



ARTS 2035

Long Range Transportation Plan

FINAL REPORT

September 2010



PREPARED FOR:
Augusta-Richmond County
Planning Commission

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AUGUSTA CANAL
HISTORIC TRAIL



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RESOLUTION OF ADOPTION

AUGUSTA REGIONAL TRANSPORTATION STUDY

2035 LONG RANGE TRANSPORTATION PLAN

WHEREAS, the Augusta-Richmond County Planning Commission has been designated as the Metropolitan Planning Organization for the Augusta Regional Transportation Study (ARTS); and

WHEREAS, federal regulations for metropolitan transportation planning and programming require that a Metropolitan Planning Organization develop and maintain a Long Range Transportation Plan in cooperation with participants in the transportation planning process; and

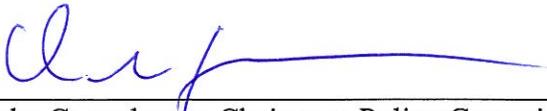
WHEREAS, the ARTS 2035 Long Range Transportation Plan has been developed in conformance with federal regulations at 23 CFR 450.322; and

WHEREAS, the ARTS Participation Plan has been followed in providing citizens, affected public agencies, transportation providers and users, representatives of the disabled and other interested parties with the opportunity to be involved in the development of the ARTS 2035 Long Range Transportation; and

WHEREAS, the ARTS 2035 Long Range Transportation Plan addresses any issues raised as part of the public participation process, and documents the entire public participation process;

NOW, THEREFORE, BE IT RESOLVED that the Augusta Regional Transportation Study Policy Committee hereby adopts the ARTS 2035 Long Range Transportation Plan and authorizes the Chariman to sign this Resolution of Adoption.

Adopted this 2nd day of September, 2010



Deke Copenhaver, Chairman, Policy Committee
Augusta Regional Transportation Study



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Acknowledgements

The ARTS 2035 LRTP was developed in collaboration with the following entities:

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Voting Members:

- Deke Copenhaver, Mayor of Augusta (Chairman)
- Ron Cross, Chairman Columbia County Commission (Vice-Chairman)
- Fred Cavanaugh, Mayor of Aiken
- Patricia Cole, Mayor of Blythe
- Lark Jones, Mayor of North Augusta
- Robert Buchwitz, Chairman Hephzibah Commission
- George James, Mayor of Grovetown
- COL Glenn A. Kennedy, II, Garrison Commander Fort Gordon
- Vance Smith, Commissioner Georgia Department of Transportation
- C. H. Williams, Mayor of Burnetown
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South Carolina ARTS Policy Subcommittee:

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- Lark Jones, Mayor of North Augusta (Vice-Chairman)
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- Ken McDowell, North Augusta Council member
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- Robert Lee, FHWA Division Administrator

ARTS Citizen Advisory Committee:

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 - Greg Capers
 - Mark Ivey
- Augusta-Richmond County
 - Les Morton
 - Wilbert “Butch” Gallop, Jr.
- Aiken County
 - Raymond Griffin – City of North Augusta
 - Willie Bell – Aiken County





- Walter Lamb – City of Aiken

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- Mike Sullivan, PE, Area Planning Engineer, South Carolina DOT
- Kenny Larimore, Regional Planning Engineer, South Carolina DOT
- Members of the 2035 LRTP Advisory Committee

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1. Planning Context

1.1 ARTS MPO

A Metropolitan Planning Organization (MPO) is a federally mandated entity responsible for coordinating transportation planning, policies, and programming in urbanized areas with populations of 50,000 or more. MPOs are required to ensure that federally funded transportation projects and programs are based on a continuing, cooperative, and comprehensive (3-C) planning process. Augusta Regional Transportation Study (ARTS) functions as a bi-state MPO and is responsible for transportation planning in accordance with the federal metropolitan planning requirements for Augusta-Richmond County and a portion of Columbia County in Georgia, and portions of Aiken and Edgefield Counties in South Carolina. The cities in the Augusta Regional Transportation Study (ARTS) area include Augusta, Grovetown, Hephzibah, and Blythe in Georgia, and Aiken, North Augusta, and Burnetown in South Carolina.

Like every MPO, ARTS is required to work cooperatively with federal, state, and local governments and local transportation service providers within the context of a well-defined metropolitan transportation planning process. Since ARTS is a bi-state MPO, MPO staff coordinates directly with the Georgia Department of Transportation (GDOT) and the South Carolina Department of Transportation (SCDOT). ARTS does not lead the implementation of transportation projects, but rather serves as the formal agency that plans and programs transportation improvements within the ARTS area, which are eventually implemented by local and state jurisdictions. Furthermore, as required by federal legislation, ARTS must provide the public and interested stakeholders with reasonable and meaningful opportunities to be involved in the transportation planning process. **Chapter 3** outlines the public and partner outreach conducted during the ARTS 2035 Long Range Transportation Plan (LRTP).

1.2 ARTS Planning Documents

In order to carry out its function as the coordinating agency for transportation planning, ARTS develops, implements, monitors, and updates a variety of transportation plans, including the Unified Planning Work Program (UPWP), the Transportation Improvement Program (TIP), and this LRTP. The UPWP is an annual work program and budget that identifies all activities to be undertaken by each member agency in a fiscal year. The TIP is the short-range program of transportation projects that is based on the LRTP and covers a period of four years.





Finally, the LRTP (this document) is the long-range, financially-constrained transportation plan for the region that covers the 20 year federal requirement. According to federal law, all LRTPs must be updated every four or five years depending on their MPOs air quality status: maintenance, nonattainment, or attainment. The ARTS LRTP must be updated every five years because it is currently considered in attainment for federal air quality standards.

1.3 ARTS MPO Structure

The ARTS is made up of three committees: the Policy Committee, the Technical Coordinating Committee (TCC), and the Citizens Advisory Committee (CAC). The Policy Committee meets quarterly and the TCC and CAC meet jointly 6-7 times per year.

1.3.1 Policy Committee

The ARTS is under the general policy guidance of the Policy Committee. This committee is responsible for ensuring that future plans are functionally sound, financially feasible, and generally conform to the goals and objectives of the state, region, and local community. The Policy Committee also provides guidance and leadership for implementation.

The South Carolina Policy Subcommittee serves in an advisory capacity to the Policy Committee, and is responsible for insuring that the South Carolina portion of ARTS is kept up-to-date. The South Carolina Policy Subcommittee meets quarterly and is comprised of local elected officials (voting members), and federal, state and local appointed personnel (nonvoting members).

1.3.2 Technical Coordinating Committee (TCC)

The TCC is charged with the responsibility of reviewing the Study, furnishing progress information to the Policy Committee and the Citizens Advisory Committee, and providing to the Policy Committee technical assistance in assessing the problem of implementing alternative proposals.

The TCC is a committee of technical persons, and its role is to bring together and coordinate all the special skills and training necessary to develop a comprehensive transportation plan. As plans and alternatives are prepared and approved by this committee, they are presented to the respective legislative authorities to gain approval.





1.3.3 Citizen Advisory Committee (CAC)

One component of the ARTS public involvement policy, the CAC, is designed to function as an information dissemination and reaction group. Their review of social, economic, and environmental aspects of transportation projects is an important consideration for the Policy and Technical Coordinating Committees in altering and updating the Augusta Regional Transportation Study.

The role of the CAC and the other public involvement activities are significant in the planning process. Community acceptance for conclusions reached in the Study update depends on the effectiveness of the overall public involvement process.

1.4 Legislative Mandates

In the mid-twentieth century, transportation planning was primarily focused on highway building and expansion to accommodate the increased use of automobiles. Through the decades, the focus has shifted to establishing a multimodal transportation system that includes roadways, public transit, and bicycling and pedestrian facilities. As a result, more recent transportation laws, regulations, and policies have encouraged the development of a multimodal transportation planning process. Specifically, metropolitan transportation planning has been shaped and defined by three significant federal acts, including the **Intermodal Surface Transportation Efficiency Act (ISTEA)**; the **Transportation Equity Act for the 21st Century (TEA-21)**; and the most recent, the **Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)**.

On August 10, 2005, SAFETEA-LU was signed into law, and on March 18, 2010, President Obama signed the **Hiring Incentives to Restore Employment (HIRE) Act** into law, which extended SAFETEA-LU to December 31, 2010. SAFETEA-LU approves funding for surface transportation projects and also represents the largest surface transportation venture in the country to date. While SAFETEA-LU authorizes funding for many transportation funding categories and specific projects, it also continues the concepts identified by its predecessors ISTEA and TEA-21 regarding the cooperative, continuing, and comprehensive regional planning process. SAFETEA-LU establishes requirements that Metropolitan Planning Organizations (MPOs) must follow in the development of their long-range plans. All new metropolitan transportation plans developed after July 1, 2007 are required to be consistent with the new SAFETEA-LU planning guidance. The ARTS 2035 Long Range Transportation Plan (LRTP) update addresses and meets all SAFETEA-LU planning requirements as provided by the Federal Transit and Federal Highway Administrations.





