**
   - ☐ Disability
   - ☐ Limited mobility
   - ☐ Lack of alternatives
   - ☐ Cost of service
   - ☐ Environmental
   - ☐ Convenience
   - ☐ Avoid traffic
   - ☐ I enjoy door-to-door service
   - ☐ Qualify for free van trips

4. **If the Tar River Transit Van service did not exist, how would you have made this trip?**
   - ☐ Tar River Transit Bus service
   - ☐ Amtrak Train service
   - ☐ Greyhound Bus service
   - ☐ Walk
   - ☐ Bicycle
   - ☐ Drive alone
   - ☐ Ride with someone
   - ☐ Taxi
   - ☐ Buy or rent a car
   - ☐ I would have sent someone on this trip for me
   - ☐ I would not have made this trip

5. **How long have you been riding the Tar River Transit Van service?**
   - ☐ Less than 1 year
   - ☐ 1-3 years
   - ☐ More than 3 years

6. **On average, how often do you ride each of the following transit services in Nash or Edgecombe Counties?**

	5+ per week	2-4 per week	1-4 per month	Occasionally	Never
Tar River Transit Bus Service (Urban – Rocky Mount)	☐	☐	☐	☐	☐
Tar River Transit Bus Service (Rural – County)	☐	☐	☐	☐	☐
Tar River Transit Van Service	☐	☐	☐	☐	☐
Amtrak Train	☐	☐	☐	☐	☐
Greyhound Bus	☐	☐	☐	☐	☐

7. **Please indicate your opinion of the following Tar River Transit Van service qualities**

	Excellent	Good	Average	Fair	Poor	No Opinion
Driver courtesy	☐	☐	☐	☐	☐	☐
Comfort riding van	☐	☐	☐	☐	☐	☐
Cost to ride	☐	☐	☐	☐	☐	☐
Hours of service	☐	☐	☐	☐	☐	☐
Places served	☐	☐	☐	☐	☐	☐
Service: Convenience	☐	☐	☐	☐	☐	☐
Frequency	☐	☐	☐	☐	☐	☐
Reliability	☐	☐	☐	☐	☐	☐
Safety	☐	☐	☐	☐	☐	☐
Schedule/information: Telephone	☐	☐	☐	☐	☐	☐
Printed	☐	☐	☐	☐	☐	☐
Telephone reservation system	☐	☐	☐	☐	☐	☐
Length of window of time for pick-up	☐	☐	☐	☐	☐	☐

Please turn over →

Dear Rider: We are conducting a survey to improve Tar River Transit Van service. Please help us by answering the questions below before you leave the van. All responses are confidential.

TAR RIVER TRANSIT

8. **Overall, how do you rate the Tar River Transit Van service?**
   □ Excellent □ Good □ Average □ Fair □ Poor

9. **Are there any locations inside Nash or Edgecombe Counties that need Tar River Transit Van service – if so, which ones? Please provide city and destination name (ex. Courthouse) or major cross streets.**

   Location:_____

   Location:_____

   Location:_____

   Location:_____

10. **If the following IMPROVEMENTS were made, how many MORE TRIPS would you make, on average?**

	5+ per week	2-4 per week	1-4 per month	Occasional	None
More courteous drivers	□	□	□	□	□
More comfortable vans	□	□	□	□	□
Lower cost to ride	□	□	□	□	□
Longer service hours: Weekday PM	□	□	□	□	□
Saturday PM	□	□	□	□	□
Sunday service	□	□	□	□	□
More places served: Nash County	□	□	□	□	□
Edgecombe County	□	□	□	□	□
Rocky Mount	□	□	□	□	□
Triangle region	□	□	□	□	□
Increased: Convenience	□	□	□	□	□
Frequency	□	□	□	□	□
Reliability	□	□	□	□	□
Safety	□	□	□	□	□
Better schedule information: Telephone	□	□	□	□	□
Printed	□	□	□	□	□
On-line	□	□	□	□	□
Better Reservation System: Telephone	□	□	□	□	□
On-line	□	□	□	□	□
Shorter pick-up time window	□	□	□	□	□

11. **Please provide any other comments or suggestions:**_____

_____

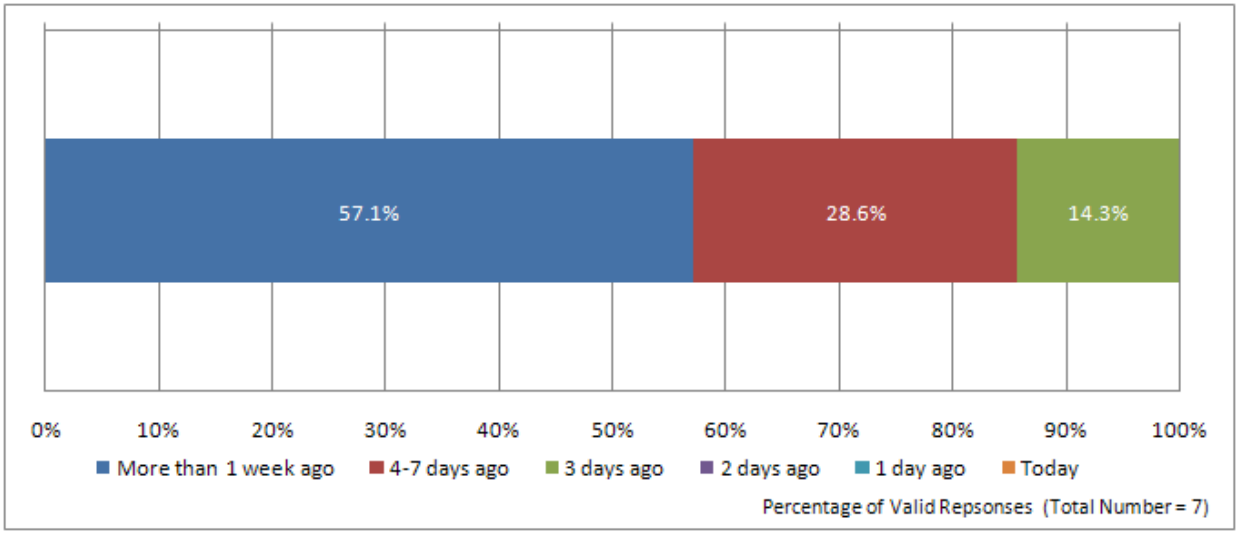
_____

_____

Thank you for participating. If you have any questions, comments, or suggestions, please contact Greg Saur at: 919-829-0328 (p) or transit@mabtrans.com.

A.5.1 How did you make the reservation for this trip?

Figure A.12: Tar River Transit Van Service On-Board Survey: Question 1



Purpose:

To understand how far in advance Tar River Transit Van riders reserve the rides.

Results:

As shown in Figure A.12, the vast majority of the respondents, 57.1 percent reserved their Tar River Transit Van trip more than 1 week in advance. About 28.6 percent of the respondents reserved their trip 4 to 7 days in advance, while 14.3 percent did it 3 days ago.

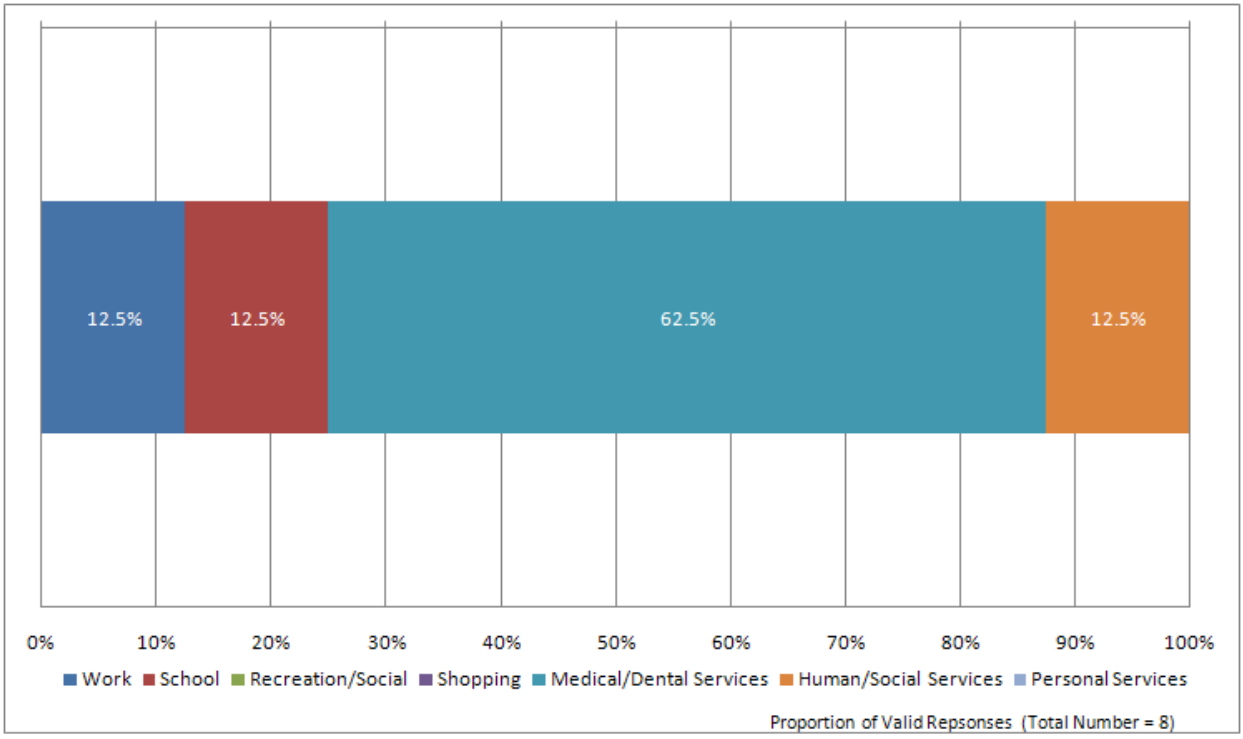
Notably, none of the surveyed riders reserved their seats less than 3 days in advance, which is understandable as the rides typically require a 24 hour notice.

Significance:

Advance reservation is very popular with Tar River Transit Van riders. However, reserving Van rides way in advance can often result in no-shows and cancellations, as riders are more likely to stick to their plans if they make the reservations only a few days in advance (due to an actual scheduled need – i.e. a doctor's appointment, etc).

A.5.2 What is the purpose of this trip?

Figure A.13: Tar River Transit Van Service On-Board Survey: Question 2



Purpose:

To find out the transit trip purpose(s).

Results:

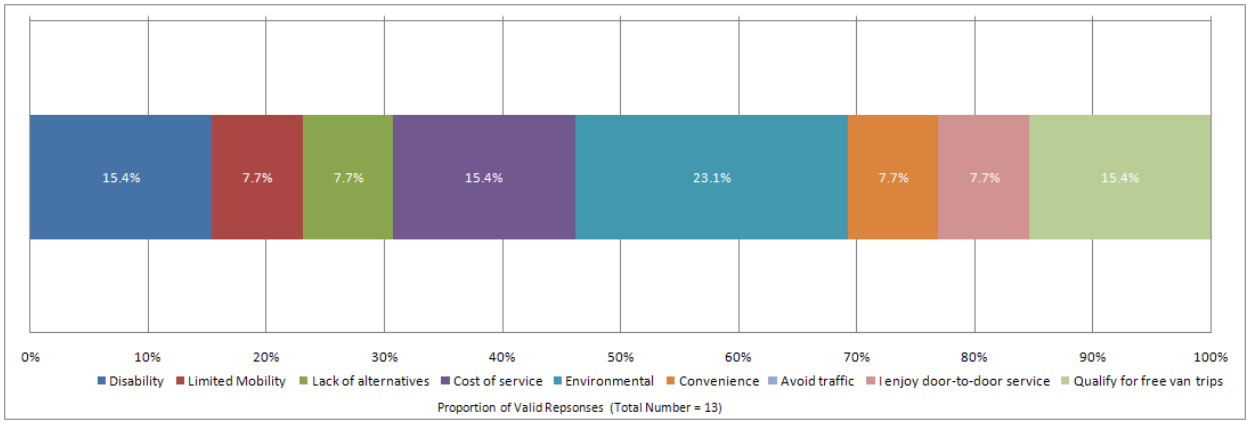
As shown in Figure A.13, the greatest proportion of the trips, 62.5 percent, was for medical/dental services. The rest of the trips were split between work, school, and human/social services, with no personal shopping or recreation/social trips.

Significance:

Tar River Transit Van service is heavily utilized for a variety of purposes, but primarily to get to medical facilities. The main difference between the Tar River Transit Bus and Tar River Transit Van utilization is that the Van service is used much more extensively for medical trips.

A.5.3 Why did you choose to ride the Tar River Transit Van service for this trip? Mark all that apply.

Figure A.14: Tar River Transit Van Service On-Board Survey: Question 3



Purpose:

To understand the reason(s) behind the decision to ride Tar River Transit Van. To separate captive (transit dependent) versus choice riders.

