

Upper Savannah Regional Transit Plan



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and



for the

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Section 1: Introduction

1.1 Purpose of Statewide Multimodal Transportation Plan

The South Carolina Statewide Multimodal Transportation Plan is being developed to set a course for future transportation investments in South Carolina. It is a long-range planning effort intended to establish a strategic statewide transportation vision, focusing on the mobility of people and the efficient movement of freight and goods. The overall plan consists of three major components that are connected and coordinated:

- Statewide Corridor Plan;
- Statewide Transit Plan; and
- Statewide Railroad Right-of-Way Preservation Plan.

These elements will be linked to provide a cohesive strategy and vision for transportation investments in the state.

1.2 Purpose of Regional Plan

Public transit is an integral part of the region's transportation network. Transit provides mobility to thousands of residents in the region, and is an important tool to foster personal independence and promote economic development. Transit is more than just buses in cities; some form of transit is available in many parts of the state in both rural and urban areas. However, the extent of service varies greatly from region to region.

The Statewide Plan compiles findings developed throughout the study process, focusing on strategies and action items for South Carolina transit in general. The following elements have been included:

- Service needs and strategies – General descriptions for transit service improvements to meet the identified needs;
- Financial needs and strategies – Funding projections for existing services, as well as proposed services. These costs are compared to funding estimates using existing sources as well as potential new sources.
- Capital / technology needs and strategies – Projections of vehicle needs, technology needs (e.g. ITS applications), and facility needs (e.g. multimodal centers) are given.
- Policy needs and strategies – Suggested policy revisions and general planning guidelines are addressed. Transportation coordination issues regarding human service agencies are included in this discussion.

A goal of the transit element of the overall Statewide Plan was to produce recommendations that are geared toward both “statewide” and “regional” interests. At the regional level, strategies and action items were defined that local planners (including



COGs, MPOs, and municipalities) and transit agencies can support and use. These action items vary from region to region, depending on the pertinent concerns and needs in each area. For the purposes of this study, the “regions” are defined as the ten planning regions in South Carolina as defined by COG boundaries. This document is the Upper Savannah Regional Transit Plan. A separate overall Statewide Plan and nine other Regional Plan documents that are tied to the overall statewide transit plan examine each of the other regions of the state.

A map showing the location of the Upper Savannah Council of Governments, along with the other nine regions, is included as Figure 1.

Figure 1: Location of Upper Savannah Region



Source: South Carolina Department of Transportation



Section 2: Overview of Transit in the Region

South Carolina is primarily a rural state, but one that is rapidly growing and urbanizing in many areas. Although transit needs are significant in both rural and urban areas, existing transit services vary widely in terms of the availability and scope of services. In urban areas, fixed-route services operate on set schedules and routes, and demand-response services operate according to demand within a defined service area. In rural areas, demand-response services cover a wide area, and commuter services enable connections to urban areas in some regions.

2.1 Existing Conditions

Each of the state's ten planning regions has unique conditions and demands related to transit. Key demographic characteristics for the Upper Savannah region are presented in this section, along with an overview of current transit operations. The Upper Savannah region consists of six counties in western South Carolina: Abbeville, Edgefield, Greenwood, Laurens, McCormick, and Saluda.

2.1.1 Overall Population

In 2005, the combined population of the Upper Savannah region was about 219,000 people. Two counties (Greenwood and Laurens) have about 140,000 people in combined population. All counties grew from 2000 to 2005 at a rate less than the state average of 6.1 percent. The entire region had a population growth rate of 1.5 percent from 2000 to 2005, significantly less than the state as a whole.

2.1.2 Elderly Population

Overall, in 2005, 12.4 percent of the South Carolina's population was aged 65 years and older. For the region as a whole, 13.7 percent of the population is elderly—higher than the state's average. At 10.9 percent, Greenwood County had the lowest percentage of elderly, and McCormick County (at 19.7 percent) had the highest proportion.

2.1.3 Persons Below the Poverty Level

About 13.8 percent of the state's population (in 2003) was considered at or below the poverty level. All of Upper Savannah's six counties are above this percentage, indicating relatively higher levels of poverty. At 16.1 percent, Laurens County has the highest proportion of poverty level persons while Greenwood County had the lowest at 13.9 percent. The Upper Savannah region is relatively disadvantaged economically when compared to the state as a whole.

2.1.4 Median Household Income

The median South Carolina household (in 2003) had an annual income of \$38,003. All of the region's counties are below this level with Abbeville and McCormick Counties having the lowest income at \$30,496 and \$30,393, respectively. Greenwood County has the highest income level at \$34,578.



2.1.5 Change in Daytime Population

Greenwood County is the only Upper Savannah County to experience an increase in daytime population while the remaining counties have decreases. Greenwood County gains about 6.3 percent in daytime population, while Saluda and Abbeville Counties lose the most (19 percent and 11.9 percent, respectively).

2.1.6 Demographic Summary

The Upper Savannah region is largely rural, with a relatively poor population. There are no large urban areas in the region, and most areas in the region are experiencing only limited growth. The region also has a comparatively high percentage of elderly residents. These demographic characteristics result in transit challenges from the standpoint of providing connections to a sparsely-populated region with few major destinations within the region.

2.2 Future Conditions

Table 1 shows projected changes in the region's population. The region as a whole is expected to grow generally at the same pace as the rest of the state with some counties outpacing the state and region in 2010, 2020 and 2030. McCormick and Laurens Counties should see growth rates higher than the state average. Table 2 shows that the region will continue to be largely rural with Laurens and Greenwood Counties as the main population centers.

Table 1: Upper Savannah Region Population Growth Rates

County	2000 to 2005 (%)	2005 to 2010 (%)	2005 to 2020 (%)	2005 to 2030 (%)
Abbeville	(0.1)	5.2	11.8	17.8
Edgefield	3.8	5.5	20.3	33.1
Greenwood	2.6	4.4	12.0	19.4
Laurens	1.0	7.9	20.2	31.3
McCormick	1.5	10.0	22.1	34.0
Saluda	(1.5)	5.1	12.4	18.4
Upper Savannah COG	1.5%	6.1%	16.1%	25.2%
South Carolina	6.1%	4.7%	15.5%	26.2%

Source: Data by SCDOT

Table 2: Upper Savannah Region Population Projections by County

County	2000	2005	2010	2020	2030
Abbeville	26,167	26,133	27,480	29,210	30,790
Edgefield	24,595	25,528	26,930	30,700	33,990
Greenwood	66,271	67,979	71,000	76,150	81,160
Laurens	69,567	70,293	75,850	84,470	92,310
McCormick	9,958	10,108	11,120	12,340	13,540
Saluda	19,181	18,895	19,860	21,230	22,370
Upper Savannah COG	215,739	218,936	232,240	254,100	274,160
South Carolina	4,012,012	4,255,083	4,458,920	4,916,900	5,371,150

Source: Data by SCDOT



2.3 Local / Regional Transit Services

The Upper Savannah region has limited transit services that are available to the general public. Although a number of human service agencies provide transportation for their particular clients, only the Edgefield County Senior Citizens Council (ECSCC) makes their services available to the general public. ECSCC operates demand response services oriented primarily to their senior clients, but any resident of Edgefield County is eligible for service. No other general public transit services are available in any of the other five counties in the Upper Savannah region.

2.3.1 Regional Overview

ECSCC, the only public transit provider in the region, had 13 vehicles providing service in FY 2005, which is slightly higher than previous years. In FY 2005, the system provided approximately 45,000 passenger trips.

Table 3 illustrates the trends in the number of active vehicles. As shown in the table, ECSCC experienced some growth in FY 2005. Prior to that year, the fleet size had been stable for several years. Growth occurred in FY 2005 for both demand response and “other” (special contracted) services.

Table 3: Total Upper Savannah Vehicles in Maximum Service (FY 2002 to FY 2005)

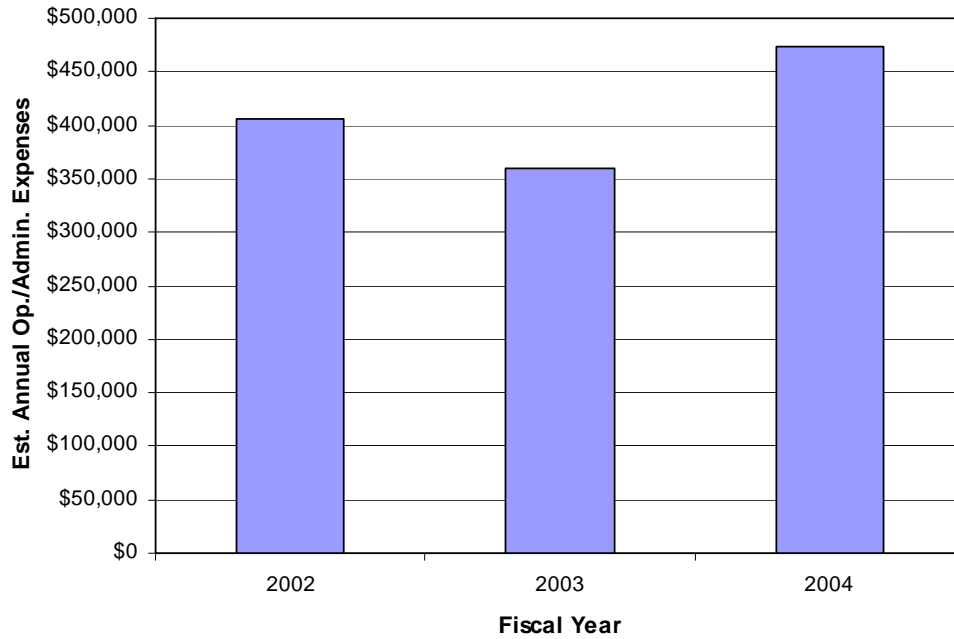
Area	Fiscal Year			
	2002	2003	2004	2005
Fixed Route	0	0	0	0
Demand Response	7	7	7	9
Other	3	3	3	4
Totals	10	10	10	13

Source: Data by SCDOT

Estimated annual operating costs of the ECSCC services totaled just under \$200,000 in FY 2005. The fleet size was stable for the most part and in fact increased slightly in FY 2005, and operating costs were also fairly stable during the period, as shown in Figure 2. Operating costs are not shown for FY 2005 due to possible data inconsistencies.



Figure 2: Annual Operating Expenses (Region Totals FY 2002 to FY 2005)



Source: Data by SCDOT

2.3.2 Trends in Ridership and Amount of Service Provided

The ridership and amount of service provided in the Upper Savannah region has declined over the four-year analysis period. Tables 4 through 6 present data for ridership, vehicle miles of service, and vehicle hours of service, broken down by type of service as well as by urban and rural setting.

Table 4 shows ridership by type of service (fixed route, demand response, other) as well as by geographic area (urban versus rural). The service is exclusively rural and is used mainly by demand response customers.

Table 4: Total Upper Savannah Passengers (FY 2002 to FY 2005)

Service Type	Fiscal Year			
	2002	2003	2004	2005
Fixed Route	-	-	-	-
Demand Response	42,113	44,693	34,679	31,191
Other	10,661	10,126	12,055	14,347
Totals	52,774	54,819	46,734	45,538

Area	Fiscal Year			
	2002	2003	2004	2005
Urban	-	-	-	-
Rural	52,774	54,819	46,734	45,538
Totals	52,774	54,819	46,734	45,538

Source: Data by SCDOT



Tables 5 and 6 show the amount of service provided in terms of vehicle miles and hours respectively. Service provided is shown both for type of service (fixed route, demand response, other) and geographic area (urban versus rural). Rural demand response and “other” are roughly equivalent in terms of service provided. There has been a notable decrease in the amount of demand response services offered.

Table 5: Total Upper Savannah Vehicle Miles (FY 2002 to FY 2005)

Area	Fiscal Year			
	2002	2003	2004	2005
Fixed Route	-	-	-	-
Demand Response	274,786	163,027	162,749	144,486
Other	198,024	138,670	169,876	198,344
Totals	472,810	301,697	332,625	342,830

Area	Fiscal Year			
	2002	2003	2004	2005
Urban	-	-	-	-
Rural	472,810	301,697	332,625	342,830
Totals	472,810	301,697	332,625	342,830

Source: Data by SCDOT

Table 6: Total Upper Savannah Vehicle Hours (FY 2002 to FY 2005)

Area	Fiscal Year			
	2002	2003	2004	2005
Fixed Route	-	-	-	-
Demand Response	13,530	15,587	14,697	12,575
Other	9,407	13,246	14,967	17,143
Totals	22,936	28,832	29,664	29,718

Area	Fiscal Year			
	2002	2003	2004	2005
Urban	-	-	-	-
Rural	22,936	28,832	29,664	29,718
Totals	22,936	28,832	29,664	29,718

Source: Data by SCDOT

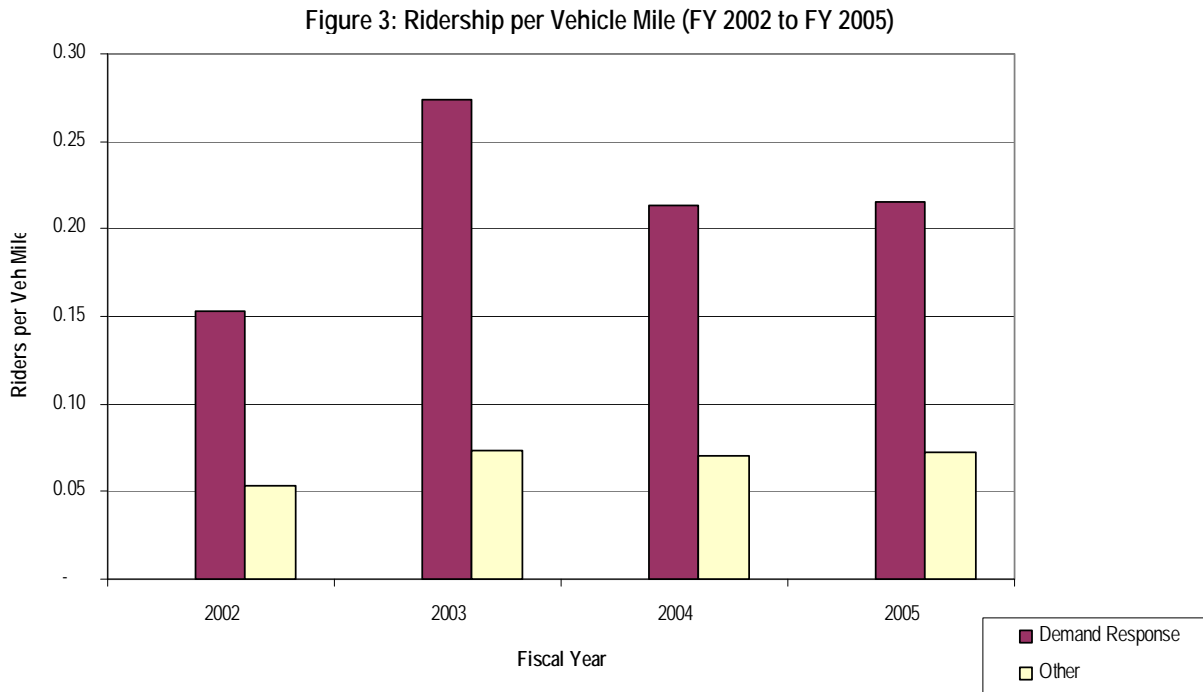
2.3.3 Trends in Efficiency and Effectiveness