The SAFETEA-LU planning factors and other federal and state mandates are discussed further in **Chapter 4**.

1.5 Other Related Plans and Studies

The ARTS 2035 LRTP is the most current transportation plan for the ARTS area. As with most planning documents, it builds upon and incorporates the ideas, issues, and recommendations of past and current planning efforts. The following plans and studies served as valuable inputs into the development of the ARTS 2035 LRTP.

- **ARTS Public Participation Plan (2008)** – This plan is designed to ensure timely and meaningful input into the metropolitan transportation planning process. The Participation Plan outlines the process to involve all interested parties in the regional transportation planning process and the development and amendment of major transportation studies undertaken as part of ARTS. This Plan fulfills requirements outlined in the Final Rule for Statewide and Metropolitan Transportation Planning as published in the Federal Register on February 14, 2007 by the Federal Highway Administration and Federal Transit Administration.
- **2030 Long Range Transportation Plan (2005)** – On September 1, 2005 the ARTS Policy Committee adopted the ARTS 2030 Long Range Transportation Plan. The committee's action culminated a two-year effort to update the previous version of the plan. The plan development process included an assessment of transportation needs, based both on citizen input and technical analysis, and identification of policies, programs, and improvement projects to address those needs. The list of road improvement projects include new ones as well as many that were in the previous plan. The new projects are concentrated in the suburban areas of Columbia, Richmond, and Aiken Counties and along the freeways that pass through those areas.
- **Congestion Management Process (CMP) (2007 and 2010)** – This plan is tailored to meet regional needs and is evaluated and adjusted periodically to meet changing needs and priorities. Based on the CMP, congestion mitigation strategies have been developed, and several of the strategies have been implemented. The MPO is currently updating its CMP and the results will be finalized in the fall of 2010.
- **Regional Freight Study (2009)** – This plan describes needs and deficiencies as they relate to freight transportation in the Augusta region. These needs and deficiencies reflect those that directly impact freight-related companies.
- **Regional Bicycle and Pedestrian Plan (2003)** – This plan update includes background research on existing conditions and routes within the region,





identifying routes that create a connected network of both bicycle and pedestrian facilities linking major destinations and prioritizing future projects based on regional needs and desires. The resulting document is a phased action plan with specific policies, strategies, and projects with cost estimates and identified funding opportunities.

- **Augusta Regional Advanced Transportation Management System (ATMS) Master Plan (2002)** – This plan outlines a phased, twenty-year plan for implementing an Intelligent Transportation System (ITS) in the Augusta region. Major ITS components include: Regional transportation control centers in Augusta and Aiken Field equipment (fiber optic cable, traffic signal controller upgrades, CCTV cameras, radar speed/volume detectors, and dynamic message signs); Deployment of the GDOT Highway Emergency Response Operators (HERO); and SCDOT State Highway Emergency Program (SHEP) units on area freeways. A separate Technical Memorandum includes the specifications for the regional ITS architecture.
- **Augusta-Richmond County Comprehensive Plan (2008)** – This plan features an updated profile of Augusta’s population, housing, economy, transportation network, public facilities and services, natural and cultural resources, and land use. The Community Agenda component of the plan includes a long-term vision for the future development of the entire City and its eight neighborhood (character) areas, and also an implementation program (goals, policies, and short-term work program) that the City and other stakeholders will use to address the identified community issues and opportunities. The narrative for each neighborhood area includes a summary of the recommended development patterns, appropriate land uses, and zoning classifications.
- **Columbia County Growth Management Plan (2005)** – This plan promotes orderly and rational development so that the County remains physically attractive while preserving important natural or historic resources. Such planning can also help the County invest its money wisely in infrastructure such as roads, water and sewer, schools, parks and green space, and other facilities needed to sustain the high quality of life that Columbia County residents enjoy. The Growth Management Plan creates guidelines for future growth-related decisions. Some decisions made include where to spend money on roads, schools, and parks or how to evaluate a rezoning request. This Plan is currently being updated by the CSRA Regional Commission.
- **Aiken County Comprehensive Plan (2004)** – This plan is intended to guide and help direct future development in the Aiken community. The plan articulates a framework for the arrangement of land use, traffic circulation, and public





services designed to encourage orderly physical development and contribute to the economic and social welfare of the community.

- **Northside Comprehensive Plan (2008)** – This plan was commissioned by the City of Aiken to provide vision for a potential growth area that currently has no land use plan. This Plan is the culmination of several months of public input and technical research which presents the preferred future vision for the northside area. The vision described in the Plan embodies the goals of the area residents, businesses, and the City of Aiken over the next twenty to thirty years.
- **North Augusta Comprehensive Plan (2005)** – The North Augusta Planning Commission adopted the North Augusta Comprehensive Plan in 2005. The City of North Augusta Comprehensive Plan is a long-range plan for guiding and managing the future development of the city over a ten-year period. The plan examines the existing conditions affecting the community, enumerates the needs and goals for the future development of the city, and spells out the strategy for addressing the needs and achieving the goals. The plan serves as the primary tool for local decision making regarding future development and as a general source of information about the present and future conditions of the city. The comprehensive plan provides a guide for making choices by describing long-term goals for the city's future and policies related to more immediate actions and decisions. The comprehensive plan contains the city's official policies on land use, transportation, housing, natural and cultural environment, business and economic development and community services.





1.6 LRTP Overview

This ARTS 2035 LRTP is a culmination of extensive public and partner participation, active stakeholder input, technical analysis, population and employment projections, and local and regional needs assessment. This process has resulted in recommendations for multimodal transportation improvements for the ARTS area. The document is organized into the following chapters:

- Chapter 1 – Planning Context
- Chapter 2 – Study Area Characteristics
- Chapter 3 – Public Participation
- Chapter 4 – Goals and Objectives
- Chapter 5 – Multimodal Transportation Needs
- Chapter 6 – Multimodal Transportation Improvements
- Chapter 7 – Air Quality and Climate Change
- Chapter 8 – Safety and Security
- Chapter 9 – Financial Plan
- Chapter 10 – Fiscally Constrained Plan
- Chapter 11 – Environmental Mitigation
- Appendix A – Project Sheets
- Appendix B – The Travel Demand Model for the ARTS MPO
- Appendix C – Public Participation Summary Report





2. Study Area Characteristics

2.1 Study Area

As shown in **Figure 1**, the ARTS study area includes Augusta-Richmond County and portions of Columbia County in Georgia, and portions of Aiken and Edgefield Counties in South Carolina. The cities in the ARTS area include Augusta, Grovetown, Hephzibah, and Blythe in Georgia, and Aiken, North Augusta, and Burnetown in South Carolina.

The ARTS area is located on I-20 midway between two state capitals (Atlanta and Columbia), and I-20 provides connections to I-75 and I-85 in Atlanta; I-26 and I-77 in Columbia, South Carolina; and I-95 in Florence, South Carolina. These interstate to interstate connections offer businesses and residents convenient and efficient transportation connectivity to move goods and people throughout the country. Interstate 520, also known as Bobby Jones Expressway in Georgia and as Palmetto Parkway in South Carolina, is a circumferential limited access highway between I-20 in west Augusta, crossing over the Savannah River in a southeasterly direction to U.S. 1/78 (Jefferson Davis Highway) in North Augusta, South Carolina. The final section of the Palmetto Parkway, which opened to traffic in December 2009, now connects I-520 to I-20 at Exit 6. A newly constructed Greenway trail adjacent to the final phase of the new interstate extends five miles from Atomic Road (S-125) to Ascauga Lake Road (S-33) in North Augusta. The completion of the I-520 beltway around metropolitan Augusta improves mobility for goods and people and enhances economic development opportunities in the ARTS area.

Numerous roadway projects identified in the ARTS Transportation Improvement Program (TIP) have been completed recently or are now in the construction phase. Each project has or will provide improved connectivity and congestion relief for residents, area businesses, and visitors. The long-awaited Davis Road widening project has been completed. This new four-lane roadway has improved travel times and safety along this busy corridor between Washington Road and Walton Way and it has relieved congestion to and from the Augusta Exchange Shopping Center. The reconstruction of the I-20 and I-520 (Bobby Jones Expressway) interchange was completed and opened to traffic on November 12, 2009. The I-20 six-lane widening project between Walton Way Extension and River Watch Parkway was completed in January 2010. Both of these projects improve the movement of goods and people and forever change this part of the study area.