Results:

As shown in Figure A.14, most respondents pointed to environmental reasons, disability, cost of service and the fact they qualify for free van trips as factors that influenced their decision to ride the Tar River Transit Van service. Disability and limited mobility combined was a factor for over 23 percent of the respondents. The cost of service and convenience combined was a factor for about 23 percent of respondents as well. Over 15 percent of the respondents qualified for free van trips.

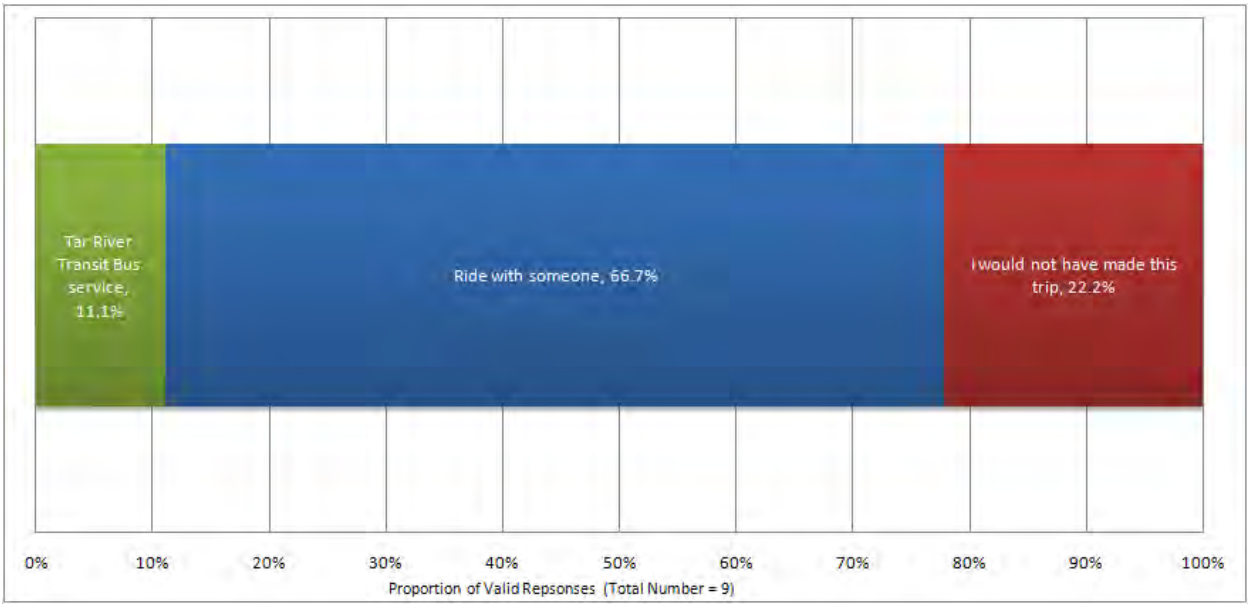
The majority of the Tar River Transit Van riders can be categorized as captive riders. In fact, 61.6 percent of the responses could be categorized as being from captive riders (disability, limited mobility, lack of alternatives, cost of service, qualify for free van trips) – this compares to 63.3 percent of captive riders taking Tar River Transit Buses – although, notably, the bus survey lacked an option of "Qualify for free van trips." The remaining 38.4 percent were choice riders (compared to a very similar 37.8 percent of Tar River Transit Bus choice riders) who deliberately chose to ride Tar River Transit either because they perceived the service to be convenient, environmentally-friendly, or because they "enjoyed door-to-door service" (none of the choice riders claimed to ride Tar River Transit Van to "avoid traffic.").

Significance:

It is clear that environmental reasons, disability, cost of service and the fact they qualify for free van trips were the principal factors that influenced the respondents' decision to use Tar River Transit Van service. It seems they had no other choice. The percentage of captive riders taking Tar River Transit Van service is just as high as the percentage of captive riders patronizing Tar River Transit Bus service.

A.5.4 If the Tar River Transit Van service did not exist, how would you have made this trip?

Figure A.15: Tar River Transit Van Service On-Board Survey: Question 4



Purpose:

To find out how riders would have made the trip if Tar River Transit Van service was not available.

Results:

The results are shown in Figure A.15. All respondents were captive riders, and about 22.2 percent of them would not make the trip if the service was not available (compared to 16.5 percent in terms of Tar River Transit Bus riders). An additional 11.1 percent would have relied on other existing transit option – Tar River Transit Bus service, and 66.7 percent would get a ride from someone else.

Significance:

The 22.2 percent riders who indicated that they would not have made the trip at all are particularly important as those riders' mobility would be greatly reduced if Tar River Transit Van service was not available.

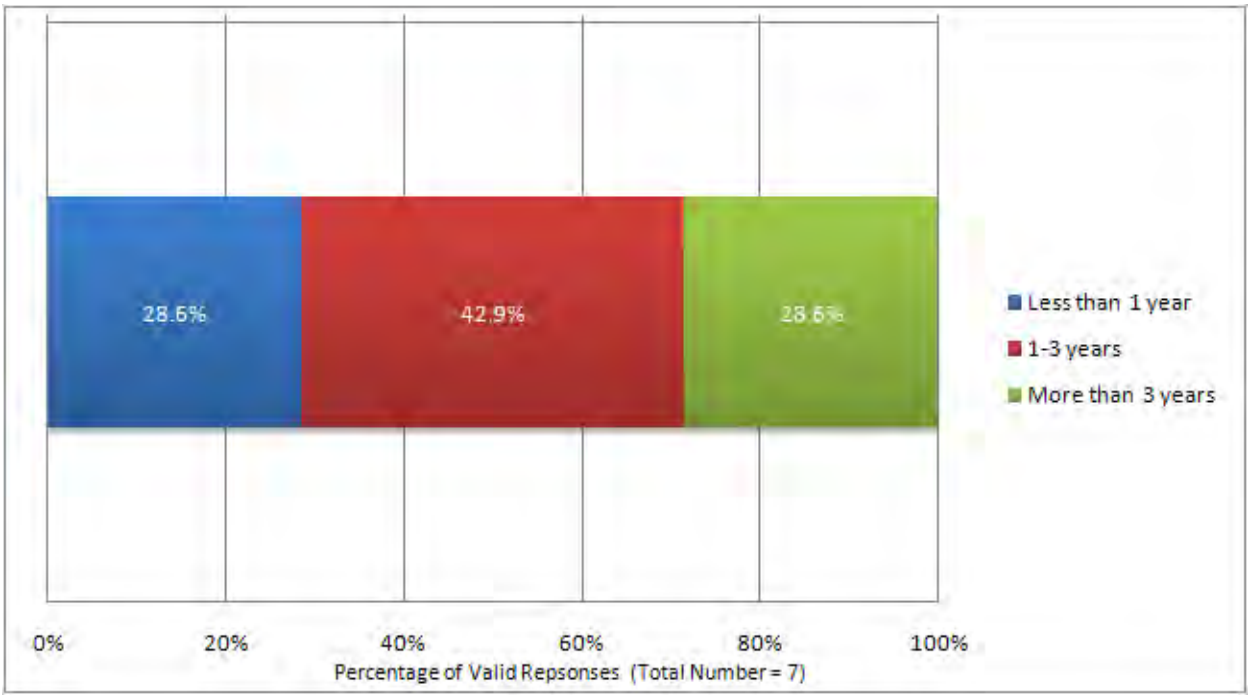
It is important to recognize that about 11.1 percent of the respondents signaled that they would use the Tar River Transit Bus service instead – despite it not being a 'door-to-door' service and perhaps not as convenient.

In stark contrast to Tar River Transit Bus riders, all riders were captive riders. Lastly, more than two in three of the riders would actually opt to ride with someone instead, suggesting that they know or would have to find someone who could give them a ride to wherever they need to go. This indicates the necessity of the

trip and also that they would essentially have to make the trip work by finding someone they could rely on to get them to their destinations.

A.5.5 How long have you been riding the Tar River Transit Van service?

Figure A.16: Tar River Transit Van Service On-Board Survey: Question 5



Purpose:

To find out how long the riders have been patrons of the Tar River Transit Van service.

Results:

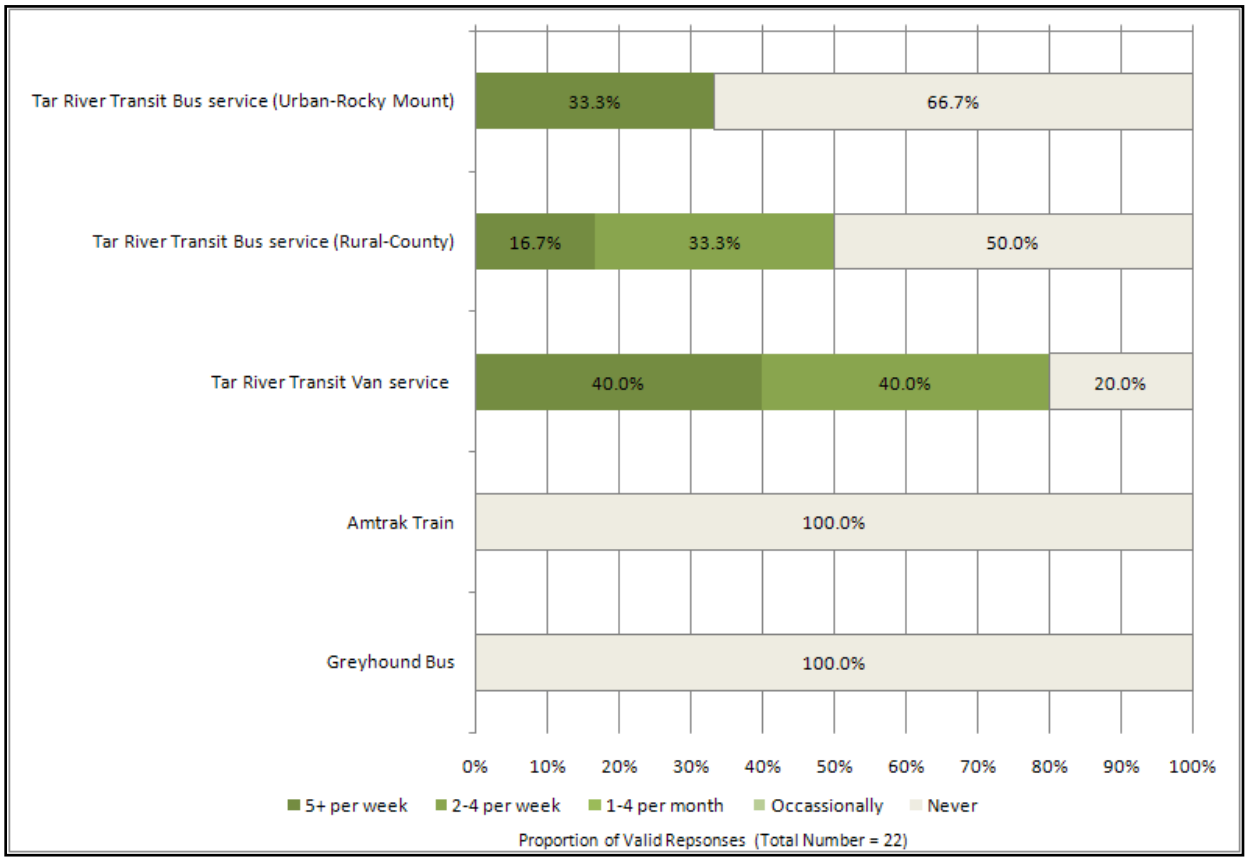
Overall, as shown in Figure A.16, 28.6 of the surveyed riders have been using Tar River Transit Van service for less than 1 year, with 42.9 percent using it for 1 to 3 years and 28.6 percent using it for more than 3 years.

Significance:

The Tar River Transit Van service riders are a mix of established riders who have been utilizing the service for a long time and some newer riders as well. In general, Tar River Transit Bus riders are more established users of the service than Tar River Transit Van riders.

A.5.6 On average, how often do you ride each of the following transit services in Nash or Edgecombe Counties?

Figure A.17: Tar River Transit Van Service On-Board Survey: Question 6



On average, how often do you ride each of the following transit services in Nash or Edgecombe Counties?	5+ per week	2-4 per week	1-4 per month	Occassionally	Never
Tar River Transit Bus service (Urban-Rocky Mount)	33.3%	0.0%	0.0%	0.0%	66.7%
Tar River Transit Bus service (Rural-County)	16.7%	33.3%	0.0%	0.0%	50.0%
Tar River Transit Van service	40.0%	40.0%	0.0%	0.0%	20.0%
Amtrak Train	0.0%	0.0%	0.0%	0.0%	100.0%
Greyhound Bus	0.0%	0.0%	0.0%	0.0%	100.0%

Purpose:

To find out which transit services in the Study Area the riders use the most.

Results:

The results are shown in Figure A.17. Surveyed Tar River Transit Van riders tend to use Van service the most – in fact, 80 percent of them are regular riders. Regular riders tend to also regularly patronize Tar River Transit urban and rural bus service. The surveyed riders tend not to use Amtrak or Greyhound Bus services.