Figures 3 through 5 present regional trends in revenue and expenses as well as measures of key cost efficiency and service effectiveness. These measures include the following:

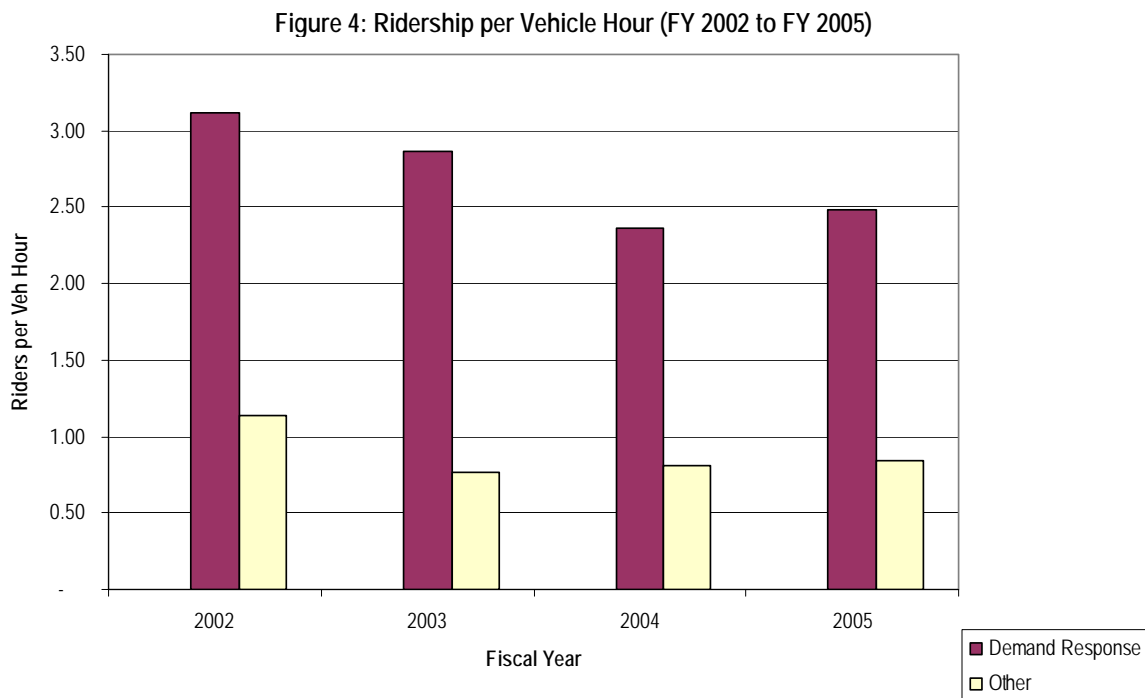
- Ridership per vehicle mile;
- Ridership per vehicle hour; and
- Operating cost per rider, per mile, and per hour.

As shown in Figure 3 and 4, ridership per mile and ridership per hour, respectively, have remained generally steady during the four year period, with some fluctuations in the demand response service sector.





Source: Data by SCDOT

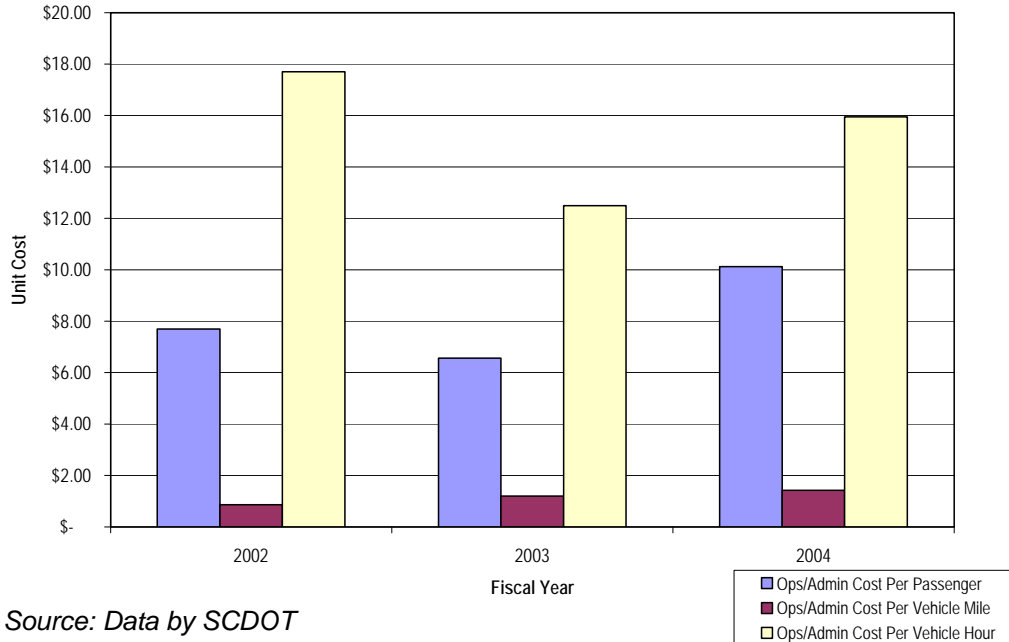


Source: Data by SCDOT



Finally, Figure 5 shows some fluctuation in cost efficiency measures in recent years, although the cost per vehicle hour figure remains low relative to other systems and regions.

Figure 5: Operating Cost per Passenger, per Vehicle Mile and per Vehicle Hour



Source: Data by SCDOT

2.4 Strategic Planning Efforts

In the last three to five years, only one significant transit study was conducted. In 2002, the Upper Savannah Council of Governments received a report that examined the feasibility for transit in Greenwood and Laurens Counties.¹ The study had two goals. First, improve coordination. Second, determine the feasibility of public transit. The study included a demographic analysis of the region, the calculation of “transit propensity” in the area, and explored the concept of service coordination.

The study found that there is a high demand for transit in both Greenwood and Laurens Counties. The study also recommended a multi-stage coordination process among the agencies by creating, among other things, joint user policies (such as cancellation and no show policies), adopting a common logo and vehicle color scheme. In addition, as time goes on, the cooperation can graduate to trip sharing, and eventually inter county coordination.

Finally, the study presented a plan for implementing public transit in Greenwood County. Very few recommendations from the study have been implemented, due to lack of agency support.

¹ *A Feasibility Study and Implementation Plan for Coordinated Transportation Services in Greenwood and Laurens Counties, South Carolina*, RLS and Associates, Inc., March 2002.



Currently, the region is working on a study of regional transit coordination strategies, in response to the Federal Transit Administration's emphasis on increased coordination of transit services.

2.5 Stakeholder Input

A series of interviews was conducted with key regional leaders in the planning community to understand the needs, issues, and goals related to transit in each region from the individual perspectives of the stakeholders. This input is a valuable tool in the assessment of existing attitudes toward transit and the potential roles of transit in the future. The information from these interviews will be considered along with the results of the focus group sessions and public survey effort to develop a more complete picture of issues and needs from the local perspective of the region.

2.5.1 List of Interviewees

Personal interviews were conducted with several community leaders, including representatives of the following agencies and organizations:

- Abbeville County;
- Edgefield County Senior Citizens Council;
- Greenwood City / County Planning; and
- Upper Savannah Council of Governments.

2.5.2 Interview Questions

Each of the interviewees was asked the same set of questions:

1. What is your agency's role in public transportation?
2. How is transit perceived in your community?
3. What are the primary mobility issues in your region? How can transit help improve the situation?
4. What are major gaps in transit service locally?
5. What are the top opportunities facing transit in your area – now, over the next five years, and long-term (10 to 20 years)?
6. What are the top challenges / potential barriers facing transit in your area - now, over the next five years, and long-term (10 to 20 years)?
7. What is the level of local support for transit (financially, politically, and otherwise)?
8. What should the role of transit be in your community in the next twenty years? How does transit fit into the region's vision for the future?
9. What steps can be taken to help meet regional goals for transit?
10. What should the role of the State of South Carolina be in transit?
 - i. Is the state doing enough? If not, what should it be doing? If yes, is it doing too much?
 - ii. What are examples of positives coming from State? What are areas in need of improvement?



2.5.3 Summary of Input

General responses to each of the questions are summarized below. The paraphrased comments are not linked to specific individuals, but are indicative of the array of comments received.

- **How is transit perceived in your community?**

Stakeholders think that transit is a tough sell in the Upper Savannah region. There is a real prejudice against transit and transit riders. There is no traffic congestion, so the assumption is that transit only serves / would serve poor people. There is a feeling that there is no need for “another safety net” for poor people, and there is no push for transit service from any group of potential users.

- **What are the primary mobility issues in your region? How can transit help improve the situation?**

Mobility issues in the region are fairly limited in scope. Traffic congestion is not a concern, but there is a concern for residents who have limited transportation options. In particular, there is a concern for elderly people who have retired in the region from out of state, and thus do not have deep local family and friendship links that would allow them to get rides. Also, there is beginning to be a problem with the ability of low-wage workers being able to afford their long commutes to cities outside the region such as Greenville.

- **What are major gaps in transit service locally?**

There is no public transportation service in much of the region (only limited service is available to the general public on a demand-response basis in Edgefield County). Taxi service is available to some extent in the City of Greenwood and in Saluda. There is, apparently, informal taxi / van service provided by members of the growing Hispanic community for that community in Saluda. There are no intercity transit options; Greyhound discontinued its last service in the region.

- **What are the top opportunities facing transit in your area – now, over the next five years, and long-term (10 to 20 years)?**

The major opportunities for transit in the area are centered on connections to future intercity services. The Charlotte – Atlanta high speed rail corridor could benefit the area. If such a service were operated, stakeholders suggest that a transit shuttle should connect the Greenwood area to a high speed rail station in Greenville. There may be some opportunity for additional general public service within the area, although support is limited.



- **What are the top challenges / potential barriers facing transit in your area - now, over the next five years, and long-term (10 to 20 years)?**

The primary barriers facing transit in the region are the lack of funding at the local level and the opposition from agencies to coordination of transit services. There has been some interest in transportation coordination in the region, but it has not happened. A formal study was conducted in 2001, but there was not enough consensus between agencies to allow implementation to move forward.

- **What is the level of local support for transit (financially, politically, and otherwise)?**

With the exception of Edgefield County, there is little local support for transit in the region at the present time. However, several counties suggest that they may support a limited transit program that operates similarly to the coordinated transportation services in the Lower Savannah region.

- **What should the role of transit be in your community in the next twenty years? How does transit fit into the region's vision for the future?**

Stakeholders indicate that transit is likely to have a limited role in the region in the future; however, there is some interest in exploring coordinated transit services like those provided in the Lower Savannah region.

- **What steps can be taken to help meet regional goals for transit?**

Stakeholders think that strides need to be made in coordinated transit. A combination of "carrots" and "sticks" will be required to make transit coordination happen. The Lower Savannah model for coordination may be an appropriate starting point.

- **What should the role of the State of South Carolina be in transit? Is the state doing enough? If not, what should it be doing? If yes, is it doing too much? What are examples of positives coming from State? What are areas in need of improvement?**

The Upper Savannah region's stakeholders provided numerous responses to these questions, indicating that they think that additional funding and technical assistance needs to be provided, and programmatic and legislative changes need to be made. The following specific comments were offered:

- SCDOT should support high speed rail service and demand-response transit service (particularly for the elderly population).
- The DOT's service has become much better since the reorganization and change in personnel.



- SCDOT has significantly increased its efforts to support the expansion of transit service.
- For well-established systems, the establishment of the role of the COGs as intermediaries to the DOT has complicated communications; however, the provision of regional transportation planning expertise is beneficial for less sophisticated agencies.
- Training could be improved.
- SCDOT should focus its efforts on seminars and other training in transportation / transit planning, to support the efforts of COG staff that is unfamiliar with these programs.
- The State should provide more financial assistance.

2.6 Summary

The Upper Savannah region has the least-developed transit network in the state, with the only general public services being operated in Edgefield County on a demand response basis. Demographically, the Upper Savannah is a prime area for the development of transit, with a relatively high proportion of elderly and low-income residents. However, as a rural region, transit is a low priority among local government officials and other stakeholders. Any transit services that would be provided would be geared to those with limited transportation options, as there is no impetus for any transit services designed for “choice” riders.

Efforts toward transit coordination have not taken root in the region, although there has been some interest in the success of the Lower Savannah region in promoting transit coordination. A renewed effort at transit coordination is a logical starting point if transit is to demonstrate to stakeholders that it is a needed investment.



Section 3: Transit Perceptions & Attitudes

As part of the Statewide Transit Plan, market research was conducted consisting of focus groups and statistically valid surveys for each of the state’s ten regions. The purpose of the market research was to obtain information about attitudes and perceptions of transit in the State as well as to identify areas for improvement.

3.1 Focus Groups

During September 2006, ETC Institute facilitated a total of 20 focus groups for the South Carolina Department of Transportation. The purpose of the focus groups was to gather input from residents and community leaders about public transportation issues.

Two focus groups (one with residents and one with community leaders) were conducted in each of the State’s 10 regions. For the Upper Savannah region, the focus groups were conducted in Greenwood. Elsewhere in the state, focus groups were conducted in Greenville, Columbia, Aiken, Rock Hill, Walterboro, Georgetown, North Charleston, Sumter, and Florence.

3.1.1 Who Should Be Served by Public Transportation

Participants were asked to identify the most important groups that public transportation in South Carolina should serve.

The five most important groups that community leaders and residents attending the Greenwood focus group thought public transportation should be designed to serve for the Upper Savannah region is listed below.