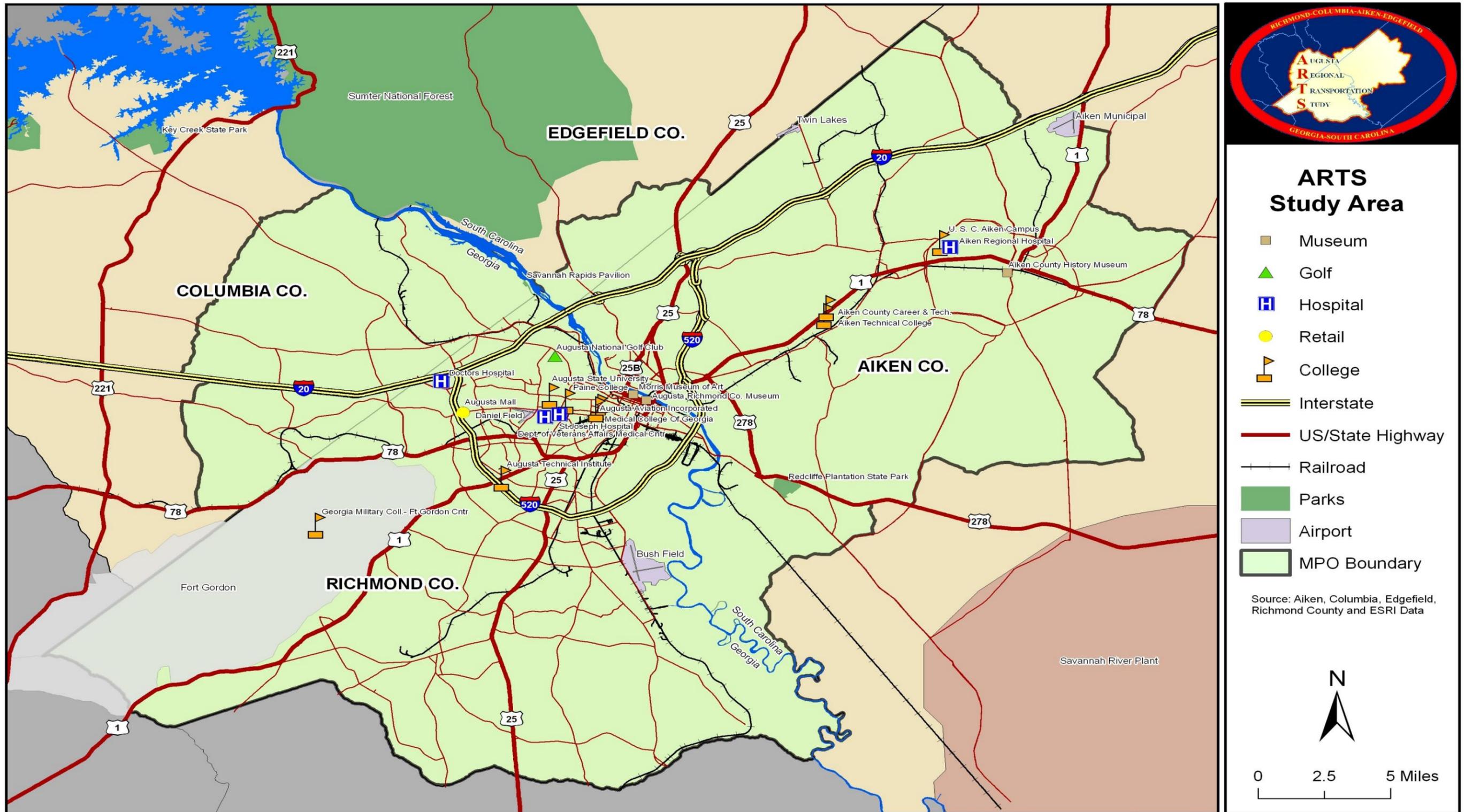


Work on the \$30 million St. Sebastian Way project is well underway, and this important project, once completed in December 2010, will connect Augusta's medical center to Riverwatch Parkway and bypass the downtown railroad tracks, which will improve traffic operations and safety in downtown Augusta.

Since 1934, during the first week in April, thousands of golf patrons from around the world travel to Augusta to watch The Masters Tournament. Over the past few years, Augusta National Golf Club has purchased property along Washington Road and Berckmans Road and has created public parking areas to serve golf patrons. These new parking venues have improved safety and traffic operations during Masters week.



Figure 1: ARTS Area Map





2.2 General Area Characteristics

The growth and distribution of the ARTS area population and employment will continue to have a significant impact on future transportation needs. Increases in population and employment will continue to place a heavy demand on the study area's transportation system. The amount and distribution of growth provide insights into the type, size and location of new transportation facilities required to meet present and future travel demand, including new highway projects, transit improvements, and transportation facilities for bicycles and pedestrians.

The last 25 years have brought significant changes to the ARTS area, and we expect the next 25 years will bring even more changes. In order to effectively manage, operate, and plan the ARTS transportation system, it is essential to understand how the area is growing and developing, how travel characteristics are changing, and how the transportation system is performing.

To ensure proper planning is carried out, the LRTP defines a vision for the region and develops goals and objectives that strategically assist in attaining that vision. In order to adequately plan for the future, existing and past conditions and trends must be examined. Pertinent questions such as the following need to be researched and answered:

- How many people live in the ARTS area, and how many new residents can we expect in the future?
- Where do people live, and in what types of communities?
- How many jobs are in the region, and where are those jobs located?
- What is the extent of the existing highway system and how is it used?
- What is the extent of the existing public transportation system and how is it used?
- What is the extent of the existing bicycle and pedestrian system and how it is used?
- What is the extent of the airports and how are they used?
- How do area residents travel to work in the ARTS area?
- How do needed goods move in and out of the region?

Understanding the past and present provides strategic guidance toward developing a long-range multimodal transportation plan that will accommodate future growth,





improve safety and security, and provide mobility choices for all residents in the ARTS area.

2.3 Data

Part of the LRTP planning process includes data to assist in the development of the ARTS 2035 LRTP. A variety of data and planning studies (noted in **Section 1.5**) were collected and reviewed from federal, state, and local agencies to ensure the latest available information was used. Various economic, social, and land development considerations that impact travel in the ARTS area were examined, and these considerations influenced the planning environment or context within which the ARTS 2035 LRTP was developed. Understanding the local economic, social, and land development characteristics, and addressing them in the LRTP results in a plan that reflects the community vision.

Collecting the most up-to-date data is critical during the LRTP process. Since the 2010 U.S. Census data was not available for the ARTS 2035 LRTP update, information in this section is based on Augusta-Richmond County Planning Commission data, which was developed by planners from Augusta-Richmond County, Columbia County, Aiken County, City of North Augusta, and the City of Aiken, as well as the 2000 Census, and the Census Transportation Planning Products (CTPP). The CTPP profiles include data from both the 2005–2007 American Community Survey (ACS) and the 2000 Census. The profiles are designed to give transportation planners an effective way to examine trends by including two time points. The CTPP data do not provide specific socioeconomic data for the ARTS area; instead the data is presented by county and city. Thus, the data presented for Columbia, Aiken and Edgefield Counties include areas that are outside of the ARTS urbanized area.

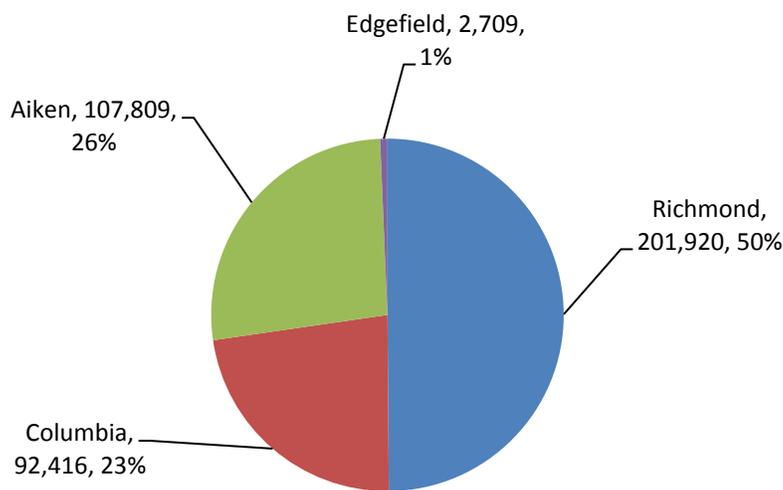
2.4 Existing Population

Based upon Augusta-Richmond County Planning Commission data, the 2006 (base year) population estimate in the ARTS area (urbanized area) totals 404,854 people. **Figure 2** shows the ARTS area population by the four counties in the ARTS urbanized area. Augusta-Richmond County has the largest population at 201,920, which constitutes 49 percent of the urbanized area population. Aiken County has a population of 107,809 (27%); Columbia County has a population of 92,416 (23%); and Edgefield County has a population of 2,709 (1%).