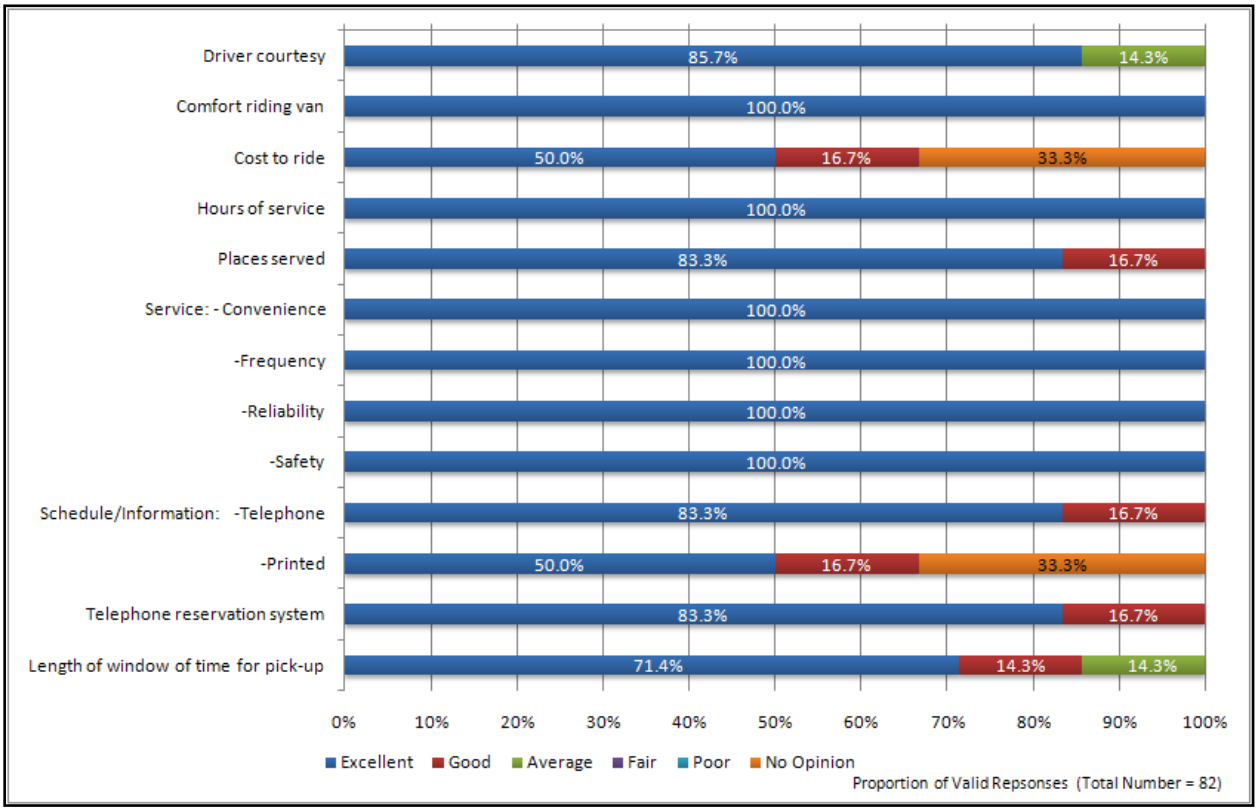
Significance:

The data suggest that the Tar River Transit Van service is the most important and most popular public transit service in the Study Area among the surveyed riders.

The relatively high usage rates of the Tar River Transit Bus services by the surveyed Van riders suggest there is an opportunity to lure some of the Tar River Transit Van riders to Tar River Transit Bus service, particularly if the routes are modified/expanded to better serve their specific needs.

A.5.7 Please indicate your opinion of the following Tar River Transit Van service qualities.

Figure A.18: Tar River Transit Van Service On-Board Survey: Question 7



Please indicate your opinion of the following Tar River Transit Van service qualities.						
	Excellent	Good	Average	Fair	Poor	No opinion
Driver courtesy	85.7%	0.0%	14.3%	0.0%	0.0%	0.0%
Comfort riding van	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cost to ride	50.0%	16.7%	0.0%	0.0%	0.0%	33.3%
Hours of service	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Places served	83.3%	16.7%	0.0%	0.0%	0.0%	0.0%
Service: - Convenience	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
-Frequency	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
-Reliability	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
-Safety	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Schedule/Information: -Telephone	83.3%	16.7%	0.0%	0.0%	0.0%	0.0%
-Printed	50.0%	16.7%	0.0%	0.0%	0.0%	33.3%
Telephone reservation system	83.3%	16.7%	0.0%	0.0%	0.0%	0.0%
Length of window of time for pick-up	71.4%	14.3%	14.3%	0.0%	0.0%	0.0%

Purpose:

To understand the riders' perceptions of the quality of the Tar River Transit services rendered to them and to find out which of those qualities need improvements.

Results:

Overall, as shown in Figure A.18, six qualities received 100 percent 'excellent' rating: comfort riding van, hours of service, service convenience, service frequency, service reliability, and service safety. The Tar River Transit Van riders were least pleased with the cost to ride, length of window of time for pick-up, and printed schedule/information. This is in stark contrast to the answers given by the Tar River Transit Bus riders who were generally pleased with cost of service, but really dissatisfied with hours of service.

Significance:

The areas with the most need for improvements included cost to ride, length of window of time for pick-up, and printed schedule/information.

A.5.8 Overall, how do you rate the Tar River Transit Van service?

Figure A.19: Tar River Transit Van Service On-Board Survey: Question 8

Purpose:

To understand the riders' overall impression of the Tar River Transit Van service.

Results:

Overall, as shown in Figure A.19, all respondents assigned 'excellent' rating to the Tar River Transit Van service.

In general, Tar River Transit Van service is rated much above Tar River Transit Bus service by the respective riders, but the small sample obtained from the Van riders makes the results a bit unbalanced.

Significance:

The data suggest that the riders rate the Tar River Transit Van service as 'excellent.' However, this question is very general in nature, and the riders' answers to more specific Questions 7 and 10 also point out that perhaps the surveyed respondents were a bit too optimistic/generous when answering Question 8. (Note this similarity with Question 8 from the Tar River Transit Bus Service On-Board Rider Survey). In addition, the small sample obtained from the Van riders makes the results questionable in nature.

A.5.9 Are there any other locations inside Nash or Edgecome Counties that need Tar River Transit Van service – if so, which ones? Please provide city and destination name (ex. Courthouse) or major cross streets.

Purpose:

To find out the riders' opinion about the areas/places where the Tar River Transit Van service might be needed.

Results:

N/A – no responses from the surveyed riders.

Significance:

N/A

A.5.10 If the following improvements were made, how many additional trips would you make, on average?

Purpose:

To find what types of service improvements could result in increased ridership levels.

Results:

Note: results were broken into 6 distinct sub-categories.

If we separate the results of each subcategory into three distinct groups: regular riders (those who ride Tar River Transit Van service 2-4 times per week or more); occasional riders (who ride it 1-4 per month) and non-riders (who never utilize Tar River Transit Van service), we can conclude that:

- As shown in Figure A.20a, the riders would welcome more comfortable vans and more courteous van drivers – around 75 to 80 percent of the riders would become regular riders and ride the Tar River Transit Van service at least 2-4 times per week more often if these improvements were made. Lowering the cost to ride, on the other hand, would result in around 33 percent of the riders becoming regular riders.
- As shown in Figure A.20b, 60 percent of the respondents would become regular riders (use the van service at least 2-4 times per week more often) if weekday evening hours were extended (compared to 78 percent of Tar River Transit Bus riders). Longer service on Saturday and Sunday service were less important to the riders.
- In terms of area served, the riders would generally take more transit trips if more places were served by transit in Rocky Mount itself and Nash County (see Figure A.20c). About 75 percent of the riders would become regular riders (take additional 2-4 trips per week or more) if Tar River Transit Van service served more places in Rocky Mount and Nash County. This is quite surprising considering

the van service covers the whole Study Area – perhaps there is some misinformation regarding the geographic extent of the existing service.

- As shown in Figure A.20d, convenience and reliability were the two service quality improvements which would entice more ridership - about 67 percent of the respondents claimed that improvements to those two service qualities would result in them taking at least 2-4 additional transit trips per week, or, in other words, become regular riders. Overall, it seemed that the 'frequency' aspect of service was perceived to be a little less important than the others by the riders (in stark contrast to Tar River Bus riders who perceived frequency of service as one aspect that 0 if improved – would cause them to become regular riders).
- As shown in Figure A.20e, the surveys suggested that improved telephone schedule/information system would yield more positive results than improving other means of making trip reservations. The data suggests that the riders would be willing to take additional transit trips if improved reservation system was made available to them online, via telephone. Lastly, shorter pick-up time window would result in 60 percent of the riders taking at least 2 to 4 more additional trips per week – or essentially becoming regular riders. Interestingly, the answers given to Question 7 showed a bit of dissatisfaction with that aspect of the Tar River Transit Van service, but the respondents were gentler when responding to Question 10.
- Overall, the responses given to Question 10 suggest that longer weekday evening hours, shorter pick-up time window, more comfortable vans and more courteous van drivers and increased convenience and reliability are some of the main qualities that, if improved, could result in increased ridership levels.

Significance:

In general, it seems the riders would be willing to make many more additional transit trips if the proposed service improvements were made. As far as specific improvements' usefulnes, the survey results suggest that longer weekday evening hours, shorter pick-up time window, and increased convenience and reliability would result in the most significant increase in ridership levels and be most beneficial.