Upper Savannah

Among LEADERS

<u>Rank</u>	<u>Groups to Serve</u>
1.	Elderly/senior citizens
2.	Tourists
3.	Everyone
4.	Major employment centers
5.	Commuters

Among RESIDENTS

<u>Rank</u>	<u>Groups to Serve</u>
1.	Persons with disabilities
2.	Low income (those without cars)
3.	Commuters
4.	College students
5.	Those seeking entertainment/recreation opportunities

3.1.2 Preferred Funding Mechanisms for Public Transportation

Participants in each focus group were given time to brainstorm a list of possible funding sources for new or expanded public transportation services in South Carolina. The five sources of funding that were preferred most by residents and leaders in the Upper Savannah region are listed below.



Upper Savannah

Among LEADERS

<u>Rank</u>	<u>Funding Mechanisms</u>
1.	Federal grants
2.	Gas tax
3.	Energy tax
4.	Environmental credits
5.	Tobacco tax

Among RESIDENTS

<u>Rank</u>	<u>Funding Mechanisms</u>
1.	User fees
2.	Tolls
3.	Reallocation of DOT funds
4.	Business tax
5.	Vehicle registration fees

3.2 Statewide Survey Report

3.2.1 Purpose

ETC Institute conducted a statewide public transportation survey for the South Carolina Department of Transportation (SCDOT) during March of 2007. The purpose of the survey was to gather input from the state’s residents to help improve public transportation services in South Carolina.

3.2.2 Major Findings

This section provides the major findings provided by respondents from the Upper Savannah region.

Availability of Public Transportation (at the community level). Nine percent (9%) of respondents reported that public transportation services are currently available in their community. When asked to rate the overall availability of public transportation in the community where respondents live most (51%) gave a “poor” rating. More than one-third (38%) of respondents could not give a rating because they were not familiar with the services available in their community; 5% of respondents indicated that the availability of public transportation in their community was “average” and 6% either “excellent” or “good.”

Availability of Public Transportation (statewide). When asked to rate the overall availability of public transportation throughout the state of South Carolina most respondents (52%) indicated that they could not give a rating because they were not familiar with the services available. Six percent (6%) of respondents indicated that the availability of public transportation in South Carolina was either “excellent” or “good;” 15% indicated “average” and 27% “poor.”

Public Transportation Usage in South Carolina. Nineteen percent (19%) of respondents reported that they have used public transportation services in the state of South Carolina. More than three-fourths (80%) of respondents have not used public transportation services in South Carolina. The remaining one percent (1%) did not have an opinion.



Types of Groups Public Transportation Should Serve. When asked to choose the groups that public transportation should serve in the state of South Carolina most respondents selected persons without cars and low income individuals. The next most important group respondents felt public transportation should serve was seniors, followed by persons with disabilities, commuters, and students.

Types of Public Transportation Household Members Would Likely Use. Nearly half (49%) of respondents indicated that members of their household would be “very likely” or “likely” to use door-to-door shuttle service. Forty-six percent (46%) of respondents also indicated that members of their household would be “very likely” or “likely” to use commuter rail service. Other types of public transportation services household members would “very likely” or “likely” use include: intercity bus service (44%), park-and-ride service (41%), and bus service that operates on fixed routes (36%).

Public Transportation Priorities. More than ninety percent (93%) of respondents indicated that maintaining existing roads and highways were either “very important” or “important.” In addition, maintaining existing roads and highways was selected by fifty-nine percent (59%) of respondents as the most important transportation priority. Improving transportation services was the second most important transportation priority followed by adding capacity to existing roads and highways.

Public Transportation Funding. Fifty-eight percent (58%) of respondents indicated that they thought the level of funding for public transportation in South Carolina should increase over the next five years. Twenty-nine percent (29%) of respondents thought funding should stay the same, 5% thought it should be reduced and 8% did not have an opinion. See Figure 6.

In addition to the high percentage of acceptance for increasing public transportation funding over the next five years, respondents were also generally supportive of the three types of funding mechanisms discussed in the survey. For example, nearly two-thirds (62%) of respondents were either “very supportive” or “supportive” of the State government funding the expansion of public transportation services in South Carolina. High levels of support were also evident for utilizing user fees (49% of respondents were “very supportive” or “supportive”) and for local governments i.e. cities and counties (53% of respondents were “very supportive” or “supportive”) funding the expansion of public transportation services in South Carolina.

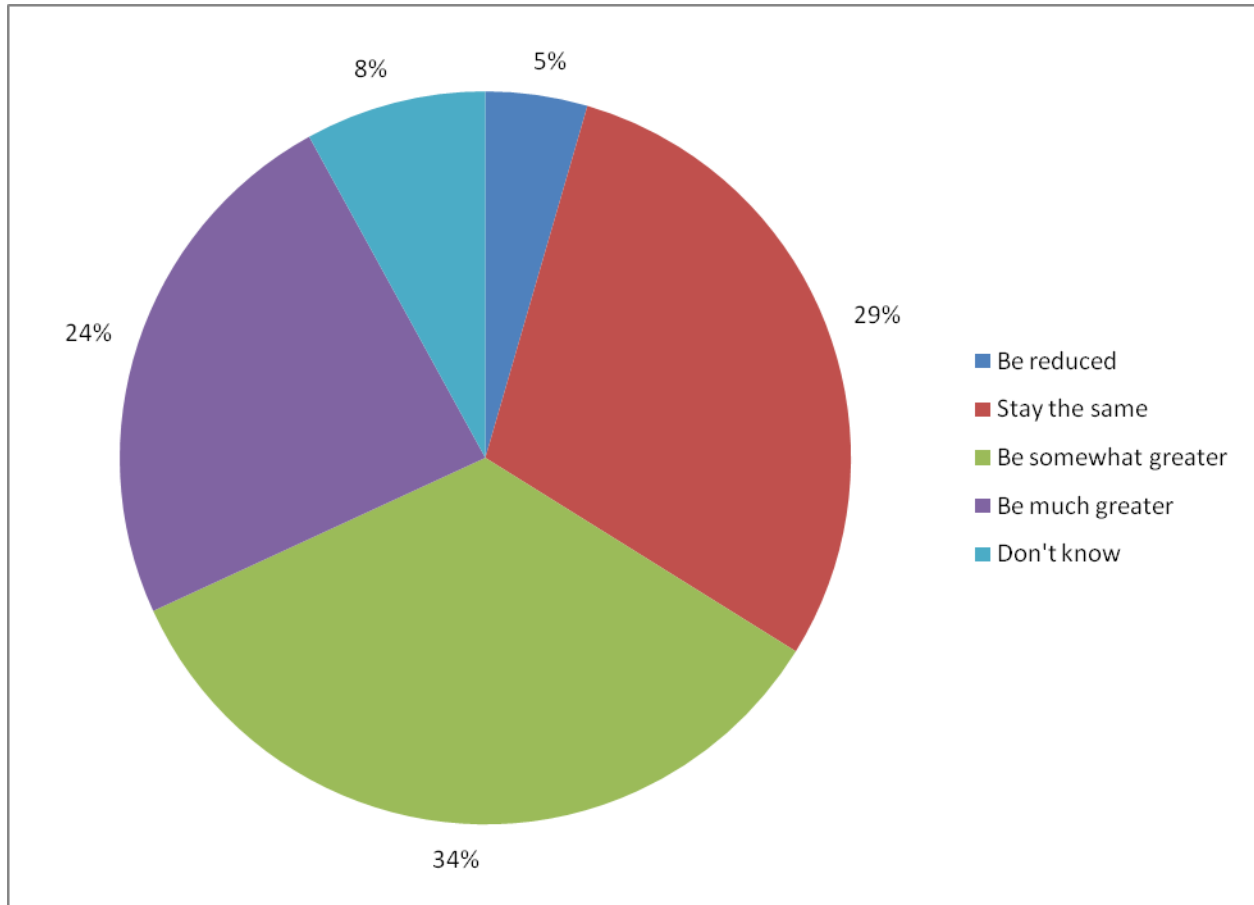
3.2.3 Other Findings

- **Increasing Usage.** Nearly half (42%) of the respondents reported that if buses are scheduled to arrive more frequently it would “very likely” or “likely” encourage them to begin using public transportation.



Figure 6: Respondents' Attitudes towards Funding Public Transportation

Question 11: How do you think the current level of funding for public transportation (e.g., bus, rail) in South Carolina should change over the next five years?



Source: ETC 2007

- **Locations Public Transportation Serve.** Only fourteen percent (14%) of respondents indicated that the locations public transportation serves are adequate.
- **Safety of Public Transportation.** Fifty-seven percent (57%) of respondents indicated that they thought public transportation is safe to use in the state of South Carolina.



Section 4: Vision for Transit in South Carolina

4.1 Purpose of Vision

The development of a statewide plan is much more than simply a compilation of regional plans. As part of the statewide plan, the regional differences in goals and visions were acknowledged, but emphasis was placed on the visions that are common to all regions in South Carolina. In addition, “statewide” goals were identified that are not related to specific regions. For example, a “statewide” goal could be to establish general public transit service in every county, which must occur before “seamless transportation” can be a reality. Other goals could relate to establishing new funding sources, improving the image of transit, developing a framework for additional coordination of services, and other common interests. A focus must be placed on common themes across the state that stakeholders can use as rallying points. Regional initiatives should reflect local needs as well as support the overall statewide vision. The following section is the resulting “vision” for the State of South Carolina that was developed as part of the study process.

4.2 Vision

Public Transit—Connecting Our Communities

Public transit, connecting people and places through multiple-passenger, land or water-based means, will contribute to the state’s continued economic growth through a dedicated and sound investment approach as a viable mobility option accessible to all South Carolina residents and visitors.

Economic Growth

- Recognize and promote public transit as a key component of economic development initiatives, such as linking workers to jobs, supporting tourism, and accommodating the growth of South Carolina as a retirement destination through public / private partnerships.
- Enhance the image of public transit through a comprehensive and continuing marketing / education program that illustrates the benefits of quality transit services.

Sound Investment Approach

- Ensure stewardship of public transit investments through a defined oversight program.
- Increase dedicated state public transit funding to \$35 million by 2030.
- Make public transit reasonable and affordable by encouraging more local investment and promoting coordinated land use / transportation planning at the local level.



- Utilize an incremental approach to new public transit investments that recognizes funding constraints and the need to maintain existing services.

Viability of Transit

- Provide quality, affordable public transit services using safe, clean, comfortable, reliable, and well-maintained vehicles.
- Increase statewide public transit ridership by 5 percent annually through 2030.
- Utilize different modes of public transit including bus, rail, vanpool / carpool, ferry, and other appropriate technologies, corresponding to the level of demand.

Accessibility to All

- Provide an appropriate level of public transit in all 46 South Carolina counties by 2020 that supports intermodal connectivity.
- Develop and implement a coordinated interagency human services transportation delivery network.



Section 5: Regional Transit Needs

In this section, an overview of five methods for estimating rural and urban transit demand are discussed and applied. “Need” is expressed for South Carolina’s COG regions. In the individual regional plans “needs” will be expressed at the county level.

5.0.1 Arkansas Public Transportation Needs Assessment (APTNA) Method

The APTNA method represents the proportional demand for transit service by applying trip rates to three population groups: the elderly, the disabled, and individuals living in poverty. The trip rates from the method are applied to population levels in a given community.

5.0.2 Mobility Gap Method

The Mobility Gap method measures the mobility difference between households with a vehicle(s) and households without a vehicle. The concept assumes that the difference in travel between the two groups is the demand for transit among households without a vehicle.

5.1 Methods Selection for South Carolina

Based upon the methodology selection criteria, the available data resources, and the timeframe and resources acceptable for conducting the demand estimate model, the Mobility Gap and APTNA methods tied and were recommended as the preferred methodologies for estimation of transit demand in the State of South Carolina. The data used for both methods is by and large realistically obtainable for the State of South Carolina. The method is also best suited for future State monitoring of transit demand.

5.2 Application of Methods

The APTNA and Mobility Gap methods rely on reliable demographic and traveler information. The demographic characteristics of specified incorporated areas were summed to derive the urban populations within all South Carolina counties and these urban areas were subtracted from the total county population to derive the rural population.

2000 Census Summary Files,

- SF1, Table P12: Sex by Age.
- SF3, Table PCT 26: Age by Types of Disability.
- SF3, PCT 34: Sex by Age by Disability Status by Poverty Status.
- SF3, Table P87: Poverty Status by Age.
- SF3, Table H45: Vehicle Availability.

The assumptions for population trends were for all population groups in this method. These figures came from the South Carolina Department of Transportation. The results of the following methods are discussed.



5.2.1 Arkansas Public Transportation Needs Assessment (APTNA) Method

The Arkansas Public Transportation Needs Assessment (APTNA) method represents the proportional transit demand of an area by applying trip rates to three key markets: individuals greater than 65 years old, individuals with disabilities above the poverty level under age 65, and individuals living in poverty under age 65. Table 7 shows the population groups.

Table 7: Rural & Urban Population Groups Used in APTNA Method

	Elderly (Over 65)			Disabled (Under 65)			Poverty (Under 65)		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Abbeville County	4,090	4,348	4,583	1,097	1,167	1,230	2,999	3,188	3,361
Edgefield County	2,919	3,328	3,684	1,176	1,341	1,484	3,195	3,642	4,033
Greenwood County	9,819	10,531	11,224	3,837	4,115	4,386	8,396	9,005	9,598
Laurens County	9,885	11,008	12,030	4,467	4,975	5,436	9,269	10,322	11,280
McCormick County	1,810	2,009	2,204	546	606	665	1,515	1,682	1,845
Saluda County	2,908	3,109	3,276	1,027	1,098	1,157	2,613	2,794	2,944
Upper Savannah COG	31,432	34,333	37,002	12,150	13,301	14,358	27,988	30,633	33,060

In the APTNA method, trip generation rates represent the resulting ridership if a high quality of service were provided. The trip rates for the APTNA method were calculated using the 2001 National Household Travel Survey (NHTS). The trip rates came from the South Region (Alabama, Arkansas, Delaware, Georgia, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Virginia and West Virginia excluding Florida, Kentucky, Maryland and Texas). Table 8 shows the sample size used for each population group.