Figure 2: ARTS Area 2006 Population Estimate



Source: Augusta-Richmond County Planning Commission, December 2009.

Table 1 shows the population for these areas, based on CTPP data. As noted earlier, the CTPP profiles include data from both the 2005–2007 American Community Survey (ACS) and the 2000 Census. Since 2000, all jurisdictions in the ARTS area have grown except for Augusta-Richmond County. During this time period, Augusta-Richmond County experienced a population decrease of 1.7 percent, or 3,427 people. The City of North Augusta experienced a 20.7 percent population increase, which on a percentage basis was the highest among all jurisdictions in the ARTS area. However, Columbia County experienced the highest net population increase, of 16,406 people, which was an 18.3 percent increase.

Table 1: County and City Population

Jurisdiction	2000 Population	2005–2007 ACS Population	Percent Change
Augusta-Richmond County	195,419	191,991	-1.7%
Columbia County	89,288	105,694	18.3%
Aiken County	142,552	150,409	5.5%
Edgefield County	24,595	25,337	3.0%
Aiken, SC	25,340	27,267	7.6%
North Augusta, SC	17,176	20,732	20.7%

Source: 2000 Census SF3 Table P1 and 2005–2007 ACS Table B01003.

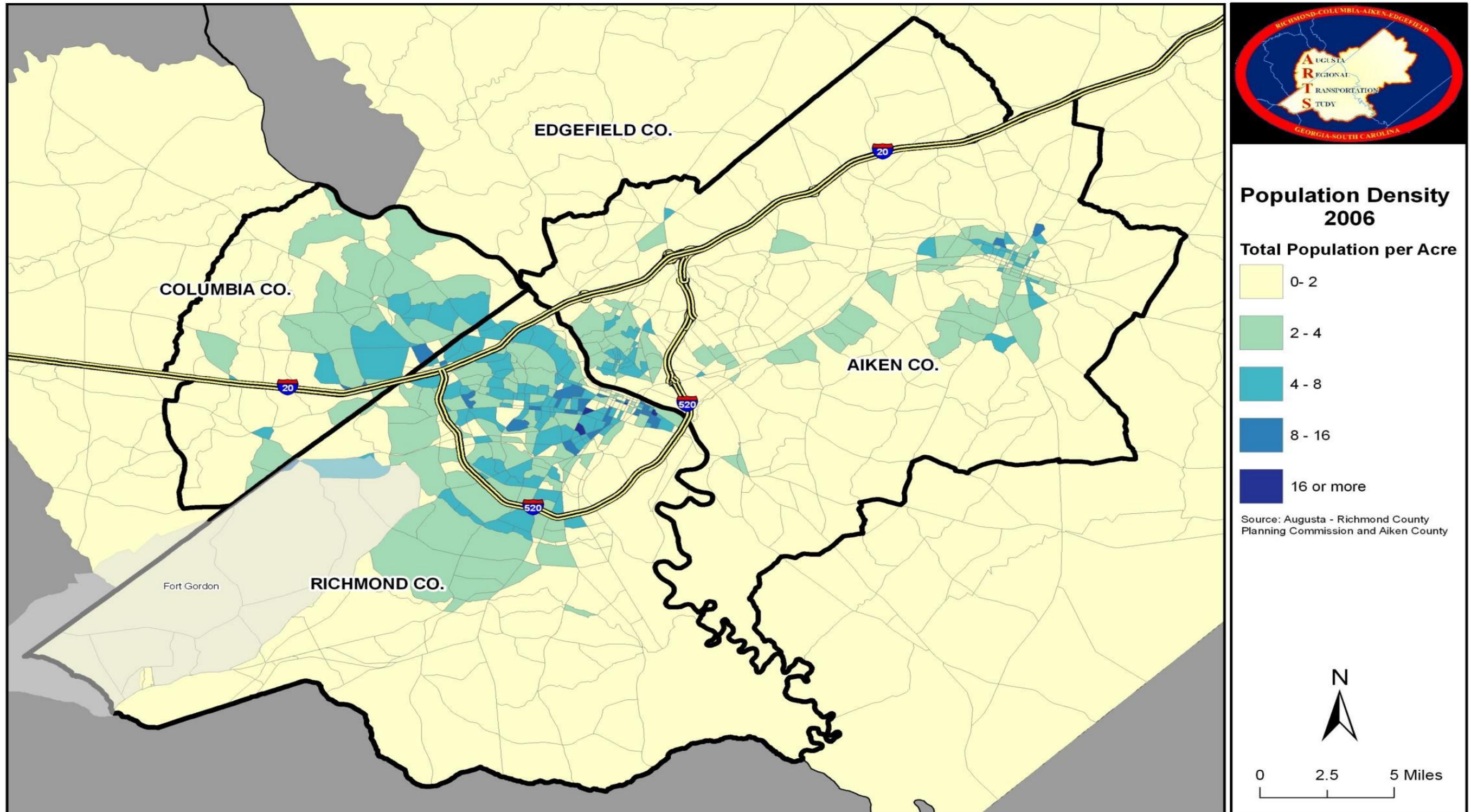




Figure 3 on the next page shows the base year (2006) population density in the ARTS area. The highest population densities in the region are concentrated in downtown Augusta inside of I-520, Martinez, Evans, North Augusta, and the City of Aiken.



Figure 3: ARTS 2006 Population Density



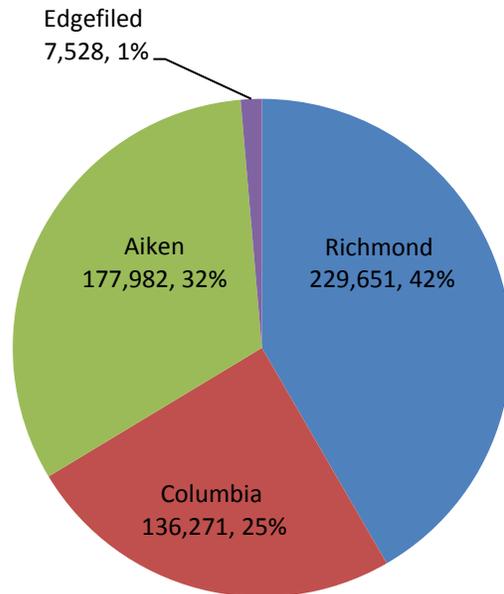


2.5 Future Population

The multimodal transportation needs and financially constrained projects identified in this LRTP are driven by a variety of factors, but one of the most important factors is the future population growth in the ARTS area.

Based upon Augusta-Richmond County Planning Commission data, the 2035 (future year) population estimate in the ARTS area totals 551,432 people, which is a 36 percent increase from 2006. **Figure 4** shows the ARTS area 2035 population by the four counties in the urbanized area. Augusta-Richmond County has the largest population at 229,651, which constitutes 42 percent of the ARTS urbanized area population. Aiken County has a population of 177,982 (32%); Columbia County has a population of 136,271 (25%); and Edgefield County has a population of 7,528 (1%).