Figure A.20a: Tar River Transit Van Service On-Board Survey: Question 10

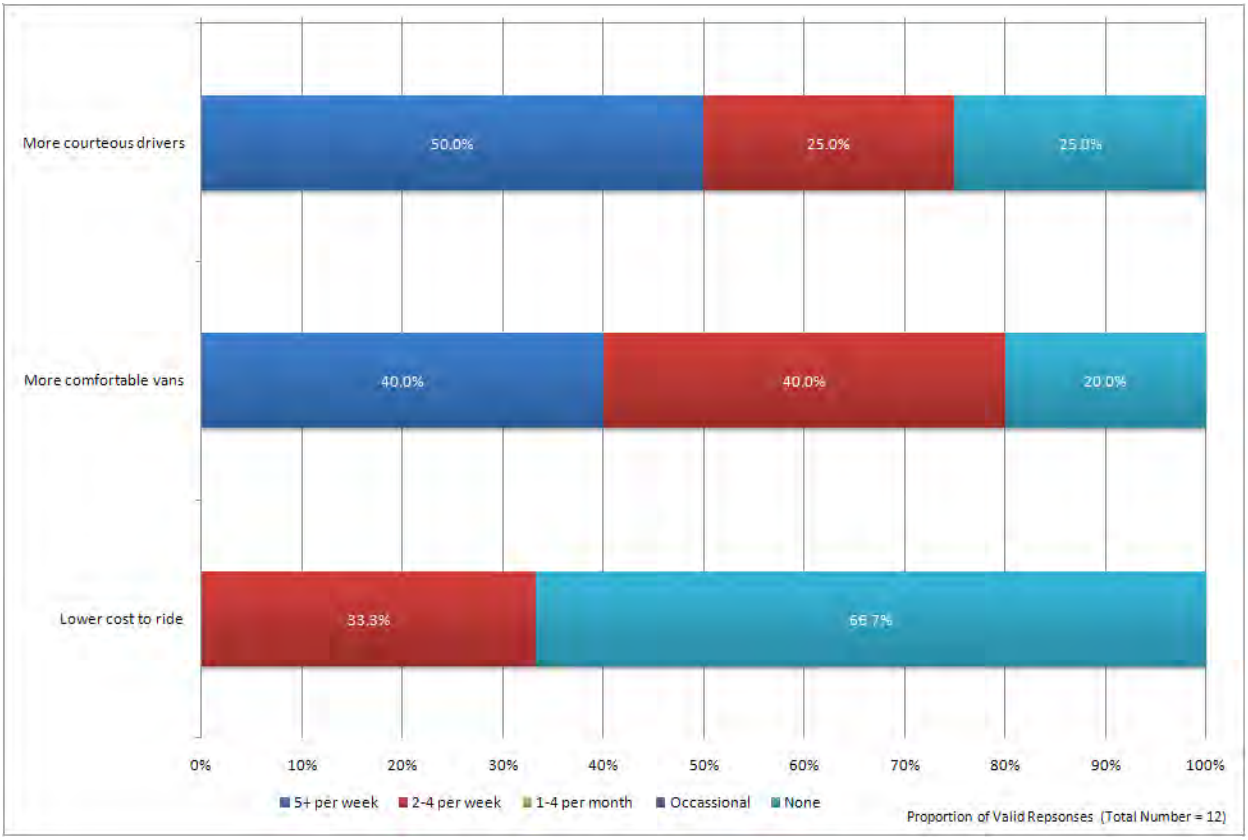


Figure A.20b: Tar River Transit Van Service On-Board Survey: Question 10

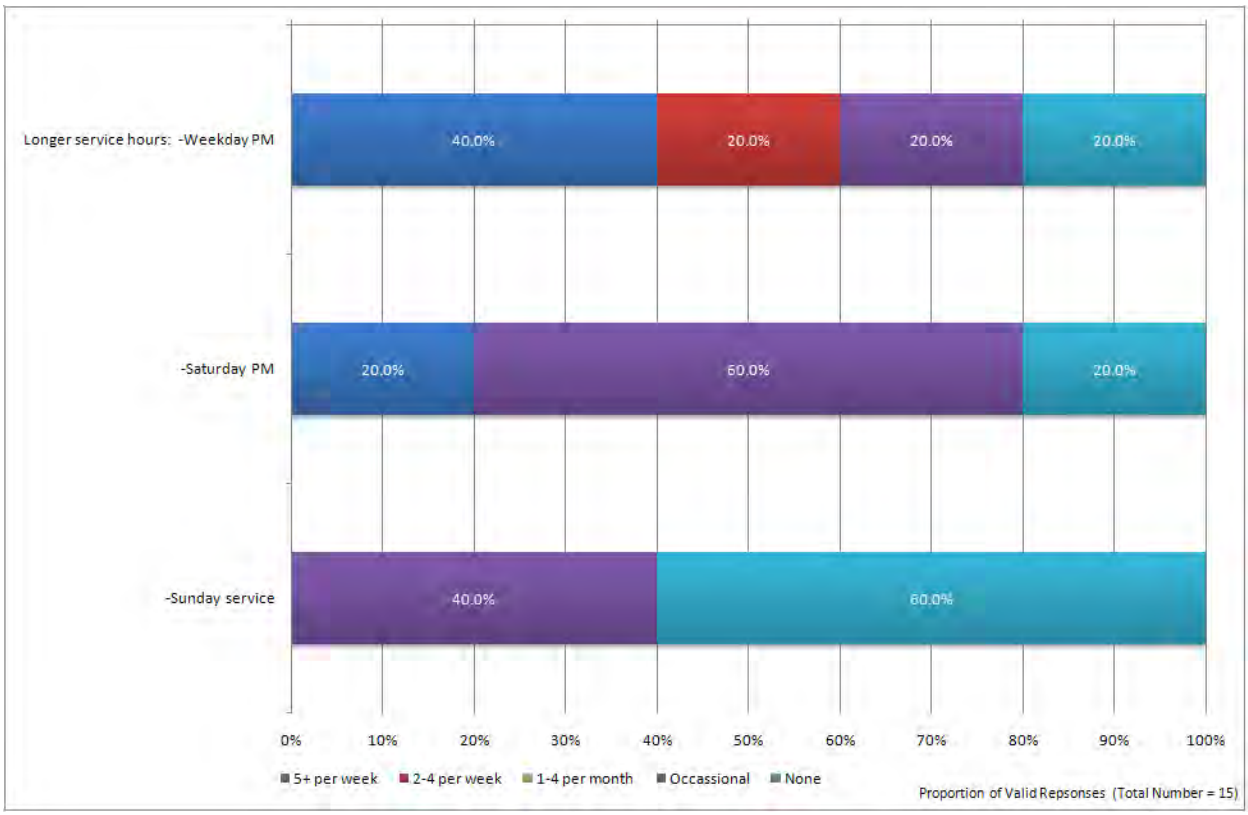


Figure A.20c: Tar River Transit Van Service On-Board Survey: Question 10

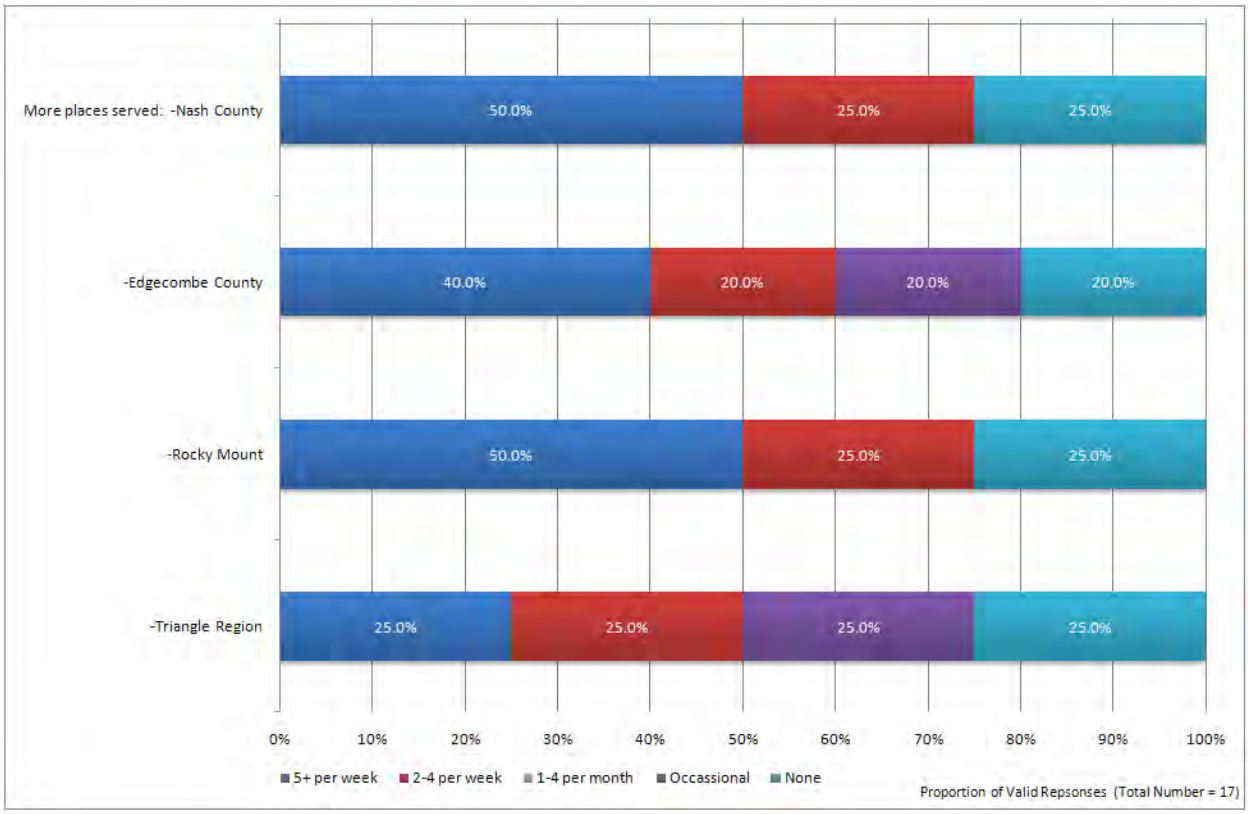


Figure A.20d: Tar River Transit Van Service On-Board Survey: Question 10

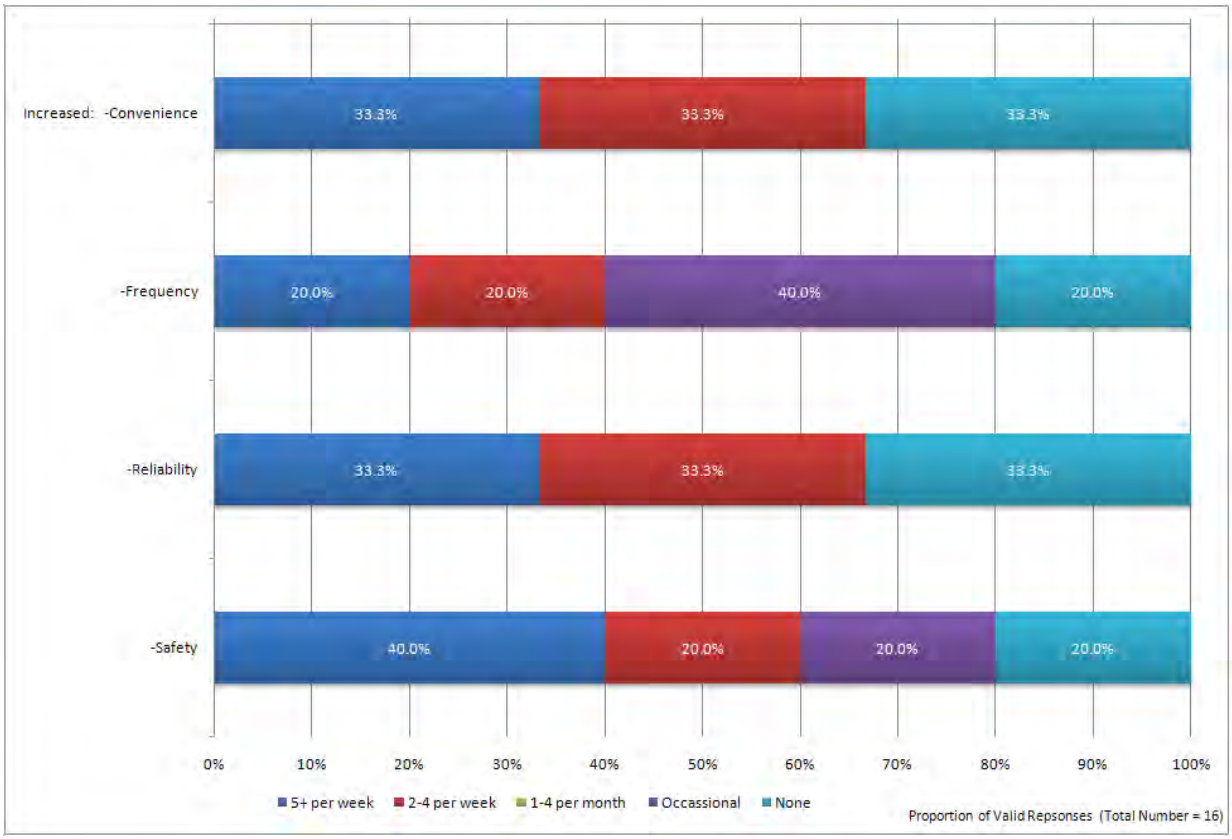
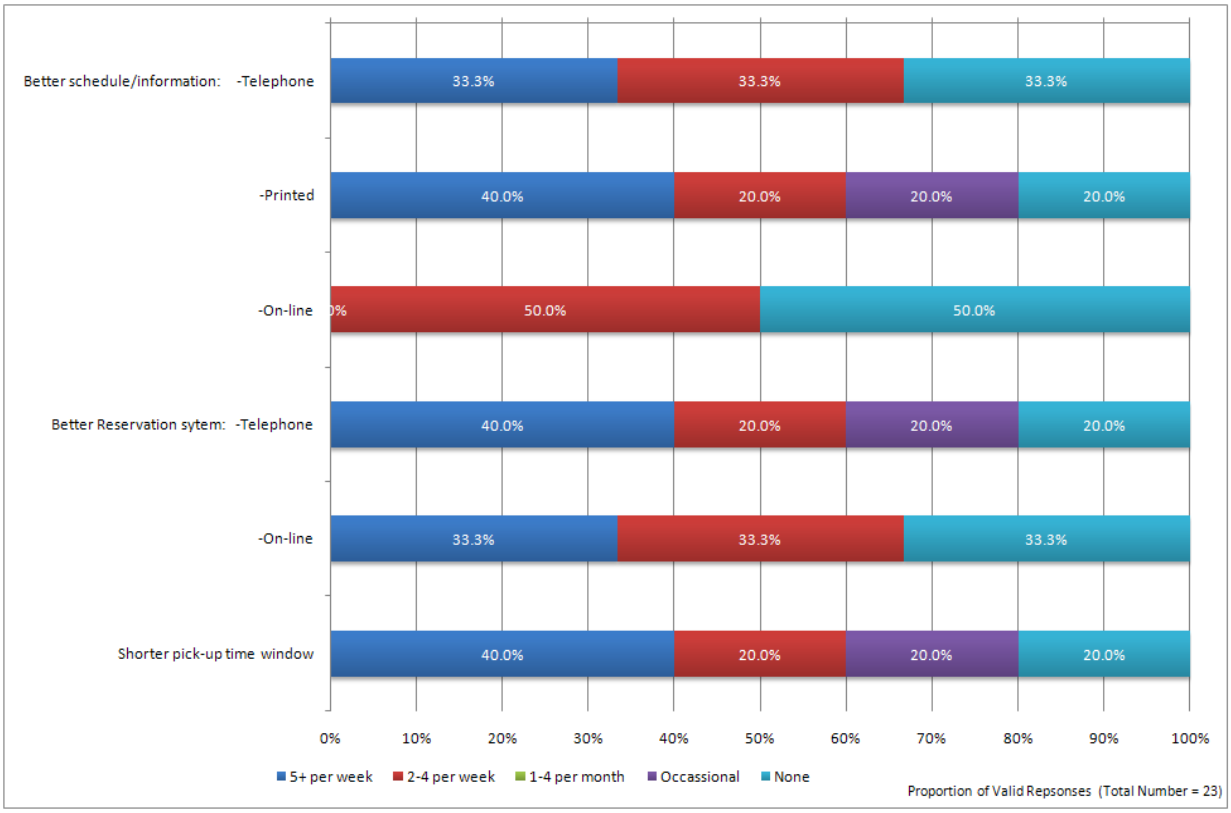


Figure A.20e: Tar River Transit Van Service On-Board Survey: Question 10



A.5.11 Please provide any other comments or suggestions?