Table 8: 2001 National Household Transportation Survey (APTNA) Data

	Rural			Urban		
	Household	Person	Day Trip	Household	Person	Day Trip
Disabled	343	381	2,787	127	139	1,209
Elderly	681	1,114	3,732	387	600	2,226
Poverty	197	518	1,485	86	227	778
Sample	1,221	2,013	8,004	600	966	4,213
Population	1,858	4,290	16,367	3,090	6,850	29,343

Source: Data by NHTS

The original APTNA trip rates were 8.4 for the population above 65 years of age, 3.0 for people from five to 65 years of age with disabilities above the poverty level, and 14.0 for people from five to 65 years of age below the poverty level. The NHTS gave trip rates of 5.8 (rural) and 6.2 (urban) for the population above 65 years of age, 12.3 (rural) and 12.2 (urban) for people from 5-65 with disabilities above the poverty level, and 13.8 (rural) and 11.8 (urban) for people below the poverty level.

To derive transit demand, the following equations are used:

$$D_{(Rural)} = 5.8(P_{65+}) + 12.3(P_{DIS<65}) + 13.8(P_{POV})$$

$$D_{(Urban)} = 6.2(P_{65+}) + 12.2(P_{DIS<65}) + 11.8(P_{POV})$$



Where, D is demand for one-way passenger trips per year,

P_{60+} is the population of individuals 65 years old and older,

$P_{DIS<60}$ is the population of individuals with disabilities under age 65, and

P_{POV} is the population of individuals under age 65 living in poverty.

After applying the trip rates for each population group, the population below 65 years of age and living in poverty is projected to have the highest ridership potentials for both rural and urban Upper Savannah counties. The second highest projected ridership levels come from the elderly population. The disabled population has the highest trip rate for rural and urban Upper Savannah, but the lowest population, thus giving this population group the least projected ridership potential, yet this population group may be the most reliant on transit.

Table 9 shows the daily and annual ridership projections. The daily transit trips are 1,967 for the year 2010 and 2,322 for 2030. The annual transit trips are projected to be 717,987 for 2010 and 847,435 for 2030.

Table 9: Estimated Annual & Daily Transit Demand: APTNA Method

	Annual			Daily		
	2010	2020	2030	2010	2020	2030
Abbeville County	78,613	83,563	88,083	215	229	241
Edgefield County	75,487	86,054	95,276	207	236	261
Greenwood County	220,008	235,966	251,490	603	646	689
Laurens County	240,185	267,481	292,307	658	733	801
McCormick County	38,127	42,310	46,425	104	116	127
Saluda County	65,567	70,090	73,853	180	192	202
Upper Savannah COG	717,987	785,464	847,435	1,967	2,152	2,322

5.2.2 Mobility Gap Method

The Mobility Gap method measures the difference in the household trip rate between households with vehicles available and households without vehicles available. Because households with vehicles travel more than households without vehicles, the difference in trip rates is the mobility gap. This method shows total demand for zero-vehicle household trips by a variety of modes including transit.

This method uses data that is easily obtainable, yet is stratified to address different groups of users: the elderly, the young, and those with and without vehicles. The data may be analyzed at the county level, and based upon the stratified user-groups; the method produces results applicable to the State and at a realistic level of detail.

The primary strength of this method is that it is based upon data that is easily available: household data and trip rate data for households with and without vehicles. Population and household data were obtained from 2000 U.S. Census. Table 10 shows the rural and urban households (by age group) in Upper Savannah without vehicles, based upon



Census information. For the purposes of this study, a household that is in the 15 and 64 years of age group has no one residing in the household who is over 65 years of age. A household in the over 65 years of age group has at least one person over the age of 65 living in that household (even if other members are less than 65 years of age).

Table 10: Households With No Vehicle Available: 2010 to 2030

	Households (15 to 64)			Households (Over 65)		
	2010	2020	2030	2010	2020	2030
Abbeville County	508	540	570	389	413	435
Edgefield County	497	567	627	298	340	376
Greenwood County	1,673	1,795	1,913	1,241	1,331	1,418
Laurens County	1,659	1,848	2,020	1,055	1,175	1,284
McCormick County	237	263	288	201	223	245
Saluda County	426	455	479	246	263	278
Upper Savannah COG	5,001	5,467	5,897	3,430	3,745	4,036

Rural and urban trip rate data were derived from the National Household Travel Survey (NHTS) at the South Region level to be consistent in the way the APTNA trip rates were derived. Table 11 shows the total sample size in the South Region for vehicles available.

Table 11: 2001 National Household Travel Survey Mobility Gap Data

	Rural			Urban		
	Household	Person	Day Trip	Household	Person	Day Trip
No Vehicle (15 to 64)	30	46	85	87	130	432
No Vehicle 65+	38	46	86	82	96	216
Vehicle (15 to 64)	1,423	2,743	9,255	2,340	4,370	16,830
Vehicle 65+	367	619	4,229	581	953	7,165
Total	1,858	3,454	13,655	3,090	5,549	24,643
Area Totals	1,858	4,290	16,367	3,090	6,850	29,343

Source: Data by NHTS

For the Mobility Gap method, the trip rates for households with vehicles serves as the target for those households without vehicles, and the “gap” (the difference in trip rates) is the amount of transit service needed to allow equal mobility between households with zero vehicles and households with one or more vehicles. The assumption of this method is that people without vehicles will travel as much as people who have vehicles, which is the transit demand. The basic equation used in the Mobility Gap method is:

Mobility Gap = Trip Rate _{HH w/Vehicle} – **Trip Rate** _{HH w/out Vehicle}

Where, “HH w/ Vehicle” represents households with one or more vehicles, and “HH w/out Vehicle” represents households without a vehicle.



Table 12 shows that for households with people age 65 and older, a rural mobility gap of 5.88 and an urban mobility gap of 7.40 person-trips per day per household exist between households with and without an automobile. For households with individuals between the age of 15 and 64, a rural mobility gap of 5.99 and an urban mobility gap of 0.74 person-trips per day per household exists between households with and without an automobile.

Table 12: Mobility Gap Calculations

	Vehicle Trip Rates				Mobility Gap	
	Rural		Urban		Rural	Urban
	None	One or More	None	One or More		
Age 15 to 64	4.09	10.09	7.62	8.36	5.99	0.74
Age 65 or Older	1.76	7.64	2.57	9.97	5.88	7.40

Source: Data by NHTS

Using this methodology, the number of transit trips needed to serve the demand is therefore equivalent to the mobility gap multiplied by the number of households without a vehicle and adjusted by the estimated share of those trips (63 percent) that could be met by transit. The 63 percent is based on Census Journey-to-Work mode share data for the state, which tells us that 0.63 percent of all work related trips for South Carolina are transit related (specifically bus or trolley). The mode share is then multiplied by a factor of 100 to obtain the 63 percent (100 percent service) used to estimate rural transit demand. The formula, therefore, is:

$$\text{Estimated Transit Demand} = (\text{Mobility Gap}) \times (\text{\#HH w/o Vehicle}) \times (\text{Unmet Need})$$

Using the Census 2000 household data (Table 10) and the appropriate Mobility Gap trip rate (Table 12), the estimated demand was calculated for each county in Upper Savannah. Table 13 shows daily demand for 2010, 2020 and 2030. Upper Savannah demand is 31,594, 34,525 and 37,226 person-trips per day respectively. Table 13 shows that the Mobility Gap method estimates Upper Savannah transit demand (based upon 365 days of service) at 11.5 million person-trips per year for 2010, 12.6 million for 2020 and 13.6 million for 2030.

Table 13: Estimated Annual & Daily Transit Demand: Mobility Gap

	Annual			Daily		
	2010	2020	2030	2010	2020	2030
Abbeville County	1,226,157	1,303,350	1,373,849	3,359	3,571	3,764
Edgefield County	1,088,023	1,240,338	1,373,261	2,981	3,398	3,762
Greenwood County	3,984,663	4,273,692	4,554,863	10,917	11,709	12,479
Laurens County	3,714,896	4,137,077	4,521,055	10,178	11,334	12,386
McCormick County	598,176	663,803	728,354	1,639	1,819	1,995
Saluda County	919,879	983,335	1,036,137	2,520	2,694	2,839
Upper Savannah COG	11,531,794	12,601,594	13,587,520	31,594	34,525	37,226



5.2.3 Comparison of Results

The transit demand results estimated by the two methods show a substantial difference in the range of transit service required in the Upper Savannah region. The APTNA method estimates annual transit demand at 717,987 person-trips per year for 2010 and 847,435 for 2030, while the Mobility Gap method estimates annual transit demand at 11.5 million person-trips per year for 2010 and 13.6 million for 2030. Both estimates, however, indicate that the current level of reported transit service provided in Upper Savannah (45,538 person-trips per year) falls short of the estimated transit demand. Based upon the APTNA estimate, Upper Savannah is currently providing transit service for 6.7 percent of the estimated demand.

Key differences exist between the two model’s assumptions. The APTNA Method was derived specifically for the estimation of transit demand, assuming a high-quality level of service is provided. Transit demand, as estimated by the APTNA method is based upon three population groups: the elderly, the disabled and those living in poverty.

Conversely, the Mobility Gap method estimates the additional trips that might be taken by households without a vehicle if an additional mode of transportation were provided, such as transit. The Mobility Gap method estimates transportation demand that could be served by transit. However, these trips might also be served by other modes. Therefore, the Mobility Gap method estimates an “ultimate” demand.

Since rural transit needs were more realistic, the APTNA method rural estimates were used. Table 14 shows the results of the adjustments made to Upper Savannah’s transit needs, which did not change from the APTNA method. The Adjusted Needs (Per Formula) estimate for 2005 shows that current level of reported transit service provided in this region still falls short. The rural needs being met remained the same at 6.7 percent.

Table 14: Estimated Annual & Daily Transit Demand: Adjusted Needs (Per Formula)

	Annual			Daily		
	2010	2020	2030	2010	2020	2030
Abbeville County	78,613	83,563	88,083	215	229	241
Edgefield County	75,487	86,054	95,276	207	236	261
Greenwood County	220,008	235,966	251,490	603	646	689
Laurens County	240,185	267,481	292,307	658	733	801
McCormick County	38,127	42,310	46,425	104	116	127
Saluda County	65,567	70,090	73,853	180	192	202
Upper Savannah COG	717,987	785,464	847,435	1,967	2,152	2,322

Table 15 summarizes the two methodologies’ results and primary assumptions and the adjusted method as well.



Table 15: Comparison of Results for Estimated Rural & Urban Transit Demand

Demand	APTNA Method			Mobility Gap Method			Adjusted Needs (Per Formula)		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Rural									
Daily	1,967	2,152	2,322	31,594	34,525	37,226	1,967	2,152	2,322
Annual	717,987	785,464	847,435	11,531,794	12,601,594	13,587,520	717,987	785,464	847,435
Data Sources	65 Years Old or Older Under 65 Years Old With A Disability Under 65 Years Old Living In Poverty			Individuals With A Vehicle Not Available Individuals With A Vehicle Available			Rural: APTNA (100%) & MG (0%)		
Quality	Trips If All Groups Were Served			Additional Trips Filled By Transit Service			Advantages of Both Methods		
Type of Demand	Elderly, Disabled & Poverty Demand			Persons Without Vehicles Demand			Percentage of Both Methods		

A comparison with the current level of transit service in Upper Savannah (45,538 person-trips per year) suggest that the APTNA and Adjusted Needs (Per Formula) method represents a realistic estimate for existing transit demand and the Mobility Gap method is a “high-end” goal for the region. To verify the legitimacy of the model’s estimated results for transit demand, a transit mode share analysis and a comparison of ridership statistics were performed.

5.3 Transit Demand Validation

Two techniques were used to help validate the results for calculating rural and urban transit demand. First, the transit demand estimates for the APTNA and Mobility Gap methods were compared with transit mode-splits for rural and urban Upper Savannah. Second, per capita ridership was compared with states deemed, respectively, as having well regarded rural transit programs and urban services.

5.3.1 Modal Split Analysis

The mode-split analysis compared the transit demand estimates with estimated regional annual transportation mode share for Upper Savannah for bus and trolleys. In this manner, the estimated demand for rural and urban transit (i.e. Upper Savannah’s estimated transit mode share for rural and urban areas) was compared with Upper Savannah’s total rural and urban travel patterns.

The first task was to estimate the State’s total rural and urban travel demand for all modes. The statewide travel demand for all transportation modes was estimated at 6.77 billion one-way person-trips per year. This estimate reflects travel for all individuals age 15 and older for *all modes* of travel in South Carolina. The estimate was based upon the trip rates produced from the 2001 Nationwide Household Travel Survey (NHTS) data for all South Carolina households.

Census 2000 estimates show that the rural Upper Savannah population consists of approximately 170,604 people age 15 and older and no urban population. Based upon the statewide annual travel estimate of 6.77 billion one-way person-trips per year and weighting by the total state rural and urban population, people in rural areas take approximately 8.87 trips per day, a reasonable estimate for the rural Upper Savannah average.



Table 16 compares the recommended range of estimated transit demand (for 2005) with the statewide travel demand estimate in annual person trips. As the table shows, the preliminary results of the rural APTNA method and the Mobility Gap method represent a mode split of 0.011 and 0.170 percent respectively. The Adjusted Needs method's rural mode split is the same as the APTNA's because no changes were made to rural transit estimates.

Table 16: Estimated Rural & Urban Transit Demand by State Total

	APTNA	Mobility Gap	Adjusted Needs	Means of Transportation
Rural Need	717,987	11,531,794	717,987	NA
South Carolina Person Trips	6,771,409,100	6,771,409,100	6,771,409,100	NA
Demand to Person Trips (Rural)	0.011%	0.170%	0.011%	0.013%

Various mode-split statistics for the State of South Carolina were used for comparison with the mode split ratios for transit demand and are shown in Table 16. A work trip mode-split from Census 2000 as well as an estimation of transit mode split for total rural and urban trips derived from the NHTS (Statewide) was calculated. The Census 2000 indicates that rural transit travelers in Upper Savannah make up 0.029% of total work trips in the rural parts of Upper Savannah. The NHTS analysis shows that rural travels make up 0.80 percent of total rural trips, while urban trips make up 0.56 percent.

For the work trip mode split, the Mobility Gap is significantly higher; the APTNA and Adjusted Needs are slightly lower. For the total trip mode split, the Adjusted Needs, APTNA and Mobility Gap are significantly lower.

This review of the mode split statistics suggests that the Adjusted Needs method is a more realistic approximation of Upper Savannah travel characteristics.

5.3.2 Recommended Demand Estimation Methodology

The Adjusted Needs method produces results more in line with current experience, and appears to be logical with both the modal split comparison provided in Table 16 and the comparison with model states provided in Table 15 of the Statewide Multimodal Plan. Therefore, it is recommended that the Adjusted Needs method be used for quantifying rural transit demand in the Upper Savannah Region.