Figure 4: ARTS Area 2035 Population Estimate

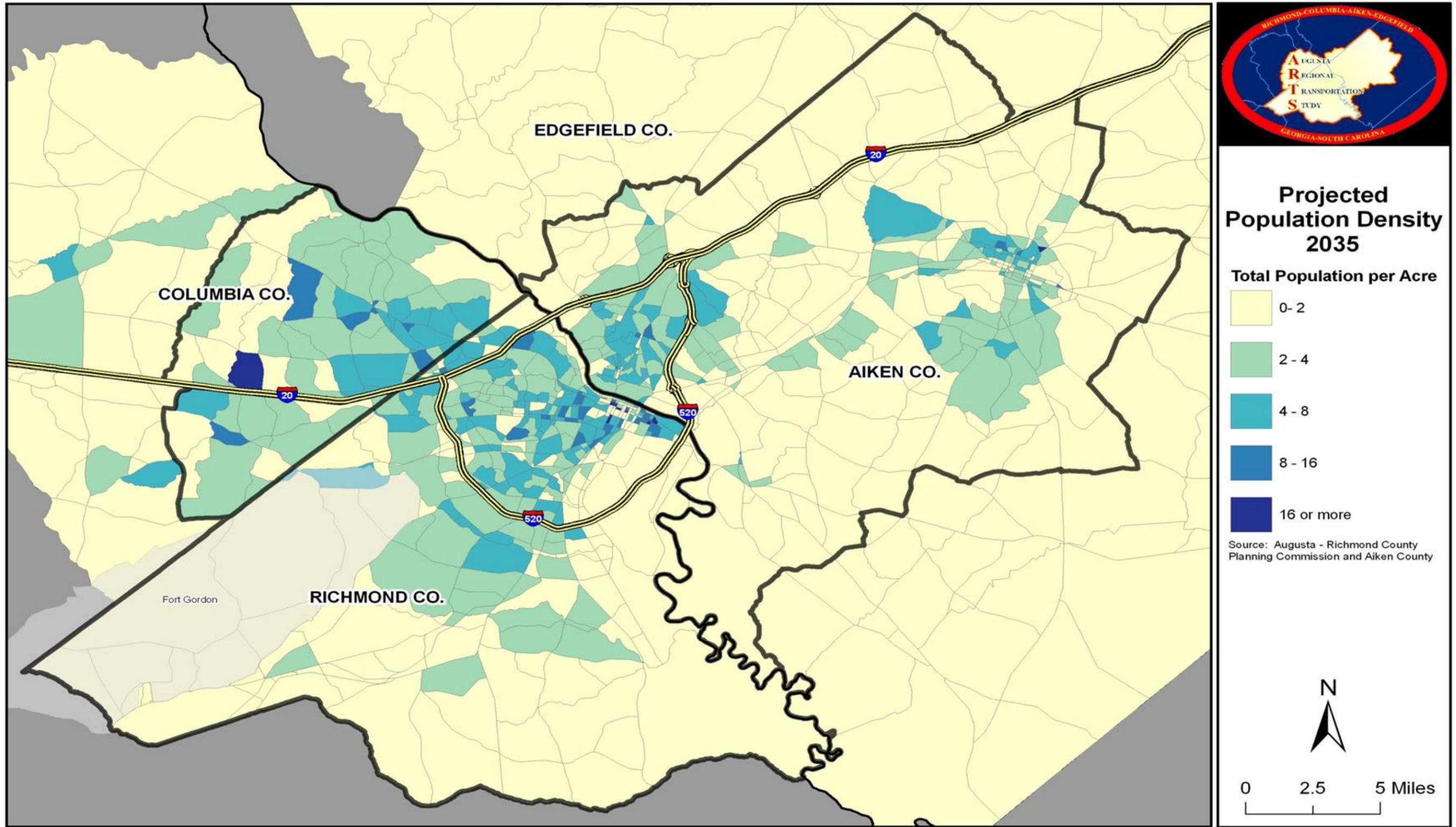


Source: Augusta-Richmond County Planning Commission, December 2009.

Figure 5 on the next page shows the projected 2035 population density in the ARTS area. The highest population densities in the region will continue to be concentrated in downtown Augusta inside of I-520, Martinez, Evans, North Augusta, and the City of Aiken. However, portions of Columbia County, North Augusta, and the City of Aiken will experience significant increase in population densities by 2035.



Figure 5: ARTS Projected 2035 Population Density

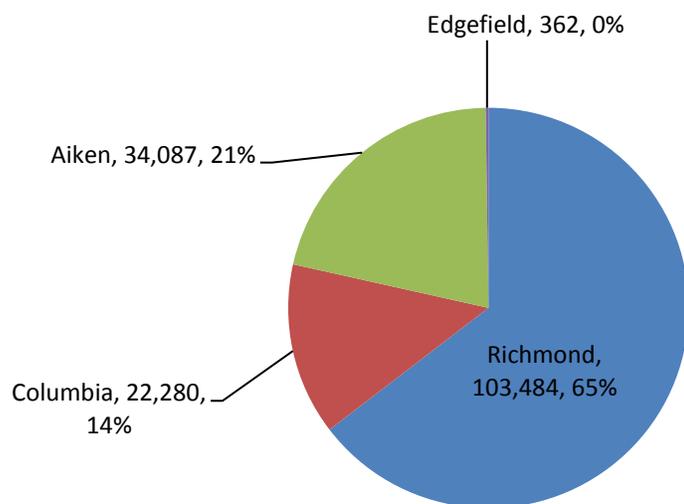




2.6 Existing Employment

The ARTS area labor force and employment conditions are critical components to examine in the LRTP process. Providing safe and efficient mobility options to residents is crucial to support job access and providing efficient multi-lane connectivity to markets is crucial to support existing industries and future business recruitment. **Figure 6** shows the base year (2006) breakdown of the total employment in the ARTS area (160,213) based on Augusta-Richmond County Planning Commission estimates.

Figure 6: ARTS Area 2006 Employment



Source: Augusta-Richmond County Planning Commission, December 2009.

Table 2 shows the 2008 total labor force available in Augusta-Richmond, Columbia, Aiken, and Edgefield Counties, as well as the number of residents employed and the unemployment rate. The labor force and employment numbers are county-wide totals for the four counties located in the ARTS area. Augusta-Richmond County has the largest labor force (91,641) but also has the highest unemployment rate, at 7.1 percent. Of the four counties in the ARTS area, Columbia County has the lowest unemployment rate, at 4.7 percent.





Table 2: County and City Labor Force

Jurisdiction	Labor Force	Employed	Unemployment Rate
Augusta-Richmond County	91,641	85,112	7.1%
Columbia County	60,329	57,484	4.7%
Aiken County	75,100	70,640	5.9%
Edgefield County	11,040	10,290	6.8%
TOTAL	238,110	223,526	6.1%

Source: Georgia Department of Labor, 2008 County Labor Profiles and the South Carolina Employment Security Commission County Labor Profiles.

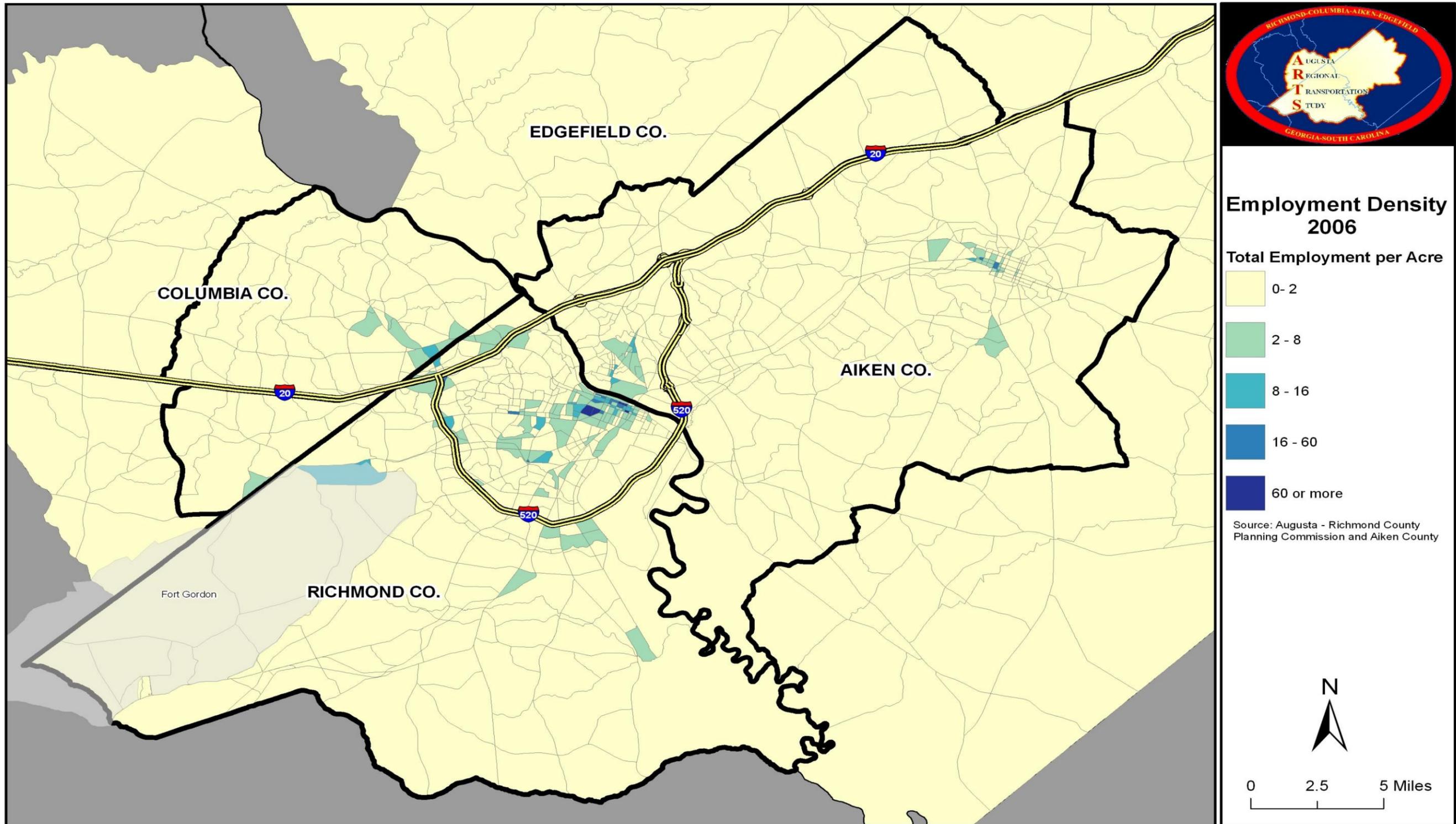
Figure 7 on the next page shows the base year (2006) employment density in the ARTS area. The highest densities in the region are concentrated in downtown Augusta, Martinez, North Augusta, and the City of Aiken.