Results:

Only one reply was given:

> 'Just keep up the good work.'

Significance:

The results show an overall satisfaction with the Tar River Transit Van service.

NORTH CAROLINA WESLEYAN COLLEGE STUDENTS TRANSIT SURVEY RESULTS

STUDENT TRANSIT SURVEY – AN OVERVIEW

As part of the Tar River Transit Community Transportation Service Plan study, M/A/B and North Carolina Wesleyan College (NCWC) conducted a survey of NCWC students to determine transit rider characteristics, trip purposes, trip origins and destinations, riding habits of the passengers, perceptions of service and potential improvements. The surveys were geared specifically towards the Wesleyan College student body and the existing Battleboro/Goldrock Shuttle service, which serves the NCWC campus.

The summary is not intended as a full statistical analysis of the results. Instead, it is intended as an easy-reading summary of the results and their possible implications for Tar River Transit and Wesleyan College.

SUMMARY OF SIGNIFICANT ISSUES

The top issues identified in the surveys can be summarized as follows:

- **Most students are not aware of the transit services available to them and have little knowledge of the variety of destinations served by the Shuttle**
- **About 5 percent of the respondents are captive transit riders and fully depend on the Shuttle to get around, including getting to and from NCWC**
- **More students would be willing (and able) to use the Battleboro/Goldrock Shuttle if it operated without the mid-day break in service and had extended evening weekday service hours**
- **Students would support a Student Transit Fee, particularly if the above service improvements were implemented**
- **Alternatively, students would ride the Shuttle more often if a Student Ride Pass was available**
- **Many of the requested destinations that students believe should be served by the Shuttle will be served by the proposed modified Shuttle service in the future**

QUESTION-BY-QUESTION ANALYSIS: TAR RIVER TRANSIT STUDENT SURVEY

The actual student survey is shown in Figure A. For each question, the following are provided: **Purpose** (a brief explanation of why the question was asked, **Results** (a brief summary of the main results) and **Significance** (an assessment of what the results mean for Tar River Transit).

Figure A: Tar River Transit Service Student Survey

Dear Student. We are conducting a survey to improve **Tar River Transit service** in Rocky Mount. Please help us by answering the questions below. All **responses are confidential.**

TAR RIVER TRANSIT

1. **Please select the group to which you belong:**
   □ On-Campus Resident Student □ Off-Campus (Commuting) Student
2. **How do you usually commute to Wesleyan College?**
   □ I don't commute (I live on Campus) □ Bicycle □ Drive alone
   □ Walk □ Taxi □ Dropped off
   □ Tar River Transit Battleboro/Goldrock Shuttle □ Carpool
3. **How far do you live from Campus?**
   □ Live On-Campus □ Between 1 and 3 miles □ Between 5 and 10 miles
   □ Less than 1 mile □ Between 3 and 5 miles □ More than 10 miles
4. **What time do you typically arrive on Campus?**
   □ Before 8am □ Between 8am to 11am □ Between 11am and 2pm
   □ Between 2pm and 5pm □ After 5pm
5. **What time do you typically leave Campus?**
   □ Before 8am □ Between 8am to 11am □ Between 11am and 2pm
   □ Between 2pm and 5pm □ After 5pm
6. **Are you aware that Tar River Transit operates the Battleboro/Goldrock Shuttle to/from Wesleyan College?**
   □ Yes □ No
7. **The Goldrock/Battleboro Shuttle currently operates on weekdays from 7:15am to 5:45pm with a mid-day break in service from 11:45am to 1:15pm. Are these service hours adequate or should the Shuttle operate:**
   □ Before 7:15am write in time _____ □ After 5:45pm write in time _____ □ With more frequency
   □ With no mid-day service break □ After 5pm write in time _____
8. **If Battleboro/Goldrock Shuttle service did not exist, how would you get to/from Wesleyan College and Rocky Mount?**
   □ It would not affect my commute □ Dropped off □ Drive alone
   □ Tar River Transit Van service □ Carpool □ Buy or rent a car
   □ Walk □ Taxi □ I would not be able to get to/from Campus and/or around Rocky Mount
   □ Bicycle
9. **Should a Student Transit Fee be used to enhance transit access to/from Wesleyan College?**
   □ No □ Yes □ Yes, but only if Battleboro/Goldrock Shuttle hours of service are extended □ Yes, but only if Battleboro/Goldrock Shuttle frequency of service is extended □ Yes, but only if Wesleyan College has its own shuttle
10. **What is the acceptable fare students should pay to ride the Battleboro/Goldrock Shuttle?**
    □ Free □ Use a Student Transit Fee □ $1.25 (existing fare) □ $1.50 □ $2 □ Other _____
11. **On average, how often do you ride each of the following transit services in Nash or Edgecombe Counties?**

	5+ per week	2-4 per week	1-4 per month	Occasionally	Never
Batteboro/Goldrock Shuttle	□	□	□	□	□
Other Tar River Transit Buses	□	□	□	□	□

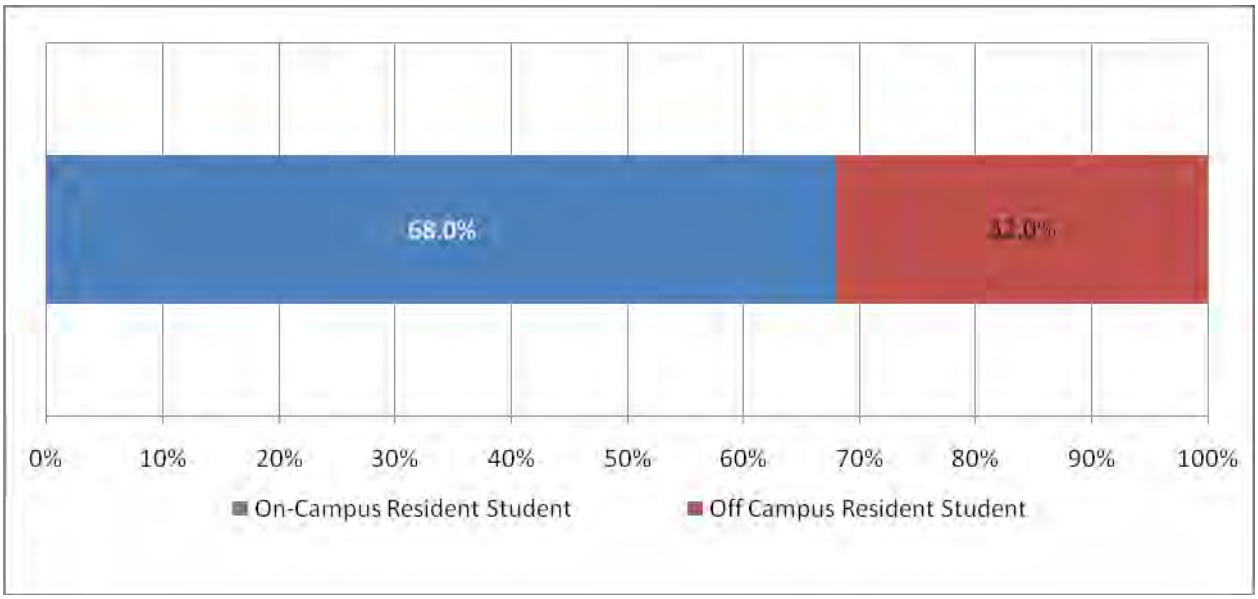
12. **What is the usual purpose of your Tar River Transit trip?**
    □ I do not ride Tar River Transit □ Work □ Recreation/Social
    □ School □ Medical/Dental Services □ Human/Social Services
    □ Shopping □ Personal Business
13. **Would any of these improvements make you use the Battleboro/Goldrock Shuttle more or entice you to use it:**
    □ More convenient pick-up/drop-off point on Campus □ Bicycle racks □ Student ride pass
    Write in location: _____
    □ More than one pick-up/drop-off point on Campus □ Late night service □ Free to ride
    Write in location(s): _____
    □ Saturday Service □ Sunday Service □ More destinations served
    □ More stops along the route.
    Write in stop locations: _____
14. **Please list specific destinations the Battleboro/Goldrock Shuttle should serve:**

    _____

Thank you for participating. If you have any questions, comments, or suggestions, please contact Adam at: 919-829-0328 (p) or transit@mabtrans.com

Q.1 Please select the group to which you belong:

Figure 1: Tar River Transit Service Student Survey: Question 1



Purpose:

To determine if surveyed NCWC students reside on- or off-campus.

Results:

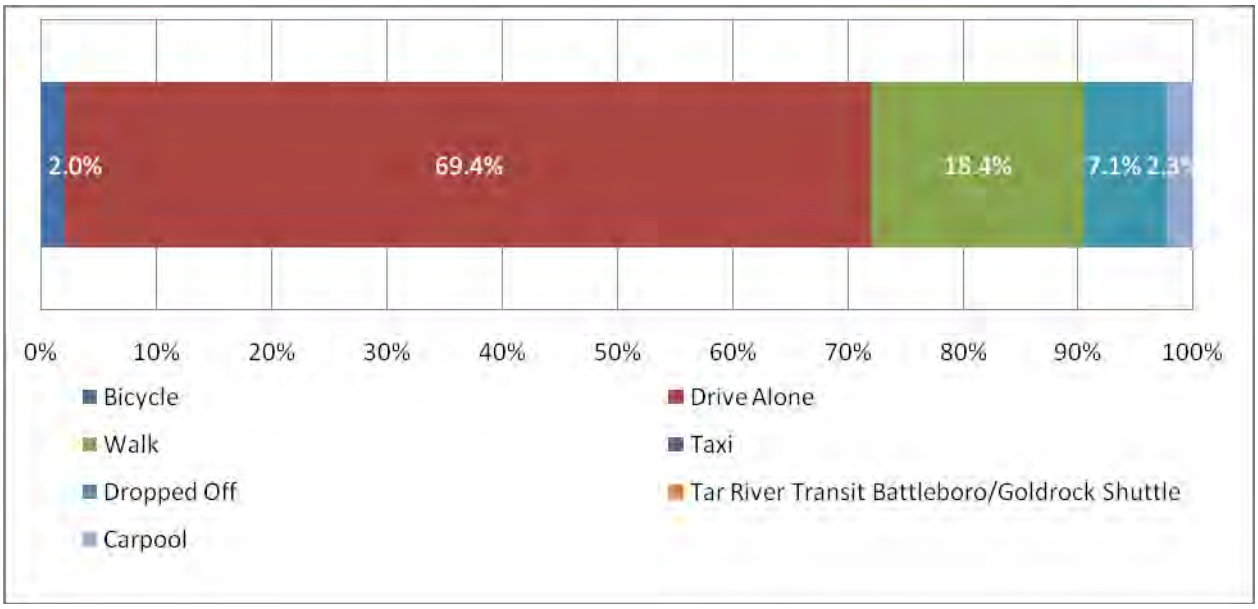
As shown in Figure 1, the vast majority of the respondents, 68 percent, live on-campus, with the remaining 32 percent residing off-campus.

Significance:

Most of the students live on campus, which means that they do not use Tar River Transit's Shuttle service to commute to school. However, these students may use to the Shuttle for other trips directly served by the Shuttle, including the Golden East Crossing Mall and downtown Rocky Mount where they can transfer to all other fixed-routes. The students living off-campus are more likely to use the shuttle for their daily commute to and from Wesleyan College. They are also likely to use Tar River Transit for other types of trips, especially if they already use the Shuttle to get to/from school.

Q.2 How do you usually commute to Wesleyan College?

Figure 2: Tar River Transit Service Student Survey: Question 2



Purpose:

To determine the types of transportation modes NCWC students use to get to/from school.