5.4 Quantifying Transit Need

Based on the transit demand projections provided in section 5.3, this section analyzes the strategies to meet the current and future demand, and estimates the costs involved, including operating cost, vehicle expansion and replacement cost, and facility cost.

Operating cost is defined based on transit subsidy, or the cost of operating services less fare box revenue. The vehicle cost is defined in terms of numbers of vehicles purchased and the cost of each purchase. The facility cost is assumed to be related to



the number of vehicles an operator has, and whether the operator is an existing one or a newly started one.

All the cost calculations use year 2005 constant dollars.

5.4.1 Transit Need in the Region

For the purpose of estimating costs, a targeted level of transit need was required based on the predicted level of demand. Demand was forecasted using three methods described in Section 5.2: Mobility Gap method, Arkansas Public Transportation Needs Assessment (APTNA) method, and the Adjusted Needs (Per Formula) method. The Adjusted Needs method was selected as the targeted level of demand in cost calculation. This method is selected because it is somewhat in the mid-range of the other two methods and represents a significant increase in transit services in most of the counties compared with existing services. The Adjusted Needs estimate would seem to present an achievable goal in comparison with the much higher, upper limit of the transit demand predicted by the Mobility Gap method.

Based on the Adjusted Needs forecast, the total transit demand in 2005 was estimated at 677,000 one-way person trips. In the same year, 45,500 trips were provided. The average percentage of demand met is 7 percent. To meet the current transit need, 72,000 trips are needed among the existing rural transit systems and 605,000 trips are needed among the newly started transit systems.⁵ This is shown in Figure 7. The demand forecast shows that by 2030, the estimated transit demand will exceed 870,000 trips. Among those trips, 118,000 will be demand for the existing rural transit systems, and 752,000 trips will be demand for the newly started systems.

Figure 7: Existing Service & Transit Need

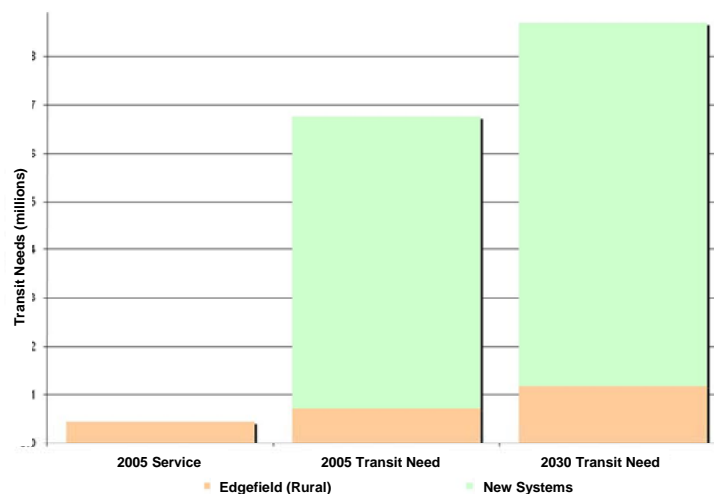


Table 17 shows the 2005 estimated and 2030 forecasted transit need for the rural portions of Upper Savannah. The existing service is based on data provided by SCDOT

⁵ For purpose of this report, transit need in counties with existing Section 5311 transit services is assigned to those existing systems within each county. This will not necessarily be the case during the development of service alternatives and solutions.



for FY 2005. The 2005 and 2030 transit needs are from the APTNA forecast. The 2005 unmet need is the difference between predicted transit need and the existing service. Using the data in the table, zero percent of Upper Savannah’s newly started needs and 64 percent of Edgefield County’s rural needs are being met.

Since the demand is forecasted on a county level, the distribution of the demand to each individual transit operator was based on the year 2005 SCDOT data reports. These reports give the information on the counties an operator serves and the current ridership.

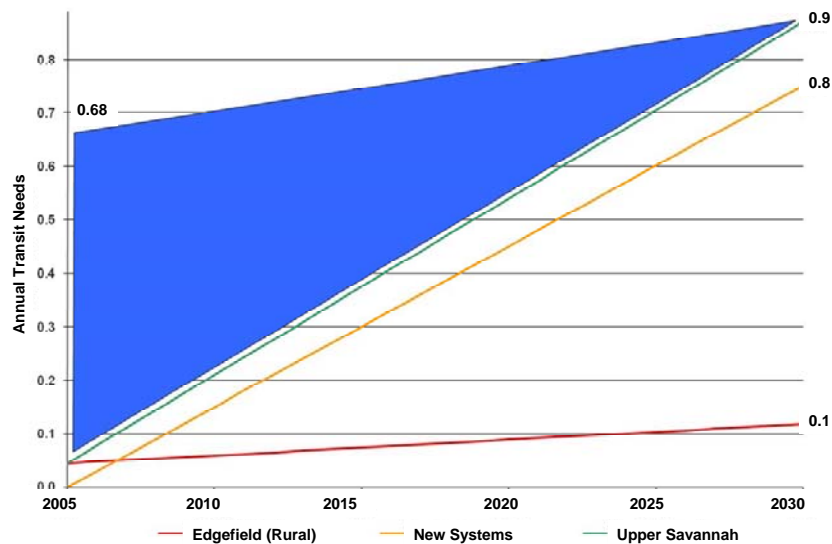
Table 17: 2005 and 2030 Transit Need

	2005 Service	2005 Transit Need	% of Need Met	2030 Transit Need
Edgefield (Rural)	45,538	71,557	64%	118,460
Abbeville County	0	74,760	0%	88,083
Greenwood County	0	210,646	0%	251,490
Laurens County	0	222,589	0%	292,307
McCormick County	0	34,657	0%	46,425
Saluda County	0	62,381	0%	73,853
New Systems	0	605,033	0%	752,158
Total USCOG	45,538	676,590	7%	870,619

(In One-Way Annual Passenger Trips)

To meet the unmet demand, our general assumption is that service will not decrease, even if demand goes down. For counties for which the current predicted demand is higher than the service provided, services gradually increase between years 2005 and 2030 until needs are met, as shown in Figure 8. This is accomplished by a uniform annual increase. To meet the goal, for the existing systems, overall, they should provide an equivalent of 33,000 additional one way person trips service annually; for the new systems, 30,000 annually.

Figure 8: Transit Need and Strategy to Meet: 2005 to 2030



5.4.2 Transit Net Operating Costs

For the existing systems, to meet all their demand in 2005, \$2.5 million in operating subsidies (operating costs minus fare revenue) are needed. Comparing to the current subsidy of \$186,000, \$2.3 million in additional subsidy is required. For the new systems, \$2.2 million in subsidy is required to meet all their 2005 demand. This is shown in Figure 9. It must be noted that this only gives the estimation to meet all the demand in 2005. In terms of implementation, not all the subsidy is required in place at the beginning, as discussed later.

In the year 2030, to meet all the demand, the predicted subsidy is \$3.1 million (\$400,000 for the existing rural transit systems and \$2.7 million for the new systems).

Figure 9: Estimate of Subsidy Needed for 2005

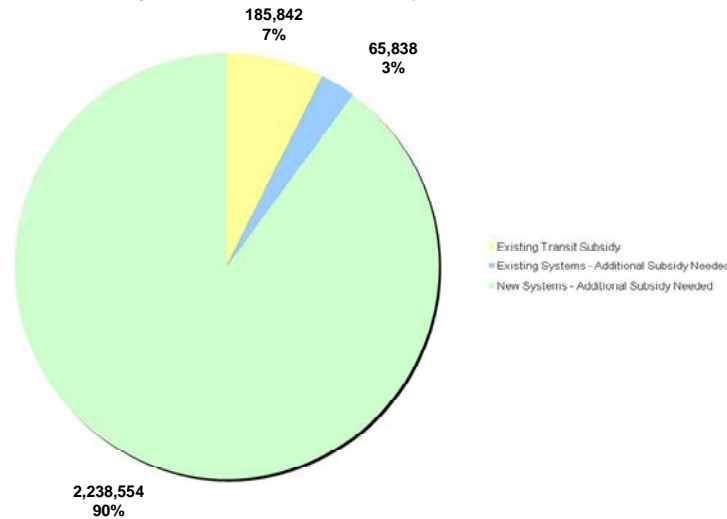


Table 18 shows the year 2005 estimated and year 2030 forecasted transit subsidy for the rural counties. The existing subsidy is estimated based on the data provided by SCDOT for FY 2005. The 2005 subsidy is based on the predicted transit need, and the unit subsidy per person-trip from the existing subsidy estimation. Similarly, 2030 subsidy is also calculated based on the unit subsidy and the predicted demand at that time.

Table 18: Transit Subsidy for 2005 & 2030

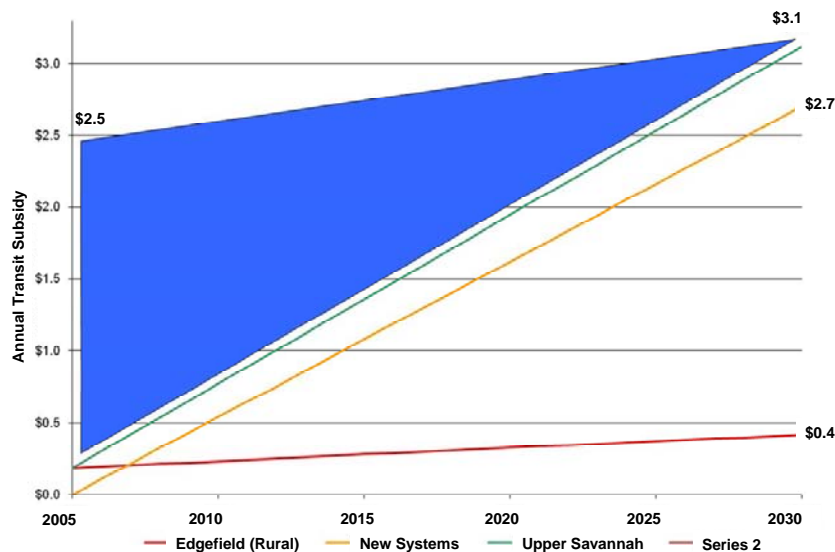
	2005 Existing	2005 Need	% of Need Met	2030 Need Subsidy
Edgefield County (Rural)	\$185,842	\$251,679	74%	\$417,594
Abbeville County	\$0	\$276,604	0%	\$316,403
Greenwood County	\$0	\$779,368	0%	\$903,384
Laurens County	\$0	\$823,552	0%	\$1,050,003
McCormick County	\$0	\$128,228	0%	\$166,763
Saluda County	\$0	\$230,802	0%	\$265,290
Total New Systems	\$0	\$2,238,554	0%	\$2,701,844
Total USCOG	\$185,842	\$2,490,234	7%	\$3,119,438

(Subsidy = Operating Cost – Farebox Revenue)



The total \$2.5 million in operating subsidy is estimated to meet all the 677,000 one-way trips for 2005, and \$3.1 million (in year 2005 dollars) is projected to meet all the 870,000 one-way trips to meet the expected 2030 transit need. However, as assumed, not all the demand is going to be met at the beginning. The actual subsidy required for 2008 (since 2005 is past, the unmet subsidy is distributed from 2005 through 2030, by a 25-year period) is \$540,000 (\$200,000 for existing rural systems and \$300,000 for new systems). Then the subsidy is increased by a uniform rise annually to reach the goal of meeting all the demand in the year 2030. In this case, the annual subsidy increase should be \$120,000 (\$10,000 for existing rural transit systems and \$110,000 for the new transit systems). Figure 10 shows how the transit need would be met by increasing subsidy gradually, consistent with the sound, incremental approach to transit investments expressed previously in the statewide Vision for Transit (Section 4.2).

Figure 10: Transit Subsidy & Strategy to Meet: 2005 to 2030



5.4.3 Capital Needs

This section examines major capital needs including vehicles and facilities.

5.4.3.1 Vehicle Needs

The following data and assumptions are used in vehicle estimation:

- The existing number of vehicles is based on data provided by SCDOT (FY 2005).
- Total vehicle requirement: based on transit demand forecast and vehicle production.
- A vehicle is added for every 15,300 new riders per year, which is based on the following assumptions:
 - Vehicle utilization is 5 riders per vehicle hour.⁶

⁶ Consistent with existing Section 5311 operations

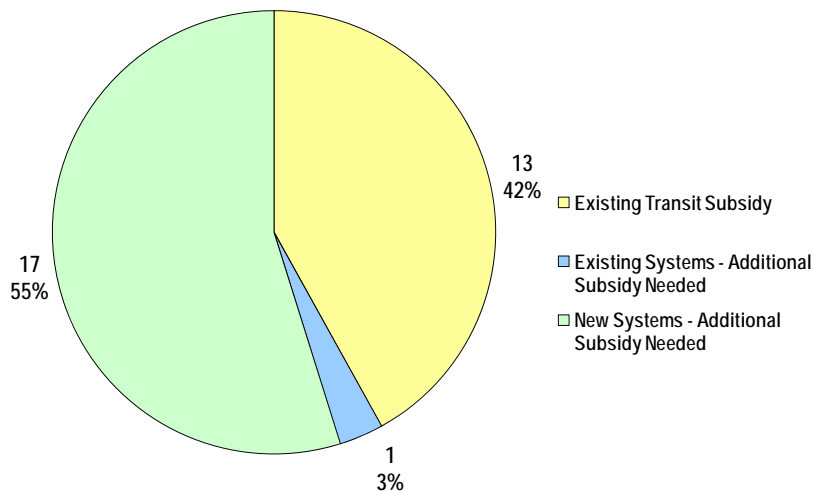


- Each vehicle operates 12 hours per day for 255 days per year.⁷
- Vehicles need to be replaced after 5 years in service.
- Between 2005 and 2030, the vehicle fleet size is increased as the level of transit service is increased. The fleet size is expanded at a rate that corresponds with the uniform annual demand increase according to the strategy to meet all the demand gradually from 2005 to 2030. This assumes that there will be no fleet size decrease over the 25-year period.
- The cost of each new vehicle purchase is assumed to be \$275,000 for Fixed Route vehicles, \$60,000 for Demand Response vehicles and \$30,000 for Human Resource vehicles and remain constant from 2005 to 2030.
- Vehicles are assumed to be body-on-chassis type with diesel engines.