There have been major shifts in the economy in 2009, and that has certainly impacted employment in the ARTS area. The Georgia Department of Labor reported that the July 2009 unemployment in the Augusta-Richmond Metropolitan Statistical Area (MSA) was 10 percent and the preliminary August 2009 unemployment rate was 9.5 percent compared to an unemployment rate of 6.8 percent in August of 2008.¹

¹ The Georgia Labor Department notes that the Augusta-Richmond County MSA includes Burke, Columbia, McDuffie, and Richmond Counties in Georgia and Aiken and Edgefield Counties in South Carolina. The total civilian labor force in August 2009 was reported to be 259,317, of which 234,701 were employed.



Figure 7: ARTS 2006 Employment Density

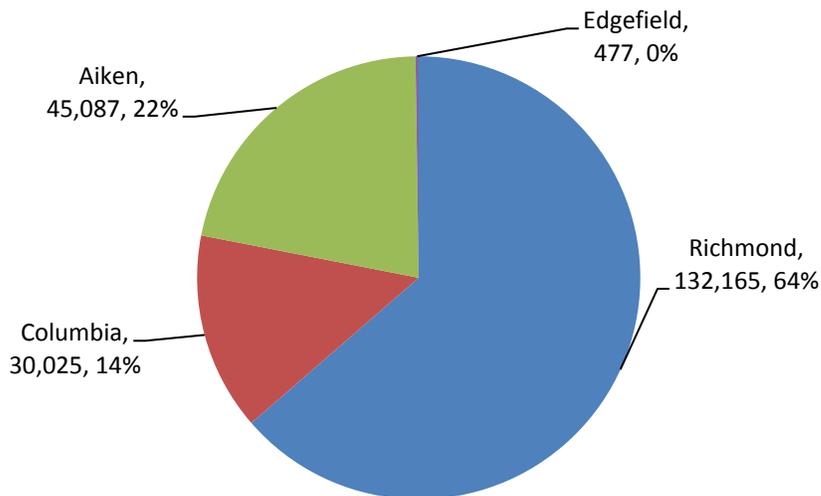




2.7 Future Employment

Employment growth in the ARTS area is another factor which impacts the operation of the multimodal transportation system. Based on Augusta-Richmond County Planning Commission data, the 2035 (future year), employment estimate in the ARTS area totals 207,754, which is a 29 percent increase from 2006. **Figure 8** shows the future year (2035) breakdown of the total project future employment in the ARTS area.

Figure 8: ARTS Area 2035 Employment

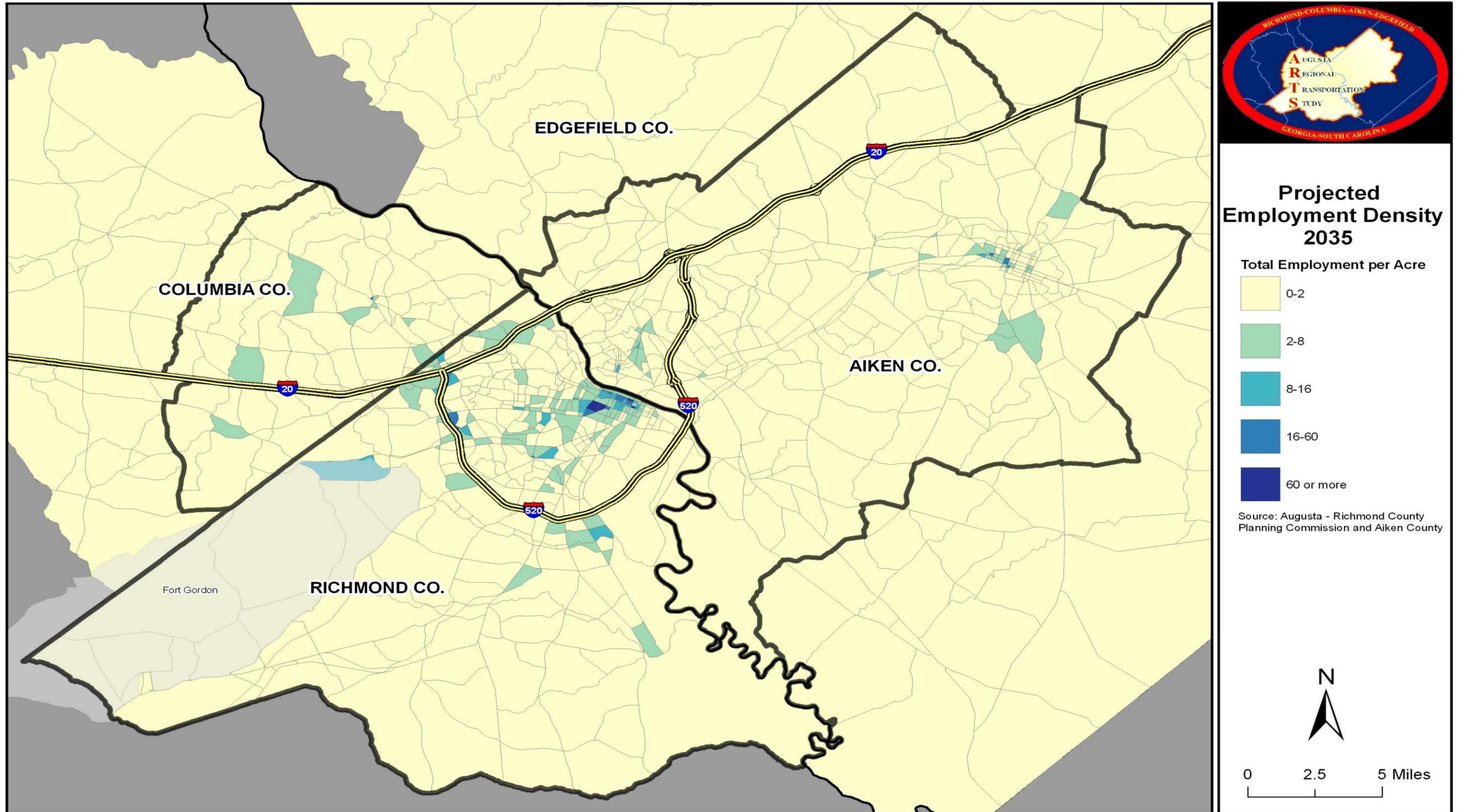


Source: Augusta-Richmond County Planning Commission, December 2009.

Figure 9 on the next page shows the projected 2035 employment density in the ARTS area. The highest employment densities in the region will still be concentrated in downtown Augusta, Martinez, North Augusta, and the City of Aiken. However, western portions of Columbia County and portions of south Augusta are projected to have higher employment densities by 2035.



Figure 9: ARTS Projected 2035 Employment Density





2.8 Existing Commuting Patterns and Large Employers

Examining commuting patterns in the ARTS area assists in understanding regional travel patterns. **Table 3** shows an existing county-to-county work flow matrix for the four counties in the ARTS area. Reviewing this data provides a picture of the commuting patterns in the ARTS area. Overall, over 90 percent of ARTS residents work in the Augusta-Richmond urbanized area, which is not surprising given the large industries and government facilities in the ARTS area.

Table 3: Employed Residents County of Work

Origin County	Destination County			
	Augusta-Richmond County	Columbia County	Aiken County	Edgefield County
Augusta-Richmond County	67,645	22,363	10,262	1,476
Columbia County	7,637	14,211	1,522	278
Aiken County	5,051	3,844	44,243	2,762
Edgefield County	225	127	1,339	3,930
Percent working in ARTS Area	95%	94%	90%	91%

Source: Georgia Department of Labor, 2008 County Labor Profiles and South Carolina Budget and Control Board Community Profiles.

Augusta-Richmond County provides the most jobs to ARTS residents. Augusta-Richmond County is the center for healthcare in eastern Georgia and western portions of South Carolina. Thus, it is not surprising that some of the largest employers in the county include **Fort Gordon, Medical College of Georgia, University Hospital, MCG Health, Gracewood State Hospital, and Doctors Hospital of Augusta**. The ARTS area also has several other large employers as noted below:

The **Fort Gordon Military Reservation** encompasses over 100 square miles (56,500 acres). It is located in Columbia and Richmond counties and is the home of the United States Army Signal Corps, the largest communications/electronics training center in the world. Fort Gordon is the largest employer in the region. The installation has over 22,000 military and civilian employees and, additionally, it provides services to over 71,000 people, bringing the total affected population in excess of 94,000.²

² Fort Gordon Military Affairs Office, 2009.