Results:

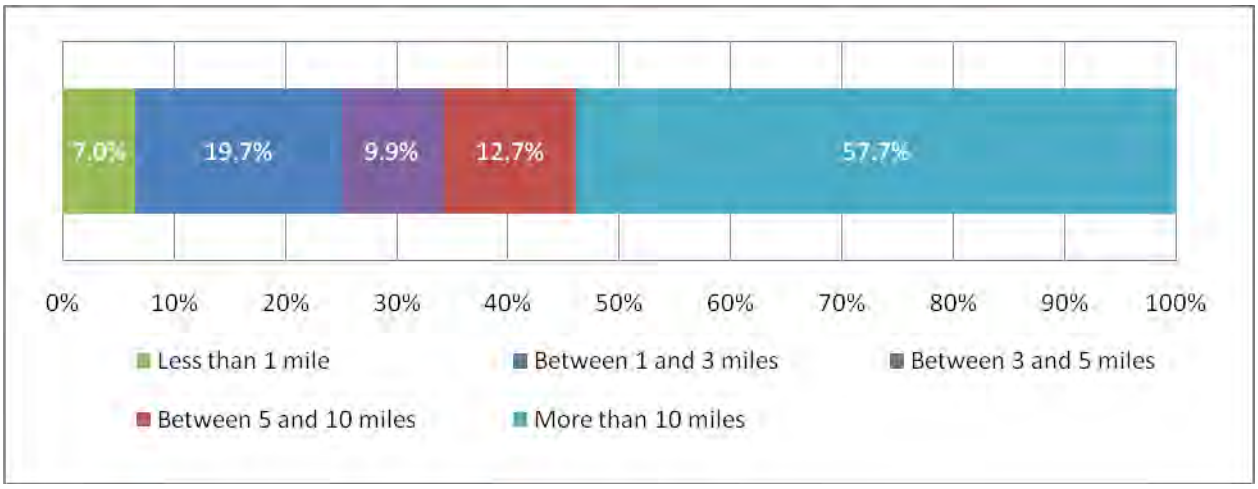
As shown in Figure 2, a private automobile is the most popular transportation mode among those students who commute to NCWC, with 69 percent of all respondents driving alone to school. About 18 percent of all respondents walk to school. About 9 percent of all respondents are dropped-off or carpool. The number of commuting students who ride the Tar River Transit Battleboro/Goldrock Shuttle, bicycle, or take a cab to get to school is negligible.

Significance:

The majority of students who commute to NCWC do so by driving – mostly alone, but some get dropped-off or carpool. Those commuters who drive to NCWC could potentially use transit if it was available and convenient enough. The students who walk or bike to College could use transit as well if the service was convenient and offered a reliable way of getting to/from campus, particularly since the Shuttle would offer protection from the weather.

Q.3 How far do you live from Campus?

Figure 3: Tar River Transit Service Student Survey: Question 3



Purpose:

To determine how far from NCWC the surveyed students reside.

Results:

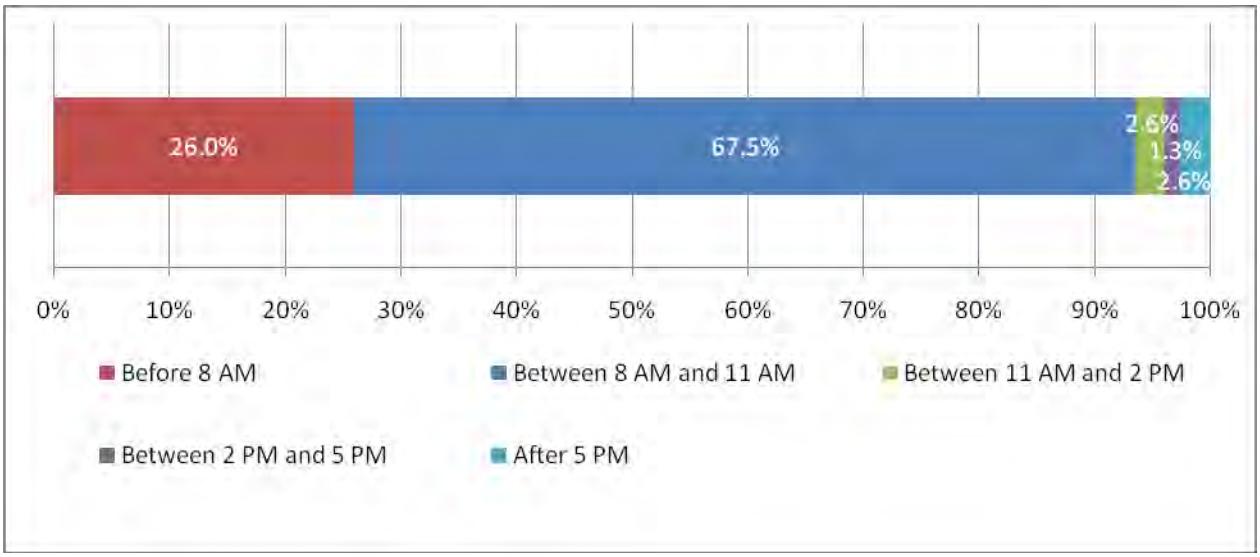
As shown in Figure 3, nearly 58 percent of all surveyed respondents residing off-campus live more than 10 miles from Campus, close to 20 percent live between 1 and 3 miles from Campus, and 23 percent live between 3 and 10 miles from Campus. Lastly, 7 percent of the students live less than a mile from campus.

Significance:

The Tar River Transit Battleboro/Goldrock Shuttle is the only Tar River Transit route that serves NCWC and the surrounding area. NCWC is located approximately 6 miles from the downtown Tar River Transit Transfer Center where opportunities to transfer to all Tar River Transit fixed-routes exist. Those commuting students who live more than 10 miles from Campus would need to rely on other Tar River Transit routes in addition to the Battleboro/Goldrock Shuttle to get to/from Campus: they would first need to take transit to the downtown Transfer Center where they would transfer to the Battleboro/Goldrock Shuttle that would take them to NCWC. Those commuting students who live within a three mile radius from the campus may also be able to walk or ride a bicycle to the campus, which indicates the importance of pedestrian and bike friendly environment near the campus. On the other hand, those close-proximity commuters could be potential transit riders if more transit stops existed near NCWC (Tar River Transit Community Transportation Service Plan has recommended additional stops along the Shuttle's future proposed alignment). Finally, the group of students residing between 3 and 10 miles from Campus could become potential transit riders if Tar River Transit served more places in general and/or offered more opportunities to transfer to the Battleboro/Goldrock Shuttle – without having to go all the way downtown. (Tar River Transit Community Transportation Service Plan has recommended formalizing the satellite transfer point where the two routes, along with a redesigned Sunset route would meet).

Q.4 What time do you typically arrive on Campus?

Figure 4: Tar River Transit Service Student Survey: Question 4



Purpose:

To determine what time the students typically arrive at NCWC.

Results:

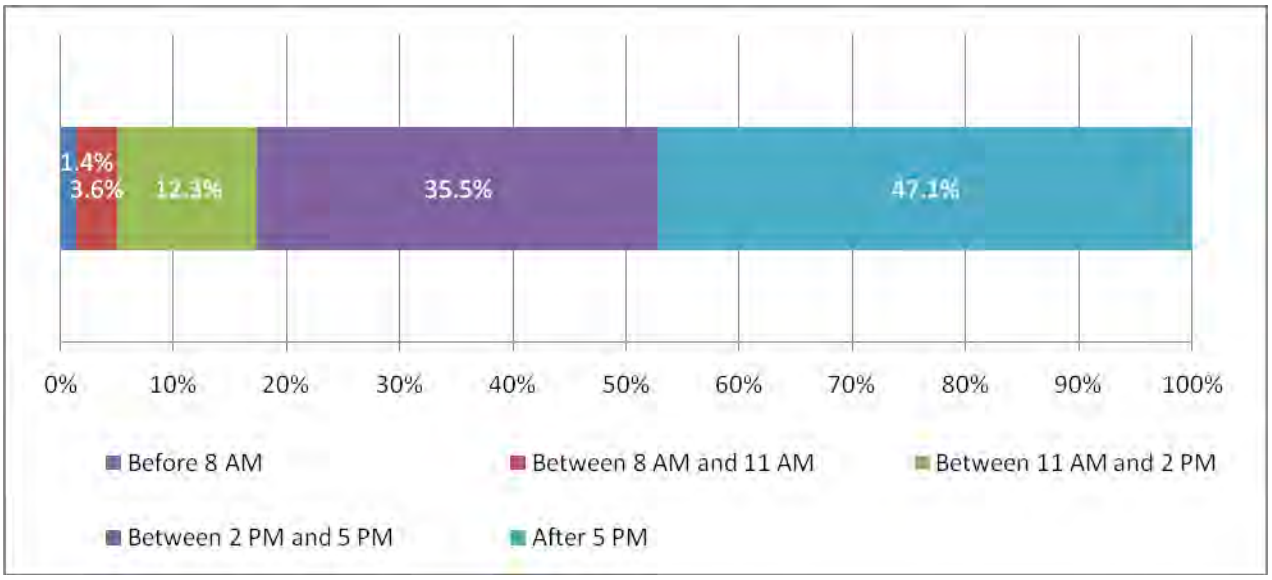
The results are shown in Figure 4. The majority of NCWC students typically arrive there between 8AM and 11AM (68 percent of the commuting students), with a large percentage of them arriving before 8AM as well (26 percent of the commuting students).

Significance:

The students who arrive at NCWC between 8AM and 11AM would be able to ride the Battleboro/Goldrock Shuttle to Campus (if their residences were served/located nearby a Shuttle stop). The first Battleboro/Goldrock Shuttle run departs the Transfer Center in downtown Rocky Mount at 7:15AM and arrives at Wesleyan College at 7:38AM

Q.5 What time do you typically leave Campus?

Figure 5: Tar River Transit Service Student Survey: Question 5



Purpose:

To determine what time the students typically leave NCWC.

Results:

The results are shown in Figure 5. The majority of the surveyed students, or 47 percent, leave the campus after 5PM. About 36 percent of students leave between 2PM and 5PM, and about 12 percent between 11AM to 2PM. The remaining 5 percent of the surveyed students typically leave campus before 11AM.

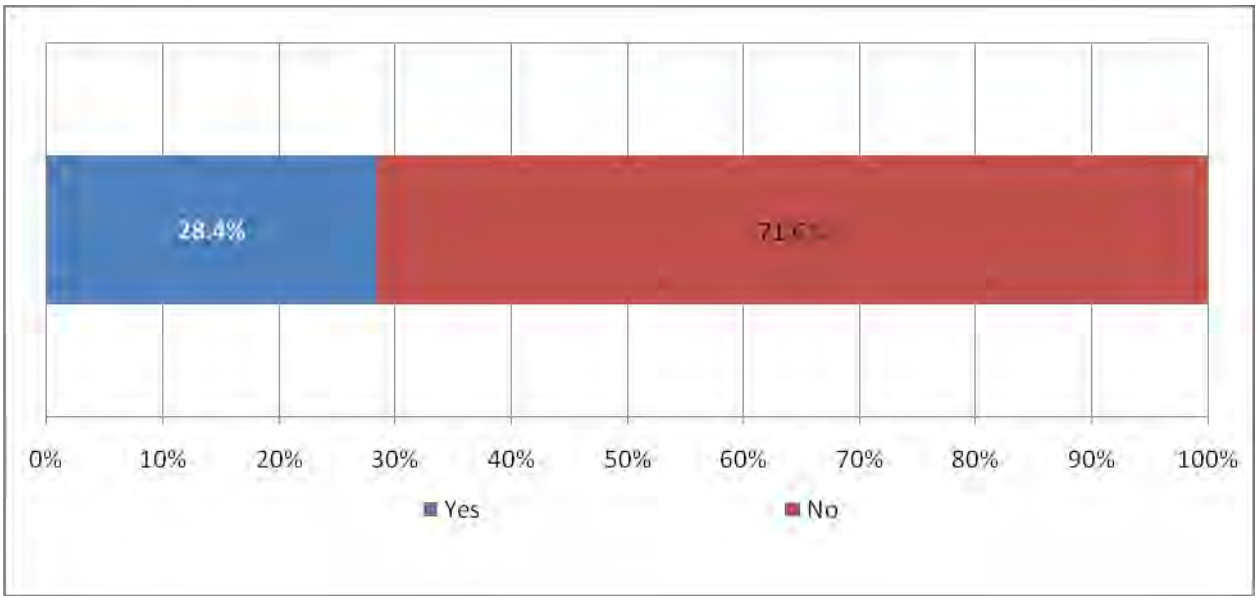
Significance:

As expected, students' departure times have more variation than students' arrival times at NCWC. The expected difference stems from the fact that some students might decide to remain on campus after they get out of the classrooms – some might take the time to study, read books at the library, socialize, etc. Nearly half of the surveyed students leave the Campus after 5PM, but the last inbound Battleboro/Goldrock Shuttle departures Wesleyan College at 4:38PM. Thus, those students would not be able to use transit to get from school if they wanted to.

In addition, there currently exists a mid-day break in the Shuttle's service – from 11:45AM to 1:15AM. Many of the students who indicated they typically leave NCWC from 11AM to 2PM would not be able to take the Shuttle back home either. It would be beneficial if the Battleboro/Goldrock Shuttle operated without the mid-day break in service and had extended hours of service in order to offer affected students a way of not only getting to NCWC, but also a way back home using the same transit service. (Tar River Transit Community Transportation Service Plan has recommended eliminating the mid-day break in service and extending weekday evening hours of service)

Q.6 Are you aware that Tar River Transit operates the Battleboro/Goldrock Shuttle to/from Wesleyan College?

Figure 6: Tar River Transit Service Student Survey: Question 6



Purpose:

To determine whether the students know the Tar River Transit Battleboro/Goldrock Shuttle exists.