Based on these assumptions, the overall vehicle needs for each year, the vehicles needed to be purchased and replaced, and the related costs were calculated and summarized as follows:

Through 2005, the existing service providers had 13 vehicles (all rural) in total. To meet all the predicted demand in 2008, about 31 vehicles will be needed. Since the strategy is not to meet all the demand at once, the actual vehicles required in 2008 will be about 31 vehicles (14 for existing rural systems and 17 for new systems). This equates to the number of vehicles needed to meet the level of 2008 need. The following Figure 11 shows the vehicle needs for 2008.

Figure 11: Vehicle Needs for 2008



The vehicles required to meet all the predicted need in 2030 will be 74 (18 for existing rural systems and 56 for new systems).

⁷ Or 3,060 vehicle hours annually



Table 19 shows the vehicle needs to meet the predicted 2030 transit demand, and the vehicles needed in 2008.

Table 19: Vehicle Needs for 2008 & 2030

	2005 Existing	Needed in 2008	% of Need Met	Needed in 2030
Edgefield County (Rural)	13	14	93%	18
Abbeville County	0	3	0%	7
Greenwood County	0	4	0%	18
Laurens County	0	4	0%	20
McCormick County	0	3	0%	5
Saluda County	0	3	0%	6
Total New Systems	0	17	0%	56
Total USCOG	13	31	42%	74

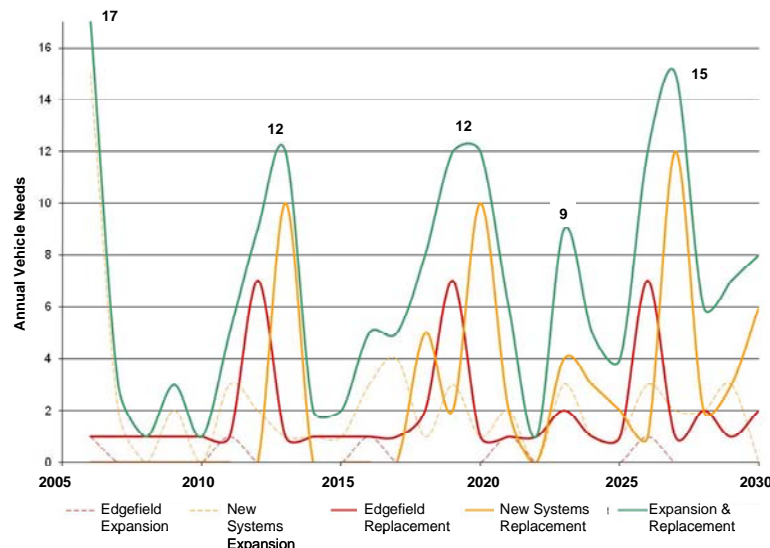
From 2005 to 2030, 61 vehicles should be purchased for fleet expansion, while 109 vehicles should be purchased for fleet replacement. This adds up to the total purchase of 170 vehicles. The purchases and related costs are shown in Table 20.

Table 20: Vehicle Needs & Cost Over 25 Years

Units	Fleet Expansion Vehicles	Fleet Replacement Vehicles	Total Purchased Vehicles	Total Cost Millions of Dollars
Edgefield (Rural)	5	47	52	\$4,695,000
Abbeville County	7	10	17	\$2,835,000
Greenwood County	18	16	34	\$6,375,000
Laurens County	20	18	38	\$7,260,000
McCormick County	5	9	14	\$2,010,000
Saluda County	6	9	15	\$2,285,000
Total New Starts	56	62	118	\$20,765,000
Total USCOG	61	109	170	\$25,460,000

Figure 12 shows the vehicle capital expenditures between 2005 and 2030.

Figure 12: Vehicle Capital Expenditures Over 25 Years



5.4.3.2 Facility Needs

This analysis assumes that facility expansion or construction will be needed between 2005 and 2030 for existing and newly started transit systems. The amount of facility expansion or construction is assumed to be proportional to the number of vehicles required by each system. The capital costs for facility expansion and construction were categorized as having different level of cost requirements. Expansion is for the existing systems while construction is for the new systems. An exception is that an existing system expanding by 41 or more vehicles would be calculated at the construction cost. Table 21 gives the approximate cost based on the above assumptions:

Table 21: Facility Needs Assumptions Based Upon Fleet Size

Fleet Size	Expansion System	New Systems
0	\$0	\$0
1-10	\$875,000	\$1,750,000
11-40	\$1,500,000	\$3,000,000
41-80	\$2,750,000	\$5,500,000
81-160	\$4,625,000	\$9,250,000
161-320	\$8,375,000	\$16,750,000
Over 321	\$15,875,000	\$31,750,000

Facility costs are assumed at about \$280 a square foot for new construction. This assumes masonry or similar construction material and includes design fees, contingencies, project management as well as an allowance for land purchase at about \$44,000 an acre. A cost of about \$42 a square foot for expansion has been assumed and includes space for parking and fueling vehicles. No expansion of maintenance bays are assumed except in the expansion of a fleet by 41 or more vehicles.

Table 22 summarizes the total vehicle costs and facility costs.

Table 22: Vehicle & Facility Capital Costs: 2005 to 2030

	Vehicle Purchases	Vehicle Cost	Facility Cost	Total Cost
Edgefield County (Rural)	52	\$4.7	\$2.8	\$7.4
Abbeville County	17	\$2.8	\$3.3	\$6.1
Greenwood County	34	\$6.4	\$3.3	\$9.6
Laurens County	38	\$7.3	\$3.3	\$10.5
McCormick County	14	\$2.0	\$3.3	\$5.3
Saluda County	15	\$2.3	\$3.3	\$5.5
Total New Systems	118	\$20.8	\$16.3	\$37.0
Total USCOG	170	\$25.5	\$19.0	\$44.5

(in millions)

5.4.4 Total Capital and Operating Costs

The total capital and operating costs is summarized below in Table 23.



Table 23: Total Capital & Operating Costs: 2005 to 2030

	Vehicle Purchases	Operating Costs	Vehicle Cost	Facility Cost	Total Cost
Edgefield County (Rural)	52	\$7.8	\$4.7	\$2.8	\$15.3
Abbeville County	17	\$4.1	\$2.8	\$3.3	\$10.2
Greenwood County	34	\$11.7	\$6.4	\$3.3	\$21.4
Laurens County	38	\$13.7	\$7.3	\$3.3	\$24.2
McCormick County	14	\$2.2	\$2.0	\$3.3	\$7.4
Saluda County	15	\$3.4	\$2.3	\$3.3	\$9.0
Total New Systems	118	\$35.1	\$20.8	\$16.3	\$72.1
Total USCOG	170	\$43.0	\$25.5	\$19.0	\$87.4

(in millions)

The Upper Savannah region is projected to have costs of up to 87.4 million dollars over the next 25 years. About 49 percent of this cost is attributed to operating costs, while about 29 percent of the costs are projected to come from vehicle costs and about 22 percent from facility costs.

5.5 Intercity / Interregional Transit Needs

For residents and visitors who have limited travel options, intercity bus will continue to provide an important mobility service. However, for intercity bus service to have an increased role in transportation in South Carolina, the service must be provided in a way to attract more people who could otherwise fly or drive. It is difficult for intercity bus to be time-competitive with air travel or driving directly between an origin and a destination, but budget-conscious travelers may be more receptive to bus service if it is provided at a deeply-discounted fare. The “no frills” business model being used by Megabus.com and other similar providers is attempting to use low fares to attract customers who would otherwise fly or drive, but the long-term sustainability of this operation remains unproven.

As part of the focus group sessions conducted for this planning process, several community leaders and members of the general public made comments regarding the need for more public transportation options between cities or across state lines. Although the need for improved intercity transportation was recognized in the focus group sessions, there was a greater emphasis on local and regional (commute-oriented) transit needs. The same thought process was also reflected in the stakeholder interviews with regional planners and transit officials, in which most of the comments received addressed regional transit needs as opposed to intercity concerns.

Intercity rail transportation, particularly high speed rail service, has a greater potential than intercity bus to significantly impact how South Carolina residents and visitors travel between cities in the future, due to the reduced travel times, level of comfort, and direct service. Several attempts have been made in the State to use intercity bus service to connect residents to Amtrak service (such as the former Amtrak “Thruway” bus connection between Florence and Columbia that was operated by the Pee Dee Regional Transportation Authority). Although this type of service was previously unsuccessful due largely to the unreliability of Amtrak, using intercity bus service to



connect patrons to high speed rail service could serve to extend the reach of the high speed rail corridor. This type of connection should be considered in future high speed rail planning. This could be a very successful service model to connect the Upper Savannah Region area to high speed rail along the I-85 corridor.

Several public transit agencies in the State offer what can be described as “intercity bus service”, designed to connect inland communities to employment opportunities in coastal resort areas like Myrtle Beach (with trips traveling distances of 50-100 miles or more one-way). Because these trips are daily, commute-oriented trips, they are not specifically included in this “intercity bus” assessment. However, this travel pattern reflects one of the unique transit issues in South Carolina, and considering the rapid growth rate of coastal areas along with high unemployment rates in inland counties, this long-distance transit connection will likely grow in importance over the coming years. Therefore, providing enhancements in these long-distance commuter connections is identified as a focus area for intercity-type travel.

The State of South Carolina currently provides no subsidies for intercity bus service, but these needs should be considered in the future, especially if additional service cuts are made to current operations. If necessary, state investment in intercity bus service should be considered to maintain key connections across the State. Current State funding sources are used by public transit agencies to support the intercity commute-oriented services to jobs along the coast, but additional support for these services may be needed in the future. Additionally, as high speed rail services are developed, the State should examine its role in not only the rail operation, but any connecting bus service as well.

5.5.1 Intercity High Speed and Passenger Rail Assessment

Although there is not, as yet, a funded national program for the actual construction of high speed rail passenger corridors, the United States Department of Transportation (USDOT) has designated a network of corridors for the development of high speed rail service in this country. These corridors are generally focused on regional trips that could be competitive with commercial air service from a schedule standpoint. To date, only small amounts of Federal funding have been provided, adequate only for studies. South Carolina is a member of the Southeast High Speed Rail Coalition, along with its neighbors, North Carolina, Georgia, Florida and Virginia. Two corridors that pass through South Carolina have been adopted as part of the Southeast High Speed Rail Coalition plan. These corridors were added to the Southeast Corridor network designated by the USDOT as future high speed rail passenger routes on December 1, 1998.

Connecting services between regional activity centers and HSR Stations in the Greenville-Spartanburg-Anderson areas via rail or bus would be very important for access to and from the Upper Savannah Region.



5.6 Critical and Potential Transit Corridors

In addition to the needs-based assessment of transit demand, potential for commuter-based transit and other services designed to attract choice riders was also analyzed across the State. Developed in conjunction with the development of the Strategic Corridor System, there were two corridors in the Upper Savannah Region identified as having transit supportive characteristics. Beyond the scope of this plan, more detailed transit propensity analyses in congested corridors must be performed as part of the Advanced Planning Project Report (APPR) phase of project development, in adherence to the requirements of Section 57-1-370 of the Code of Laws of South Carolina.

The purpose of this section is to evaluate potential transit technologies for consideration in the South Carolina Multimodal Transportation Plan, and to identify those that may be most suitable for potential transit applications. A map of these corridors is depicted in Figure 13 at the end of the section.

5.6.1 Potential Transit Technologies

Five transit technologies were identified for evaluation as potential corridor application options. The technologies analyzed include:

1. Local Bus;
2. Express Bus;
3. Enhanced Bus / Intelligent Transportation Systems (ITS);
4. Bus Rapid Transit (BRT); and
5. Commuter Rail

Local Bus

Local bus service represents the most common and most flexible type of public transportation and is commonly referred to as fixed route as service operates along a defined route and on a pre determined schedule. Service can be provided with vans, small buses, traditional transit buses including low floor configuration, or articulated buses. Stops are typically as placed as frequent as every one to two blocks, or every one-eighth mile. When operated within a smaller area, local service may be called circulator, feeder, neighborhood, trolley, or shuttle service. Complementary paratransit service for eligible persons with disabilities who cannot access or use the local service must be provided as required under the Americans with Disabilities Act of 1990.

Express Bus

Express bus service provides direct point-to-point service over longer service routes utilizing high-occupancy vehicles. Buses are usually equipped with high-back seats, reading lamps, and other passenger amenities. Service typically operates between central business districts and suburban areas, primarily on weekdays, and during peak hours, however limited midday trips are not uncommon. Suburban terminals may include customer parking and covered waiting areas.



Enhanced Bus/ITS

Enhanced bus service uses low-floor, low or zero-emission buses with Intelligent Transportation Systems technology such as traffic signal priority and coordination along the entire alignment and on board customer information displays. Enhanced bus service typically operates in mixed-flow traffic along major arterial streets except in congested segments where peak period transit lanes or “queue jump” lanes may be provided. Queue jump lanes allow buses to bypass traffic queues at major intersections and advance more quickly through traffic signals. Bus pull off areas and bus stop passenger amenities may also be included.

Bus Rapid Transit (BRT)

Bus Rapid Transit uses a number of features to reduce delays and improve customer convenience. BRT systems typically use dedicated busways or bus lanes, although they can also operate in HOV lanes, dedicated guideway facilities, or in mixed traffic on arterial streets with various ITS applications including traffic signal priority. Other features can include improved passenger waiting areas, high-capacity/low-floor buses; fare collection prior to boarding; and advanced customer information systems. BRT systems can improve passenger convenience by using the same vehicle for the collection/distribution portion of the trip and for the faster line-haul portion of the trip; reducing the number of required transfers is a major advantage of BRT systems.



Busways which provide a high level of service and allow high hourly passenger capacities are typically grade separated from cross streets, and have on-line stations with spacing comparable to light rail. Low volume busways often are characterized by at-grade intersections with cross streets. Buses may operate non-stop along the busway/bus lanes or make selected stops based on passenger demand. Buses may also exit the specially designated busway and operate along streets to provide local area circulation and distribution. BRT is considered a viable option for upgrading bus service performance.

Commuter Rail

Commuter rail is a mode of passenger transportation using vehicles with steel wheels on steel rails using tracks that are part of a general rail network. The name "commuter rail" covers a multitude of rail system elements to carry passengers. Service typically operates between a central city terminal and outlying suburbs and trains can be diesel powered or use electric-powered rail cars. Commuter rail services may share track with railroad freight trains, or have separate tracks. Some commuter lines are primarily used for peak hour work trips while others have extended off-peak and weekend services.



Commuter trains can vary in length from one car to 14, but are generally limited to the length of the platforms at the stations. Some systems use locomotives for power and others have self-propelled cars.