Medical College of Georgia (MCG) was founded 1828. It is the thirteenth-oldest continuously operating medical school in the United States and the third-oldest in the Southeast. MCG, Georgia's health sciences university, has more than 2,400 students in five schools: Medicine, Allied Health Sciences, Dentistry, Graduate Studies, and Nursing.

Located in downtown Augusta, the MCG offers modern classrooms and laboratories, the 540-bed MCG Medical Center, the Children's Medical Center, extensive outpatient clinics, residence halls, a student center, a wellness center, and an outstanding medical education library. With approximately 5,000 faculty, staff and residents, MCG is one of the largest employers in the Augusta area. The University System of Georgia reports that during the 2007 fiscal year, an additional 3,800 jobs were created within the area as a result from spending related to the institution, and its overall economic impact on the area approached nearly \$1 billion.³

Savannah River Site (SRS) is a key Department of Energy (DOE) industrial complex that encompasses 198,344 acres in Aiken County and Barnwell County, South Carolina. SRS was constructed during the early 1950s to produce basic materials used to make nuclear weapons, primarily tritium and plutonium-239. Original construction consisted of five reactors, two chemical separations facilities, tritium facilities, a nuclear fuel and target fabrication facility, a heavy water extraction facility, and waste management facilities. While SRS still handles nuclear materials for defense and some civilian purposes, the major focus has shifted to accelerated cleanup and waste management, environmental restoration, non-proliferation activities, and the use of SRS technologies to enhance the nation's economic competitiveness. As of April 2009, SRS employed approximately 11,000 workers and had an annual budget of \$2 billion.⁴

Club Car, a division of Ingersoll Rand, manufactures golf, utility, and transportation vehicles in Columbia County at its Washington Road facility. Today, over 40 base models with applications in golf course, grounds maintenance, industrial, commercial, and recreational markets are manufactured by Club Car. Consequently, Club Car is a large employer in the ARTS area.⁵

³ Medical College of Georgia

⁴ Facts about the Savannah River Site, June 2009.

⁵ <http://www.clubcar.com/AboutClubCar/Pages/default.aspx>





E-Z-GO, a division of Texton Corporation, was founded in 1954 in a one-room machine shop in Grovetown located in Columbia County. Now located on Marvin Griffin Road in Augusta, E-Z-GO is one of the leading global manufacturers of golf cars and utility vehicles and among the largest employers in the ARTS area.

Kimberly-Clark Corporation produces paper-based consumer products at its Beech Island Aiken County facility. The employment at this facility totals 1,300 people.⁶

Bridgestone-Firestone North American Tire is a subsidiary of Bridgestone Americas Holding, Inc., whose parent company, Bridgestone Corporation, is the world's largest tire and rubber company. Bridgestone-Firestone South Carolina employs approximately 964 at its Aiken County facility.⁷

2.9 Mode to Work

In the ARTS area today, the dominant mode of travel is the personal automobile. However, with new economic and environmental concerns, many area residents and businesses are increasingly rethinking their transportation habits, needs, and preferences. With this evolving shift, it becomes critical to consider future options and plan adequately for changing needs.

Examining the travel mode to work is a useful LRTP exercise because it provides a baseline on how an area is currently commuting to work, and it can assist in developing future mobility improvements and potential future targets. The data in this section is based on the Census Transportation Planning Package (CTPP), which includes data from the 2005–2007 American Community Survey (ACS) and the 2000 Census. The CTPP provides information based on county or city boundaries; thus, the following section is organized in the same manner.

2.9.1 Augusta-Richmond County

Based on the 2005–2007 ACS, there were 78,244 total workers in Augusta-Richmond County, which is a 5.8 percent decrease from the 2000 Census. As shown in **Figure 10**, 75 percent drove alone to work, 11 percent carpooled, 8 percent walked, 3 percent worked at home, 2 percent used public transportation, 0.5 percent bicycled, and the remaining 1 percent used other means.

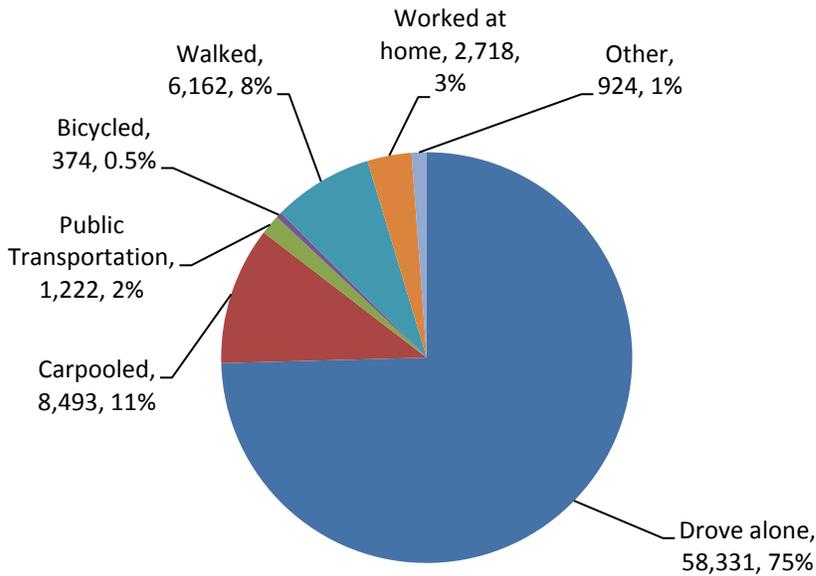
⁶ Economic Development Partnership of South Carolina

⁷ Economic Development Partnership of South Carolina





Figure 10: Augusta-Richmond County Mode to Work



Source: 2005–2007 ACS Table C08301.

Table 4 provides a mode to work comparison between the 2000 Census and the 2005–2007 ACS. Since the 2000 Census, there was a decrease in driving alone and carpooling to work, of 8.1 percent and 29.6 percent respectively. However, there was a 39.6 percent increase in using public transportation, and an increase of 46.8 percent in walking to work during this same period.





Table 4: Augusta-Richmond County Mode to Work, 2000 Census vs. 2005–2007 ACS

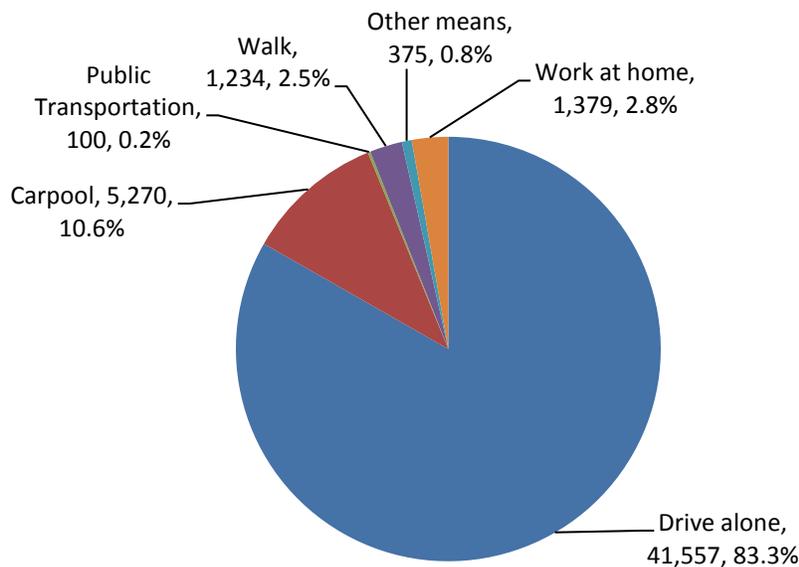
Mode to Work	2000 Census		2005–2007 ACS		Percent Difference
	Number	Percent	Number	Percent	
Total Workers	83,040	100.0	78,224	100.0	-5.8%
Drove alone	63,470	76.4	58,331	74.6	-8.1%
Carpooled	12,065	14.5	8,493	10.9	-29.6%
Public transportation	875	1.1	1,222	1.6	39.6%
Walked	4,195	5.1	6,162	7.9	46.8%
Other means	1,270	1.5	1,298	1.7	2.2%
Worked at Home	1,170	1.4	2,718	3.5	132%

Source: CTPP2000 Table 1-002 and 2005–2007 ACS Table C08301.