Results:

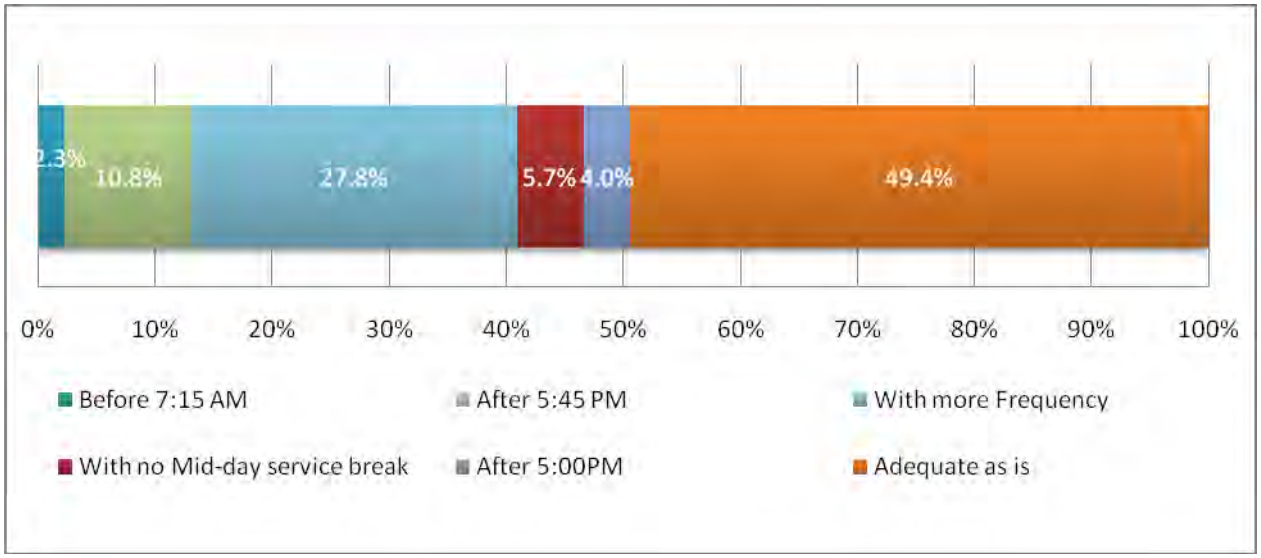
As shown in Figure 6, the vast majority of the respondents, 72 percent, were unaware of the Tar River Transit Battleboro/Goldrock Shuttle to/from Wesleyan College.

Significance:

From the survey, it is evident that most NC Wesleyan College students have little knowledge about Tar River Transit's Battleboro/Goldrock Shuttle to and from Wesleyan College. In order to maximize mobility options, it is important for Tar River Transit and NCWC to increase marketing efforts.

Q.7 The Goldrock/Battleboro Shuttle currently operates M-F from 7:15AM to 5:45PM with a mid-day break of no service from 11:45AM to 1:15PM. The route into town departs the campus every hour and a half. Are these service hours adequate or should the Shuttle operate:

Figure 7: Tar River Transit Service Student Survey: Question 7



Purpose:

To determine if the current Battleboro/Goldrock Shuttle schedule is adequate in terms of hours of service.

Results:

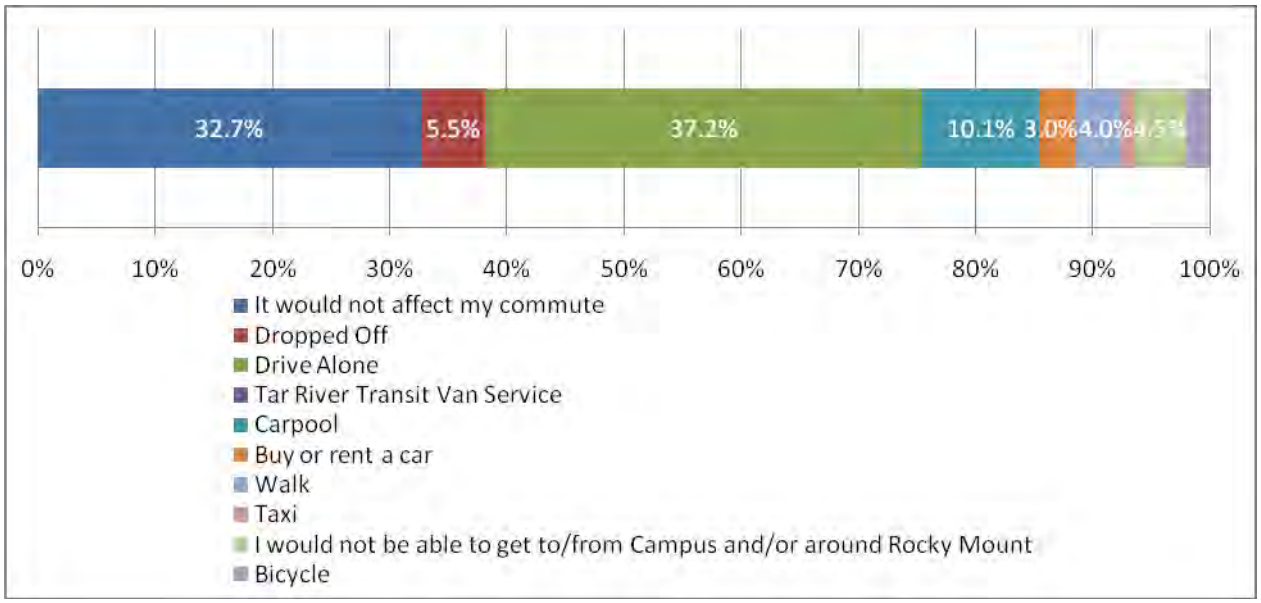
The results are shown in Figure 7. About half of the surveyed students indicated that the existing Battleboro/Goldrock Shuttle schedule is adequate. However, 28 percent indicated they would prefer more frequency of service. About 11 percent of the students would like the Shuttle's operating hours of service to be extended after 5:45PM. About 6 percent of the students indicated that the shuttle should operate with no mid-day service break.

Significance:

The data indicates that the students are divided when it comes to their assessment of the adequacy of the Shuttle's existing operating service hours; while half of the surveyed students believe that the Battleboro/Goldrock Shuttle operating service hours are adequate, the other half believes they are not, specifically pointing out lack of frequency of service and inadequate hours of service in the afternoons/evenings. It can be concluded that more students might be willing to use the Shuttle if it operates with more frequency and without the mid-day break. Extending the hours of service beyond the current schedule could entice more students to use the service as well. (Notably, Tar River Transit Community Transportation Service Plan has recommended eliminating the mid-day break in service as well as extending the hours of service by an additional 1 and ½ hour – as proposed, the last outbound Shuttle would depart from the Transfer Center at 6:08PM, and the last inbound run would depart Wesleyan College at 6:47PM, effectively arriving at the Transfer Center in downtown Rocky Mount at 7:15PM)

Q.8 If this shuttle service did not exist, how would you get to/from Wesleyan College and the Rocky Mount community?

Figure 8: Tar River Transit Service Student Survey: Question 8



Purpose:

To determine how the students would commute if the Shuttle service was not available.

Results:

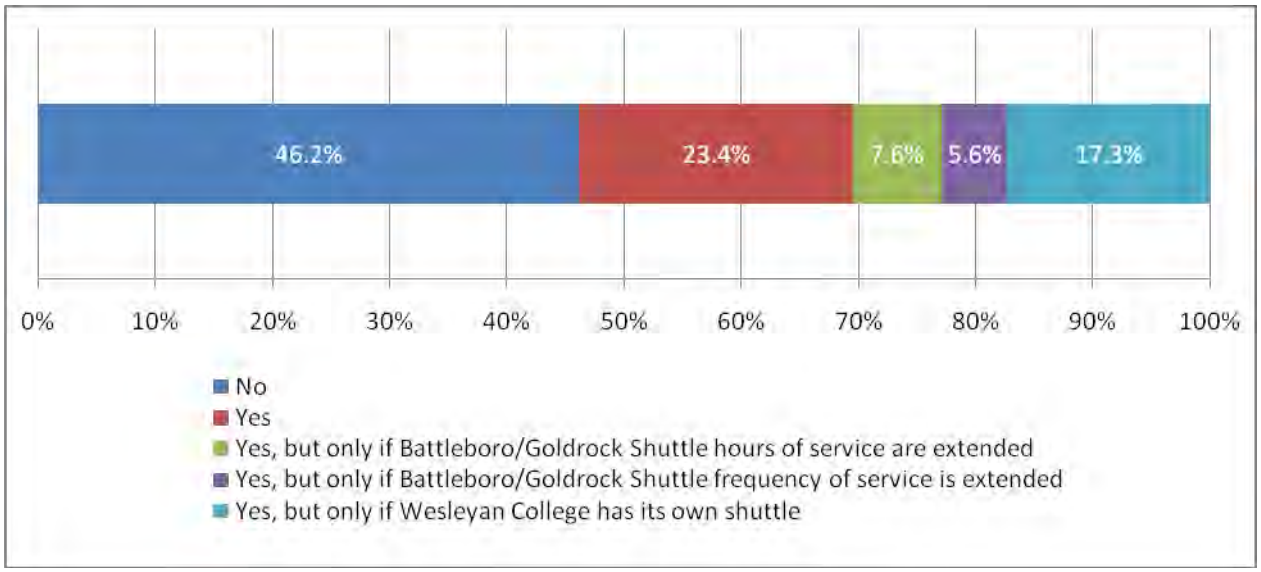
As expected, a large percentage of the students, 37 percent, would continue to drive alone if the Shuttle did not exist, while an additional 33 percent of respondents' commute would not be affected. About 10 percent of the students would carpool, and 6 percent would get a ride from someone else. About 6 percent would use a non-motorized mode of transportation to get to NCWC, namely walking and bicycling. Lastly, 5 percent of the students would not be able to get to/from NCWC if the Shuttle did not exist.

Significance:

While the majority of the students would continue using motor vehicles to get to and from NCWC (including carpooling and getting a ride from someone), and are considered transit choice riders, it is important to note that about 5 percent of the surveyed students indicated that they would not be able to make the trip to and from NCWC if the Tar River Transit Battleboro/Goldrock shuttle was not available. These students are considered captive transit riders that fully depend on the Shuttle to get around, including getting to and from NCWC. It is important to continue providing and enhancing the Shuttle's service as these riders' mobility depends on it.

Q.9 Should a Student Transit Fee be used to enhance transit access to/from Wesleyan College?

Figure 9: Tar River Transit Service Student Survey: Question 9



Purpose:

To determine if the students would support or oppose the use the Student Transit Fee to enhance transit access to and from Wesleyan College.

Results:

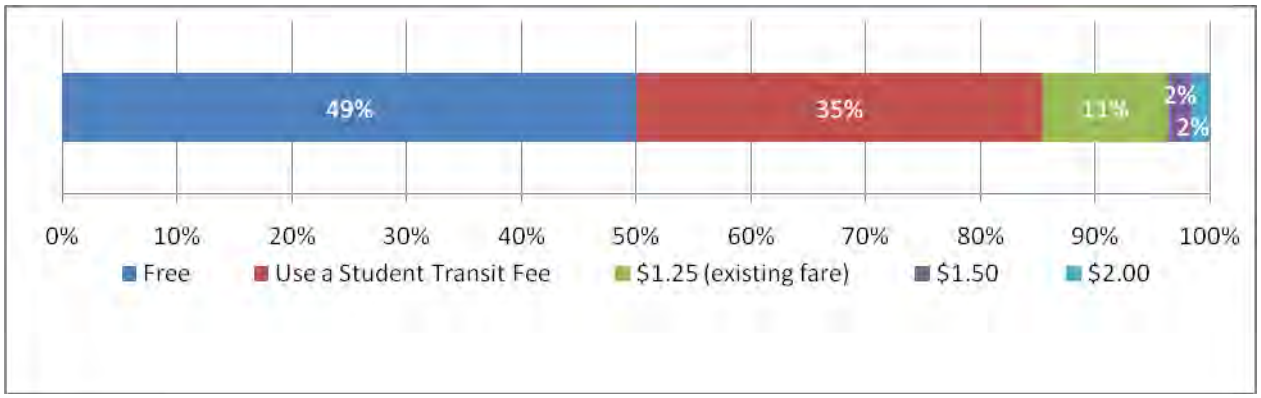
Nearly half of the students, or 46 percent, were against the use of a Student Transit fee to enhance transit access to/from NCWC. About 23 percent of the respondents were in support of using the Student Transit fee to enhance transit access. The rest of the students, or 31 percent, supported the use of Student Transit fee but only if certain conditions were met: if NCWC operated its own Shuttle (17 percent), if the existing Tar River Transit Shuttle's shuttle operating hours of service were extended (8 percent), and if the existing Tar River Transit Shuttle's shuttle frequency of service was increased.

Significance:

More than half of all students support a Student Transit Fee that would enhance transit access by extending service hours, increasing frequency, or creating a dedicated shuttle. While NCWC could perhaps operate its own dedicated shuttle, there may be opportunities to work with Tar River Transit to enhance service while branding the Battleboro/Goldrock Shuttle with NCWC logos.