5.6.2 Corridor Evaluation Criteria

Technology Compatible with Existing Development

The corridors being considered for transit options vary widely in regards to existing development and adjacent land uses. The transit technologies described above can be strategically employed to alleviate congestion, provide mobility options, and/or enhance existing roadway capacities. The attributes of the transit technology should be consistent with the existing characteristics of the corridor. This criterion is qualitative and ratings were determined by assigning the most reasonable score based on existing development characteristics and staff knowledge of the area.

<u>Scoring Method:</u>
<i>Appropriate: +1</i>
<i>Somewhat Appropriate: 0</i>
<i>Not Appropriate: -1</i>

Technology Compatible with Level of Service Needs

This criterion examines the future level of service needs for the corridor. The 2030 Average Daily Traffic (ADT) figures were utilized by assuming a ten percent transit mode split. Lower ADT scores in a corridor were assumed to indicate the need for lower capacity transit options, such as local bus, and higher scores indicating the need for higher capacity options, such as BRT or commuter rail. Note: Along highways with multiple segments, the highest ADT along that roadway was used.

<u>Scoring Method:</u>	
<i>ADT less than 2000 then Local Bus Assigned Score: 1</i>	<i>Other Modes: -1</i>
<i>ADT 2000-5000 then Local, Enhanced & Express Bus Assigned Score: 1</i>	<i>Other Modes: -1</i>
<i>ADT greater than 5000 then BRT & Commuter Rail Assigned Score: 1</i>	<i>Other Modes: -1</i>

Technology Compatible with Roadway Improvement Plans

This criterion evaluates the technology as compared against the Statewide Multimodal Transportation Plan. The technologies were assessed for various roadway improvement categories including capacity, Intelligent Transportation Systems (ITS), operations (e.g. signal timing), and access management. If the roadway type improvement has potential for promoting the technology, then the technology was considered compatible and assigned a rating of +1. It is important to note that the proposed roadway improvements were not considered to have potential to promote commuter rail. For this reason, commuter rail was assigned a score of 0 to represent its lack of compatibility to this criterion.



Scoring Method	Roadway Improvement			
	Capacity	ITS	Operations	Access Mgmt.
Technology				
Local Bus	1	1	1	1
Express Bus	1	0	0	1
Enhanced Bus	0	1	1	0
BRT	1	0	0	0
Commuter Rail	0 or 1	0	0	0

Railroad Right-of Way Adjacent to the Corridor

This criterion considers the advantage of existing exclusive rail right of way for Commuter Rail. For the technologies other than Commuter Rail, the score is 0.

Scoring Method:

Available or Planned: +1

Available or planned along a Portion of the Corridor: 0

Not Available: -1

Technology Compatible with Existing Plans

It is important for the candidate transit technology to be compatible with the existing local, regional, and statewide plans. For this criterion, the Long Range Transportation Plan was utilized, as well as mode specific plans from relevant transit authorities and Metropolitan Planning Organizations (MPOs).

Scoring Method:

Compatible: +1

Somewhat Compatible: 0

Not Compatible: -1

Roadway Parallel to the Corridor

This criterion considers the advantage of existing/planned roadways parallel to the corridor.

Scoring Method:

Available or planned roadway/HOV: +1

Available or planned along a Portion of the Corridor: 0

Not Available or Planned: -1

5.6.3 Upper Savannah Region

The Upper Savannah Region contains no Critical Corridor segments based on current and projected traffic congestion levels.



5.6.4 Other Potential Transit Corridors

Not all corridors have either current or projected issues with critical traffic congestion. However, many of these corridors can benefit from future enhancements to coordinated public transportation, and/or new transit services. The methodology detailed in the preceding section is applied to an additional set of segments located within the Mid-Carolina and Mountains to the Sea corridors. Among non-critical corridors, these were identified to pose the greatest potential for transit.

Anderson-Greenwood-Saluda
 Corridor(s): Mountains to the Sea
 Region(s): Appalachian, Upper Savannah

Appalachian, Upper Savannah and Central Midlands
 Mountains to the Sea
 Anderson to Greenwood to Saluda to Columbia

Guideline	LOCAL BUS	EXPRESS BUS	ENHANCED BUS/ITS	BUS RAPID TRANSIT	COMMUTER RAIL
Technology compatible with existing development	Compatible	Compatible	Somewhat Compatible	Incompatible	Incompatible
<i>Rating</i>	1	1	0	-1	-1
Technology compatible Level of Service needs	Compatible	Incompatible	Incompatible	Incompatible	Incompatible
<i>Rating</i>	1	-1	-1	-1	-1
Technology compatible with roadway improvements	Somewhat Compatible	Somewhat Compatible	Somewhat Compatible	Somewhat Compatible	Somewhat Compatible
<i>Rating</i>	0	0	0	0	0
Railroad right of way adjacent to the corridor	Partially Adjacent	Partially Adjacent	Partially Adjacent	Partially Adjacent	Not Adjacent
<i>Rating</i>	0	0	0	0	-1
Technology compatible with existing plans	Somewhat Compatible	Somewhat Compatible	Somewhat Compatible	Somewhat Compatible	Somewhat Compatible
<i>Rating</i>	0	0	0	0	0
Parallel roadway/facility	Partially	Not Present	Not Present	Partially	Partially
<i>Rating</i>	0	-1	-1	0	0
Overall Rating	2	-1	-2	-2	-3
Carry Forward?	Yes	Yes	No	No	No

Rating scale: Desirable/Positive Rating = +1
 Neutral Rating = 0
 Negative Rating/Less Desirable = -1

Local bus service performed highest among all evaluated modes. The sub-corridor includes the suburban/rural area of southeast Anderson County, extending through the rural centers of Greenwood and Saluda. Transit services within this corridor include Electric City Transit services in the City of Anderson as well as the Greenwood Connection express route operated by the Edgefield County Senior Citizens Council (ECSCC) between Greenwood, Edgefield, and Johnston.

Potential transit needs include expanded rural fixed-route and demand-responsive services in the Appalachian and Upper Savannah regions, and commuter express routes between Anderson and Greenwood, and from Saluda to Batesburg-Lewisville (with connecting routes to Columbia).



Traffic signal priority technology can be applied to potential points of peak-period congestion near interstates and at the intersections of strategic corridors included in the Statewide Multimodal Transportation Plan.

Saluda-Batesburg-Leesville-Columbia
 Corridor(s): Mid-Carolina
 Region(s): Central Midlands

Region Central Midlands
 Corridor Mid-Carolina
 Sub Corridor Batesburg/Leesville (Saluda County) to Columbia

Guideline	LOCAL BUS	EXPRESS BUS	ENHANCED BUS/ITS	BUS RAPID TRANSIT	COMMUTER RAIL
Technology compatible with existing development	Compatible	Compatible	Compatible	Incompatible	Incompatible
<i>Rating</i>	1	1	1	-1	-1
Technology compatible Level of Service needs	Incompatible	Incompatible	Incompatible	Compatible	Compatible
<i>Rating</i>	-1	-1	-1	1	1
Technology compatible with roadway improvements	Compatible	Compatible	Somewhat Compatible	Somewhat Compatible	Somewhat Compatible
<i>Rating</i>	1	1	0	0	0
Railroad right of way adjacent to the corridor	Partially Adjacent	Partially Adjacent	Partially Adjacent	Partially Adjacent	Partially Adjacent
<i>Rating</i>	0	0	0	0	0
Technology compatible with existing plans	Somewhat Compatible	Compatible	Somewhat Compatible	Compatible	Compatible
<i>Rating</i>	0	1	0	1	1
Parallel roadway/facility	Partially	Not Present	Not Present	Partially	Partially
<i>Rating</i>	0	-1	-1	0	0
Overall Rating	1	1	-1	1	1
Carry Forward?	Yes	Yes	No	Yes	Yes

Rating scale: Desirable/Positive Rating = +1
 Neutral Rating = 0
 Negative Rating/Less Desirable = -1

Local bus, express bus, bus rapid transit (BRT) and commuter rail performed highest among evaluated modes. The sub-corridor extends east from a suburban/rural area between Batesburg-Leesville and Lake Murray, including the rural city of Saluda and the suburban city of Lexington, to the moderately dense suburban city of West Columbia. Roadway improvements recommended in the Statewide Multimodal Transportation Plan include access control strategies along US 378 (Sunset Boulevard) that maintain existing facility capacity, and facilities supporting bicycle and pedestrian travel. Fixed-route transit services by the Central Midlands Regional Transit Authority (CMRTA) currently do not extend west of the West Columbia area.

Strategic growth in land use mix and population and employment densities along this corridor should precede future consideration of commuter rail transportation along the nearby rail corridor between Batesburg/Leesville and Columbia. This rail corridor was one of three corridors analyzed as part of the Central Midlands Commuter Rail Feasibility Study. More concentrated growth patterns and dedicated right-of-way may also improve the future feasibility for BRT service along this sub-corridor, particularly to downtown Columbia, which is situated east of this sub-corridor.

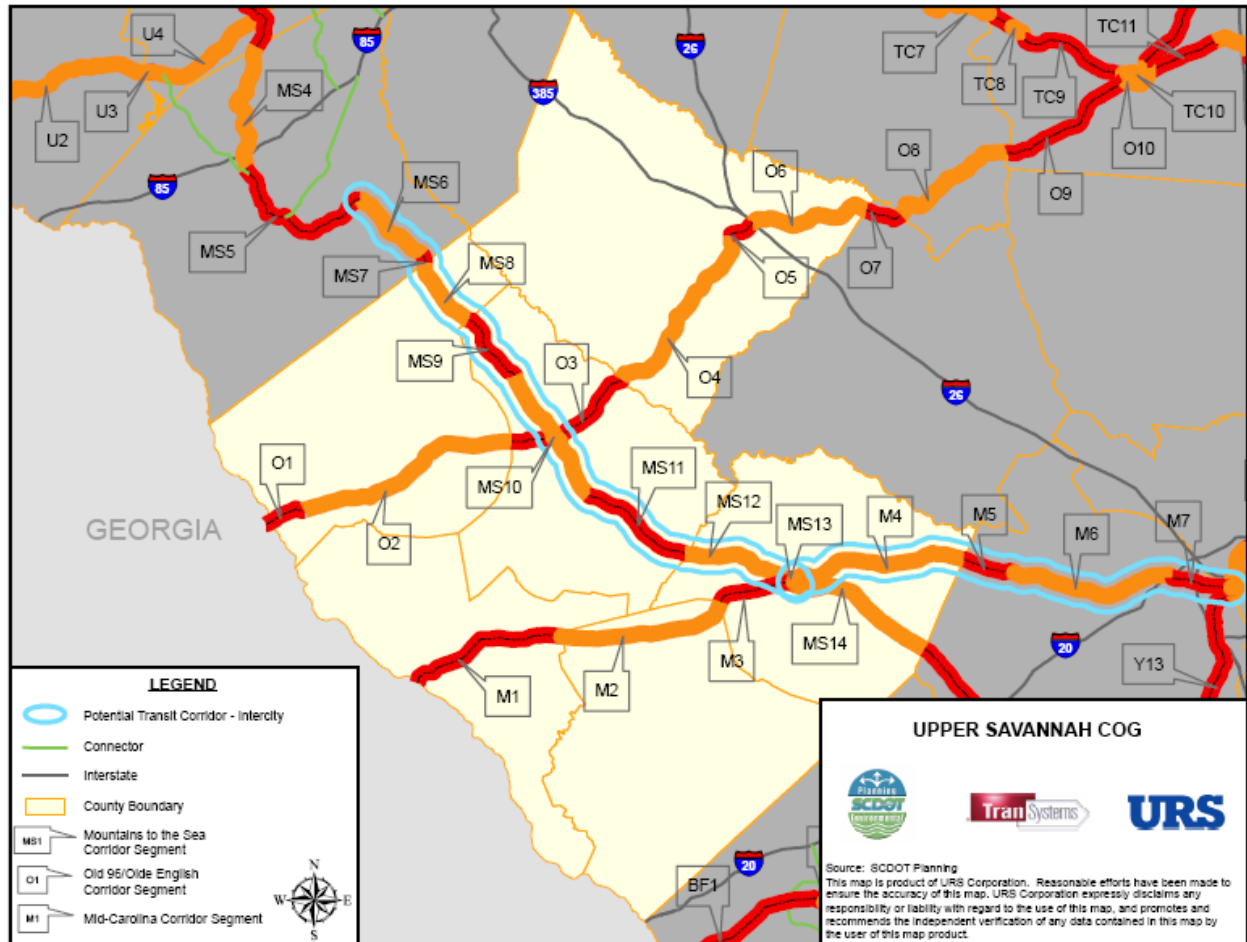
Signal priority technology can be applied to potential points of peak-period congestion



near interstates and at the intersections of strategic corridors in the Statewide Multimodal Transportation Plan.

Figure 13 presents potential transit opportunities along the Strategic Corridor System within the Upper Savannah region. Transit opportunities beyond the Strategic Corridor System are detailed at a regional level under separate cover from this plan.

Figure 13: Potential Transit Opportunities



Section 6: Transit Funding Needs

6.1 Discussion of Funding Issues for the Upper Savannah Region

Along with the assessment of current and future transit needs, the other major component of illustrating future conditions is the identification of funding needs to support operating and capital expenses. Transit will become an increasingly viable mobility option as population and employment in both the Upper Savannah Region and the State grows. Higher funding commitment levels from municipal governments in this region may be necessary to support mobility needs both internally, similar to the Greenwood Connector service provided by the ECSCC, as well as connections to major commuter sheds outside of the Region, such as Anderson County and the suburban Columbia area.

According to the needs analysis, the region will require over \$3 million in annual operating costs, which constitutes an increase significantly higher than the amount of local funding being generated today.

As evident in the focus group responses (Section 3.1.2), views between area leaders and other residents regarding preferable funding sources varied greatly. User fees were the most-cited funding mechanism among surveyed residents. While user contributions fully supporting any public service is ideal, excessive reliance on this source for transit can result in increased fares, reduced ridership and severe cuts in service, and hampers the ability of the system to expand. As the benefits of transit extend beyond the mobility improvements of its users, alternative and reliable funding sources must supplement user revenue.

Federal grants were the most cited funding mechanisms among the Region's community leaders. Beyond formula funding provided through the federal government, discretionary grants can be perennially sought and typically support capital projects, but can be less reliable as a source to support routine operating expenses. Higher scrutiny of the discretionary earmark grant process as well as the current lack of indexing for motor fuel taxes to inflation hinders the likelihood of reliably increasing returns from grants at the federal level.