Q.10 What is the maximum fare students should pay to ride the Battleboro/Goldrock Shuttle?

Figure 10: Tar River Transit Service Student Survey: Question 10



Purpose:

To determine the transit fare students would be willing to pay to ride the Battleboro/Goldrock Shuttle.

Results:

As shown in Figure 10, about half of the respondents believe that the Battleboro/Goldrock Shuttle should be fare-free. About 35 percent indicated that a Student Transit Fee should be used to pay for rides on the Shuttle. Notably, this percentage is much higher than the 23 percent of the respondents who supported use of the Student Transit Fee unequivocally when asked in Question 9, indicating that the students would rather use the Student Transit Fee to pay their transit fare as opposed to paying for it directly – perhaps students do not consider the Student Transit Fee as a direct out-of-pocket cost when compared to cash fare.

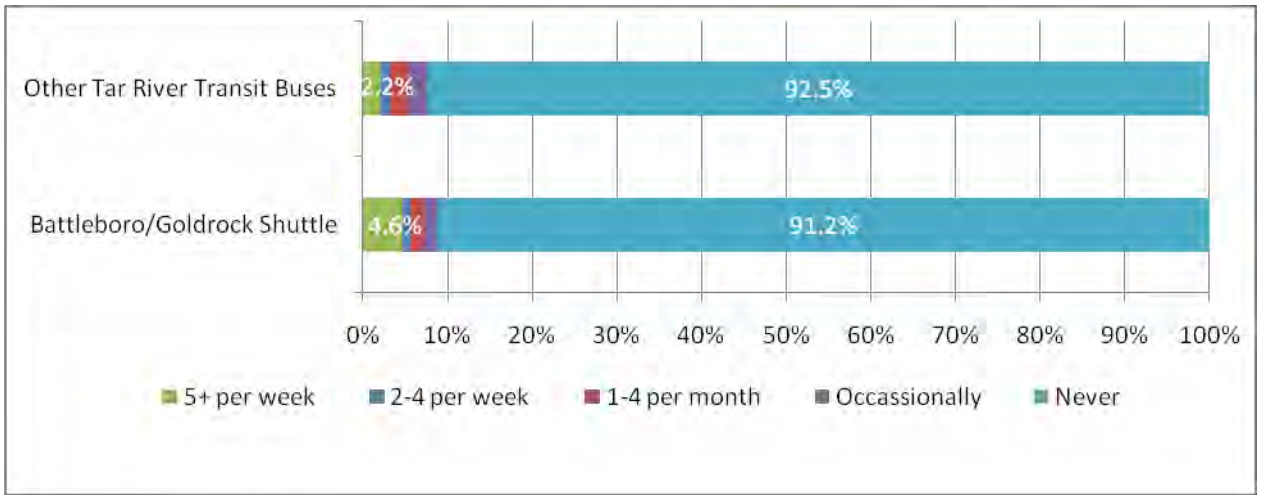
About 4 percent of the student would be willing to pay more than the existing $1.25 transit fare – while this constitutes a fairly low percentage of the respondents, it may have been higher if the question had a qualifier attached to it, such as 'if the hours of service were extended' or 'if the frequency of service was increased.'

Significance:

The data suggests that about half of the students believe the Shuttle should be fare-free. A surprisingly high number of respondents would like to have a Student Transit Fee to be used in lieu of fares. While the fare-free service is not really an option considering the Shuttle's overall low efficiency and service measurement performance levels (especially compared to other Tar River Transit fixed-routes), NCWC could propose a Student Transit Fee that would be used to support Tar River Transit's Battleboro/Goldrock Shuttle and also be used by students in lieu of transit fares. Another option would be comprised of an enacted mutual agreement between Tar River Transit and Wesleyan College where a fixed lump sum of money is paid by the College to the transit provider in order to enable the students and staff/faculty to ride the service for free with their college ID

Q.11 On average, how often do you ride each of the following transit services in Nash and Edgecombe counties?

Figure 11: Tar River Transit Service Student Survey: Question 11



Purpose:

To determine how often students ride the Battleboro/Goldrock Shuttle and other Tar River Transit buses.

Results:

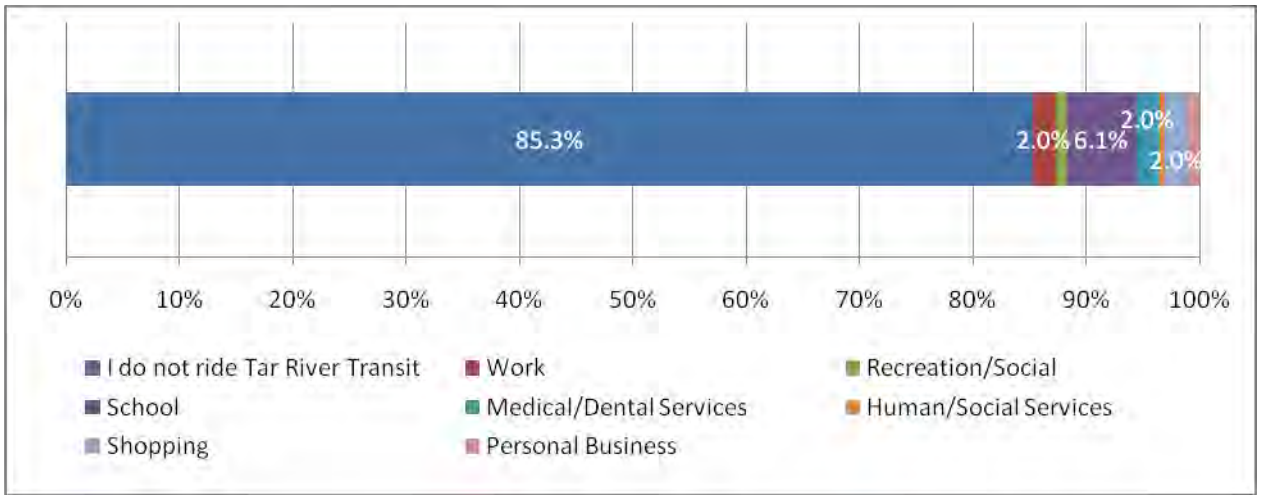
As seen in Figure 11, about 92 percent of the students do not use Tar River Transit services at all. About 6 percent of the students are regular Shuttle riders since they ride at least 2 to 4 time a week. About 3 percent of the students are also regular systemwide Tar River Transit riders since they ride other Tar River Transit buses at least 2 to 4 time a week. The rest of the students are occasional transit riders.

Significance:

The existing Battleboro/Goldrock Shuttle is the most popular Tar River Transit route among the surveyed students. While a small percentage of the respondents use other Tar River Transit routes regularly or at least occasionally, both the students and the transit agency would benefit the most from service improvements to the existing Battleboro/Goldrock Shuttle.

Q.12 What is the usual purpose of your Tar River Transit trip?

Figure 12: Tar River Transit Service Student Survey: Question 12



Purpose:

To determine the trip purpose of students who ride Tar River Transit.

Results:

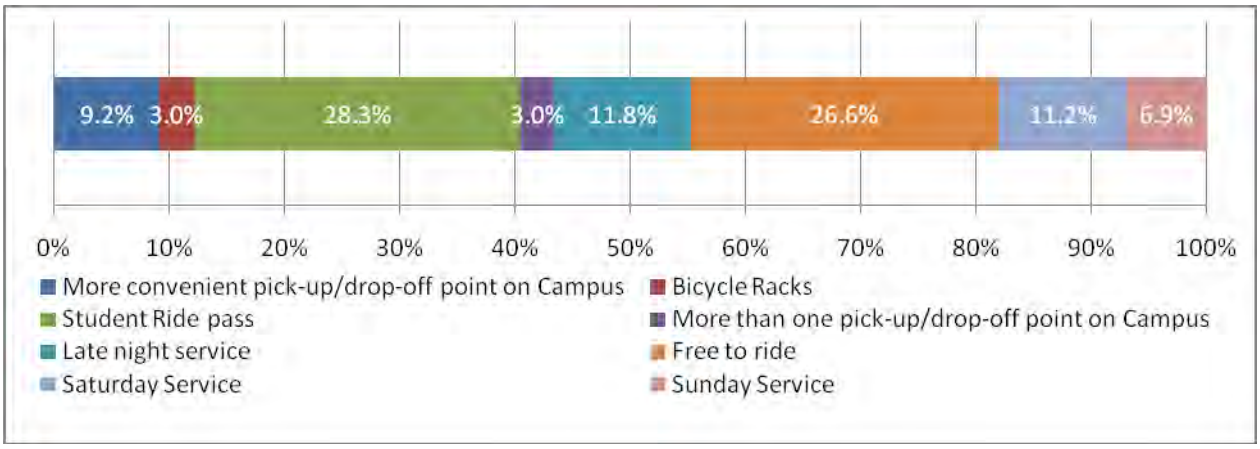
The results indicate that about 85 percent of the students do not ride Tar River Transit. Those who do use Tar River Transit services, tend to ride it to school (40 percent of transit riders), followed by work, medical services trips, and shopping (each about 13 percent of the transit-riding student body).

Significance:

While Tar River Transit is utilized for a variety of purposes by the respondents, they tend to use it to get to and from school, which is to be expected. That being said, students could be enticed to use Tar River Transit if the Battleboro/Goldrock Shuttle had longer operating hours and served more destinations.

Q.13 Would any of these improvements make you use the Battleboro/Goldrock Shuttle more or entice you to use it: (Check all that apply)

Figure 13: Tar River Transit Service Student Survey: Question 13



Purpose:

To determine the types of service improvements that could increase the student ridership levels.

Results:

As shown in Figure 13, 28 percent of the students indicated that they would use the Battleboro/Goldrock Shuttle more often if a student ride pass was available. About 27 percent of the respondents indicated that they would use the shuttle more often if it was fare-free. Longer hours of service were a concern for 12 percent of the respondents, while 11 percent of the students would ride the Shuttle more often if it operated on Saturdays. Notably, about 9 percent of the students would ride the Shuttle more often if a more convenient transit pick-up/drop-off point existed on Campus. It seems the students were concerned with the location of the existing Shuttle stop at NCWC rather than number of the stops, since only 3 percent of them indicated that there was a need for more than one Shuttle stop at NCWC. Sunday service and bicycle racks on vans would likely have very little influence on the students' decision on whether to ride the Battleboro/Goldrock Shuttle.

Significance:

Tar River Transit and NCWC would have the best chances of increasing the number of students riding the Battleboro/Goldrock Shuttle if a Student Ride Pass was made available (or if a Student Transit Fee was used in lieu of transit fare for eligible students). The potential riders would also be more likely to use the Shuttle if its hours of service were extended in the evenings and if the service was offered on Saturdays. Lastly, Tar River Transit and NCWC should work together to assess whether the existing NCWC Shuttle stop is located in the most optimal and convenient location. Some of the specific suggestions made by the surveyed students in terms of an alternative Shuttle stop's location at NCWC included:

- Hardees
- Café/refreshements area
- In front of the gate

- In front of the fountain
- Taylor Center
- Hartness Center
- Bridgewood Road

Q.14 Please list specific destinations the Battleboro/Goldrock Shuttle should serve.

Purpose:

To determine if there is a need to add stops to the Battleboro/Goldrock Shuttle.

Results:

A variety of responses were given, with at least 6 respondents specifically citing the Mall (presumably the Golden East Crossing Mall) and Wal-Mart. Target and Food Lion were also cited multiple times. Other destinations needed to be served by the Shuttle included Wildwood Trace Apartments, Premiere Theatres, the Amtrak station, local High Schools, football fields, 'Café,' Whitakers, local restaurants, doctors' offices, churches, and Raleigh and Zebulon.

Significance:

What is perhaps the most surprising is that many students asked for destinations that are already served by the Shuttle, most notably the Golden East Crossing Mall or Amtrak Station in downtown Rocky Mount, which indicates their lack of access to transit or knowledge in regards to the Shuttle's existing routing. Thus, increased Tar River Transit marketing efforts on Campus are crucial to increase the students' awareness about transit options available to them.

Many of the other locations cited by the students are currently accessible by Tar River Transit, but not served directly by the Battleboro/Goldrock Shuttle – riders must transfer at the Transfer Center downtown to other existing transit routes in order to reach those destinations. However, the Tar River Transit Community Transportation Service Plan proposed a modifed Battleboro/Goldrock Shuttle (as shown in Figure 14), with realigned routing that would directly serve many of the destinations requested by the students, including new stops at Wal-Mart (located near Target as well), Wildwood Trace Apartments, and Premiere Theatres. Lastly, it should be noted that the proposed Satellite Transfer Point at the Golden East Crossing Mall would benefit student riders as well, since they no longer would need to go all the way downtown to transfer to the Sunset route, as an example, if they needed to get to Nash General Hospital – they could instead transfer to Sunset as well as Golden East routes from the Shuttle at the Satellite Transfer Point directly.

Figure 14: Proposed Battleboro/Goldrock Shuttle service