6.2 New Funding Sources

An extensive list of potential funding sources is described in Section 6 of the Statewide Transit Plan. Since most of the future service needs in the Upper Savannah Region are more human service and rural transportation related, there does not seem to be a need for a dedicated funding mechanism in the Region for the foreseeable future. However, the introduction of new service and continued expansion of existing service will require the financial participation of county and municipal governments, if they are going to be sustainable.



Section 7: Action Plans

Transit in South Carolina, in its current form, generates numerous benefits for its residents and visitors as well as to its economic health and quality of life. Transportation providers in the State form a comprehensive system despite weak funding streams and non-conducive land use patterns. It is not without its gaps and issues, but public transportation in South Carolina is comprised of a comprehensive network of rural services, human service transportation programs and several urban systems that could be poised for growth. The information and analysis within this Plan indicates, however, that there is considerable unmet demand in the State, given the prospect of continual growth in population, especially in transit dependent sectors of the population. There is also a need for more connectivity, opportunities for improved efficiencies, greater emphasis on commuter transportation and a substantial need for increases in the overall funding for transit.

The unmet needs in the Upper Savannah Region center on the introduction of new services. For this reason, many of the action items included in the statewide plan apply to the Upper Savannah Region.

7.1 Close the Gap between Funding Needs and Available Funding Levels

As identified in Section 6, two significant findings in the Statewide Transit Plan are the gap of about \$60 million between the current level of transit service and estimated annual transit needs in the State, and the shortfall in revenue exceeding \$1 billion over the course of the Plan (2007-2030). These are substantial investment shortfalls in transit and require a broad spectrum of strategies to increase the level of funding from existing sources and identifying new sources so that more of the needs are met. These strategies need to be aggressive, offer transit providers flexibility and should be sustainable in order to facilitate bonding capacity and other long range financing techniques.

Several federal programs design to fund rural transit targeting the elderly, low income and disabled populations are not being utilized by several of the counties in the Region. New services should be implemented with the assistance of SCDOT and support from county and municipal governments.

7.1.1 Improve Efforts to Leverage Federal Dollars

First and foremost, greater financial participation at both the State and local government level is critical to the success of transit as a mobility solution. South Carolina ranks a distant fourth among Southeastern States (VA, NC, TN, GA, MS, AL) in terms of state contribution per capita for transit service and only Charleston has a semi-permanent local funding mechanism directly targeting transit improvements. Many of the transit systems in South Carolina struggle on an annual basis to generate the matching funds



for federal formula dollars. There has been little instance of returning federal formula dollars back to FTA, however, so systems are generally achieving the required matching requirements in spite of their struggles. But it raises the question of how many federal *discretionary* dollars could the State have collected if more flexibility and capacity to match federal funds were afforded the State's transit systems.

The number of discretionary programs actually declined after SAFETEA-LU but FTA and other US DOT programs are available to fund transit initiatives and require 20-50% non-federal match. SAFETEA-LU has also included new provisions under Section 5310, 5316 and 5317 which allow the use of non-FTA federal dollars to match funds under these programs. These are generally small sums of funding but target transportation disadvantaged populations.

7.1.2 Increase State Funding for Transit

State funding support for public transit should be increased to expand service and provide increased mobility and travel choices. As is the case with local funding mechanisms, legislation has restricted the use of State motor fuel user fee receipts for transit to $\frac{1}{4}$ of a cent out of 16.8 cents per gallon. This translates to about \$6 million per year for transit programs. This fee is based purely on the level of fuel consumption, and is not indexed to inflation. Therefore, if consumption remains flat, the proceeds from this user fee will also experience little variation from the 18 cents per capita made available for transit funding. In addition to increasing the percentage of the user fee dedicated to transit, the State will need to explore methods to provide incremental increases to account for inflation.

7.1.3 Engage Non-Traditional Partners

Transit's role in economic development and supporting tourism is on the rise and transit providers and the state transit association have taken a more visible approach to engaging chambers and economic development agencies in the planning process. A number of transit systems especially those just inland depend heavily on routes that serve the coast and transport many workers to and from jobs on the Strand, as well as other coastal areas. The ridership on these routes has steadily increased in the recent past and the trend should continue. Critical to the expansion of transit as well as the introduction of premium service transit, like bus rapid transit and rail service, will be how well the transit community engages the tourism and development communities into the design of service and ultimately the funding of new service. Transit providers should redouble their efforts to approach the business community and tourism industry for their support of transit.

Regional mobility providers can expand partnerships with private employers, non-profit organizations and government agencies to promote the federally-sponsored tax-free commuter benefits program. Often called "Commuter Choice," the program is authorized under Section 132 in the Internal Revenue Code, Title 26 of the United



States Code, and currently allows employers to pay for their employees to commute by transit or vanpool for up to \$115 per month in exchange for a tax deduction. Alternatively, employers may allow employees to exchange up to \$115 monthly in taxable salary for tax-free transit or vanpool benefits, or may share the costs with employees. Additional information is provided by the Association for Commuter Transportation at www.commuterchoice.com, or from the Federal Transit Administration and the National Transit Benefit Association.

7.2 Increase Coordination among Providers

A number of other key findings from the coordination planning process speak to methods for improving transit in the State. Although the specifics of transportation needs from region to region differ greatly, the primary findings in the process indicate that the needs of each region can be classified under the following:

- Increase service (more days, hours, geographic coverage including rural areas)
- Targeting populations that may not qualify for existing programs (like Medicaid and TANF) but are still low/fixed income and have unmet transportation needs
- Access to jobs many of which are across county or regional boundaries
- Improve response time for return trips through centralized and/or real-time scheduling
- Coordinate fleet replacements and expansion in an effort to reduce capital costs
- Develop programs that increase the utilization of existing services
- Improve the distribution of information to the riding public, human service agencies about available services through the use of a mobility manager (this is underway in the Lower Savannah Region).
- Expense pooling program (fuel, insurance, training etc.)
- Address cost allocation among operators to facilitate greater coordination/cooperation

These issues constitute the commonalities among the regions, but the coordination plan development process did show significant differences in the primary transportation needs of each region. Given the differences in the provision of service and the different evolution of relationships among agencies from region to region, potential strategies to address these issues will vary across the State. Each plan does place the responsibility of developing actual projects to the human service agencies and transportation providers and for the COGs to develop an evaluation process to identify which of these projects will receive funding.

A major goal for the Coordination Plan is to establish a methodology to evaluate potential projects at the Regional level so that limited resources are optimized. Based on the plan development process in the Upper Savannah Region the following criteria should be considered when selecting projects.

1. Projects that enhance reliability and schedule adherence of demand response services.



2. Projects that target new rural inter-community services should receive favorable ratings in the evaluation process.
3. Projects that relax eligibility requirements or increase the number of individuals eligible for service should be considered.

7.3 Expand Transit Service

There is little doubt that transit can be expanded in its role as a mobility option in South Carolina. Even though there is heightened awareness about the benefits of transit, expansion of service will be predicated upon identifying new service that is cost effective with defined benefits that warrant sustainability and funding.

In addition to the unmet need identified in the Region, demand estimates for Upper Savannah suggest there will be at least an 8% increase in transit demand every decade between now and 2030 (see Table 12 in the Statewide Transit Plan). This growth in demand will need the implementation of transit to, at the very least, maintain mobility.

7.3.1 Need to Accommodate the In-Flux of Elderly

South Carolina has one of the fastest growing elderly populations in the US because of the State's allure as a retirement destination. Many of these individuals have higher incomes (although may still be fixed incomes) and come from areas of the country where transit plays a greater role as a transportation option. One of the primary reasons the needs assessment shows so many deficiencies in the transportation system is attributable to the pressure the elderly population will exert on the transit network in terms of need for service and the propensity for using the service. Transit systems cannot be slow to react to new developments with elderly populations and should look for opportunities to partner with these developments to help fund transit programs.

7.3.2 Target Gaps in Rural Areas

The needs assessment for the Statewide Plan focused on transit dependent populations which showed that only 34% of the total transit need is being accommodated currently in counties with existing service. This equates to over 4 million trips and the number nears 6 million if those counties without service for of which are in the Upper Savannah Region, are included in the estimate. Rural transportation is a core function of transit in South Carolina and service in these areas should be expanded. Growing demand for mobility options in this extensively rural region should be anticipated over the next two decades.

7.3.3 Increase in Commuter Based Services

Even though the needs assessment in the Plan centers on the needs of transit dependent populations, there is a need to attract choice riders. From the Statewide Plan's perspective, development of regional commuter based systems will be left up to the individual regions since they are better equipped to produce ridership estimates and must identify long term funding programs. However, the State should support the implementation of regional commuter based transit through increased funding support,



especially for capital expenditures, such as the implementation of formal park and ride facilities, purchase of rolling stock, corridor preservation; as well as the introduction of pilot programs like the SmartRide program.

A key finding in the Plan is that the change in daytime population indicates significant travel patterns between regions and from the suburbs into the urban areas. The State of South Carolina currently provides no subsidies for intercity bus service, but these needs should be considered in the future, especially if additional service cuts are made to current operations. If necessary, state investment in intercity bus service should be considered to maintain key connections across the State and these services could augment commuter based services into the urban areas. Current State funding sources are used by public transit agencies to support the intercity commute-oriented services to jobs along the coast, but additional support for these services may be needed in the future. Additionally, as high speed rail services are developed, the State should examine its role in not only the rail operation, but any connecting bus service as well.

As a part of the development of the Statewide Transportation Plan, a corridor plan was developed to identify deficiencies in the roadway network that connects key cities and activity centers. Several of these corridors present opportunities for transit to play a role in attracting choice riders and potentially encourage a modal shift away from the automobile. There were a couple of corridors identified in the Upper Savannah Region that exhibit the characteristics necessary for transit to become a viable option. Table 24 shows the transit options to address these corridor issues and the Corridor Plan contains more detailed information.

Table 24: Potential Transit Options

SC Region	Corridor	Project ID/ Sub-Corridor	Route	Segment Length (miles)	Potential Transit Option(s)	
Upper Savannah	Mountains to the Sea	MS-6 to MS13	Anderson-Greenwood-Saluda	US 178/US 76/US 25	113.68	Local Bus
Upper Savannah	Mid-Carolina	M-4 to M-7	Saluda-Batesburg/Leesville-Columbia	US 378	27.12	Local Bus, Express Bus, BRT, Commuter Rail

7.3.4 Needs Incremental Approach with Sustainability

Another important component of the Plan is the Vision and Goals included in Section 4 which speak to the potential of transit as a catalyst for economic growth, and its role in maintaining mobility and the quality of life in South Carolina. One key ingredient in realizing this Vision will be to concentrate on core service as the transit network incrementally grows. It will be important to maintain momentum for transit growth by avoiding the pitfalls of growing too fast and spreading services too thin. Planning transit expansion must hinge on the quantification of benefits and designing cost effective service so that they can be justified to funding entities and gain better support from the public and just as important, improve the image of transit in the public's eye. Sustainability is a very important concept to the establishment and growth of transit services in the Upper Savannah Region because systems must take every precaution for new service to be successful.



7.4 Other Action Items

7.4.1 Coordinating Transportation and Land Use Decisions

South Carolina has the fifth worst sprawl rating in the country and ranks fourth in the amount of land being developed on a per capita basis. Even more remarkable is that South Carolina, one of the smallest states (40th in size), ranks ninth in the country in the total number of acres that are being developed. A statewide study conducted by the Center for Urban Policy Research, Rutgers University entitled, *South Carolina Infrastructure Study: Projection of Statewide Infrastructure Costs 1995-2015* (1997), determined that through compact growth, South Carolina would reduce its infrastructure costs for a 20-year period (1995 to 2015) by nearly \$5 billion.

In South Carolina, the State is responsible for transportation and local governments are responsible for land use and zoning. Frequently there are inadequate incentives for municipalities to cooperate with one another and the State on transportation and land use issues. There is a need to take voluntary but cumulative steps toward improving transportation and land use planning in the State.

Access management techniques provide a way to manage access to transportation facilities, typically highways. These techniques can help increase public safety, extend the life of major facilities, reduce congestion, support alternative transportation modes, and improve the appearance and quality of the built environment while ensuring appropriate access to adjacent businesses and other land uses. Managing access to transportation facilities and services is one way to preserve the operational integrity of the transportation system while ensuring its compatibility with adjacent land uses.

7.4.2 Upgrade Passenger Rail Service

Develop an integrated Statewide Rail Plan that includes coordination of all entities relative to passenger rail service, including freight interests and Amtrak. Address future growth and development opportunities facilitating passenger rail service. Identify options for a sustainable source of state funding with which to support capital and operating costs of passenger rail and/or other incremental transportation services. Work with the railroad companies to ensure that upgrades are made to track and other equipment that benefit both passenger and freight rail:

- Work with both public and private sector interests to improve the State's rail infrastructure and passenger and freight rail service.
- Continue to support the interstate efforts to implement high speed rail in the Southeast. A connection to HSR on I-85 would enhance mobility in the Upper Savannah Region.
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7.5 Conclusion

This plan provides a framework for collaborative, continuous actions on the part of SCDOT, the metropolitan planning organizations, councils of governments, and regional



stakeholders to move toward effective implementation of a multimodal transportation network along the Strategic Corridor System.

The need for collaborative efforts at all levels is evident considering that the scale of cumulative transit funding needs in South Carolina through 2030 (\$3.88 billion) significantly outstrips unconstrained projections of available funding (\$2.15 billion) over the same period. Financial deficits for current, planned and projected transit operations are anticipated in each region. The urgency for action becomes more essential as rising fuel and travel costs, socioeconomic and environmental impacts, right-of-way limitations for roadway expansion, and demographic changes collectively suggest the growing need on South Carolina's critical corridors for viable alternatives to personal single-occupant motorized transportation, now and into the future. If shortfalls at the state and regional levels continue unabated, the state's citizens and leaders will have to come to terms with the prospect of substandard transit service levels that fall short of meeting a diverse range of intra-regional and inter-regional needs.

While the challenges ahead may appear insurmountable, this plan lays out action items which can be tailored to help address many of the burdens to be placed on current and future transit providers and those who will rely on their coordinated services. A balance can be struck between anticipated transit demand and the minimum acceptable corridor levels of service to reflect the quality of life expected within each region. State and regional partners may build on the focus group findings and other analyses in this plan to help articulate the purpose and need for enhanced transit services and pursue the most acceptable mechanisms to fill gaps in funding.