2.9.2 Columbia County

Though only portions of Columbia County are included in the ARTS area, the CTPP reports Columbia County data for the entire county. Based on the 2005–2007 ACS, there were 49,915 total workers in Columbia County, which is an increase of 14.7 percent from the 2000 Census. As shown in **Figure 3**, 83.3 percent drove alone to work, 10.6 percent carpoolled, 2.5 percent walked, 2.8 percent worked at home, 0.2 percent used public transportation, and the remaining 0.8 percent used other means.

Figure 11: Columbia County Mode to Work



Source: 2005–2007 ACS Table C08301.





Table 5 provides a mode to work comparison between the 2000 Census and the 2005–2007 ACS. It is evident that Columbia County has experienced significant growth in population and employment since the 2000 Census. While there was a decrease in the percentage of people who drove alone to work between the 2000 Census and the 2005–2007 ACS (86.2% in 2000 and 83.3% in 2005–2007 ACS), there was a 10.8 percent increase in the number of Columbia County workers driving alone to work (4,057 workers). Since the 2000 Census, total workers have increased by 14.7 percent, and driving alone to work and carpooling to work represented 93.9 percent of the way Columbia County residents commuted to work. Since the 2000 Census, carpooling increased by 17.9 percent and public transportation increased 66 percent, but in real terms, an additional 40 people used public transportation to commute to work. Walking increased 414 percent, and other means increased 29.3 percent, while working at home increased 45.1 percent, since the 2000 Census.

Table 5: Columbia County Mode to Work, 2000 Census vs. 2005–2007 ACS

Mode to Work	2000 Census		2005–2007 ACS		Percent Difference
	Number	Percent	Number	Percent	
Total Workers	43,505	100.0	49,915	100.0	14.7 %
Drove alone	37,500	86.2	41,557	83.3	10.8%
Carpooled	4,470	10.3	5,270	10.6	17.9%
Public transportation	60	0.1	100	0.2	66%
Walked	240	0.6	1,234	2.5	414%
Other means	290	0.7	375	0.8	29.3%
Worked at Home	950	2.2	1,379	2.8	45.1%

Source: CTPP2000 Table 1-002 and 2005–2007 ACS Table C08301.

2.9.3 Aiken County

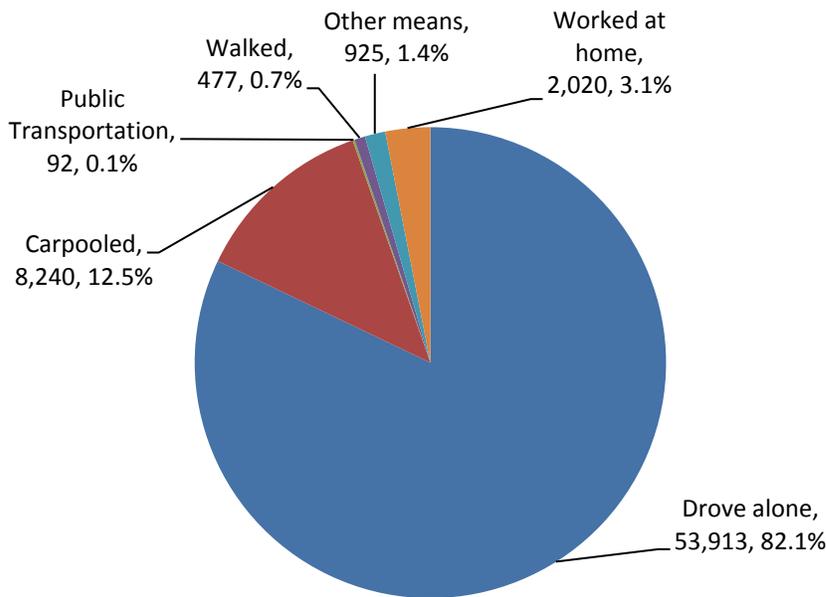
While only portions of Aiken County are included in the ARTS area, the CTPP reports Aiken County data for the entire county and has a subset for the City of Aiken and the City of North Augusta. This section summarizes Aiken County mode to work characteristics, and the two cities are further reviewed in a later section.

Based on the 2005–2007 ACS, there were 65,667 total workers in Aiken County, which is an increase of 4.5 percent from the 2000 Census. As shown in **Figure 12**, 82.1 percent drove alone to work, 12.5 percent carpoolled, 0.7 percent walked, 3.1 percent worked at home, 0.1 percent used public transportation, and the remaining 1.4 percent used other means.





Figure 12: Aiken County Mode to Work



Source: 2005–2007 ACS Table C08301.

Table 6 provides a mode to work comparison between the 2000 Census and the 2005–2007 ACS. While total workers increased by 4.5 percent, driving alone to work increased at a slightly higher rate of 5.2 percent while carpooling, public transportation, and walking to work decreased by 5.7 percent, 41.7 percent, and 47.9 percent respectively. Best Friends Express operates the public transportation system in Aiken County. While the ACS showed a decrease in work trips using public transportation, Best Friends Express experienced a 13 percent ridership increase between FY 2008 and FY 2009 (FY 2008 ridership was 26,734 and FY 2009 ridership was 30,079).⁸

⁸ Information provided by Lower Savannah Council of Governments operators of the Best Friends Express.





Table 6: Aiken County Mode to Work, 2000 Census vs. 2005–2007 ACS

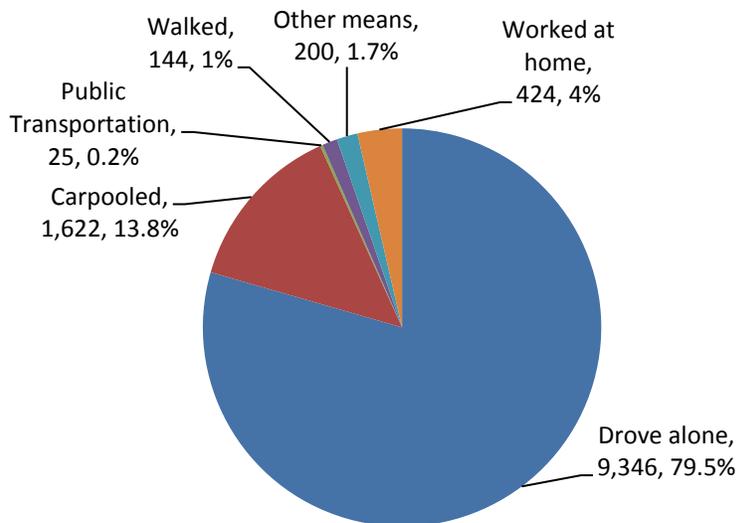
Mode to Work	2000 Census		2005–2007 ACS		Percent Difference
	Number	Percent	Number	Percent	
Total Workers	62,800	100.0	65,667	100.0	4.5%
Drove alone	51,240	81.6	53,913	82.1	5.2%
Carpooled	8,740	13.9	8,240	12.5	-5.7%
Public transportation	158	0.3	92	0.1	-41.7%
Walked	915	1.5	477	0.7	-47.9%
Other means	639	1.0	925	1.4	44.7%
Worked at Home	1,110	1.8	2,020	3.1	81.9%

Source: CTPP2000 Table 1-002 and 2005–2007 ACS Table C08301.

2.9.4 City of Aiken

Based on the 2005–2007 ACS, there were 11,761 workers in the City of Aiken, which is an increase of 7.1 percent from the 2000 Census. As shown in **Figure 13**, 79.5 percent drove alone to work, 13.8 percent carpooled, 1.2 percent walked, 3.6 percent worked at home, 0.2 percent used public transportation, and the remaining 1.7 percent used other means.

Figure 13: City of Aiken Mode to Work



Source: 2005–2007 ACS Table C08301.





Table 7 provides a mode to work comparison between the 2000 Census and the 2005–2007 ACS. While total workers increased by 7.1 percent, it is encouraging that driving alone to work increased at the lower rate of 5.8 percent, and carpooling increased by 18.8 percent. Similar to the county, the City of Aiken also showed a decrease in traveling to work via public transportation and walking, at 35.9 percent and 62.1 percent, respectively.

Table 7: City of Aiken Mode to Work, 2000 Census vs. 2005–2007 ACS

Mode to Work	2000 Census		2005–2007 ACS		Percent Difference
	Number	Percent	Number	Percent	
Total Workers	10,980	100.0	11,761	100.0	7.1%
Drove alone	8,830	80.4	9,346	79.5	5.8%
Carpooled	1,365	12.4	1,622	13.8	18.8%
Public transportation	39	0.4	25	0.2	-35.9%
Walked	380	3.5	144	1.2	-62.1%
Other means	155	1.4	200	1.7	29%
Worked at Home	210	1.9	424	3.6	101.9%

Source: CTPP2000 Table 1-002 and 2005–2007 ACS Table C08301.

2.9.5 City of North Augusta

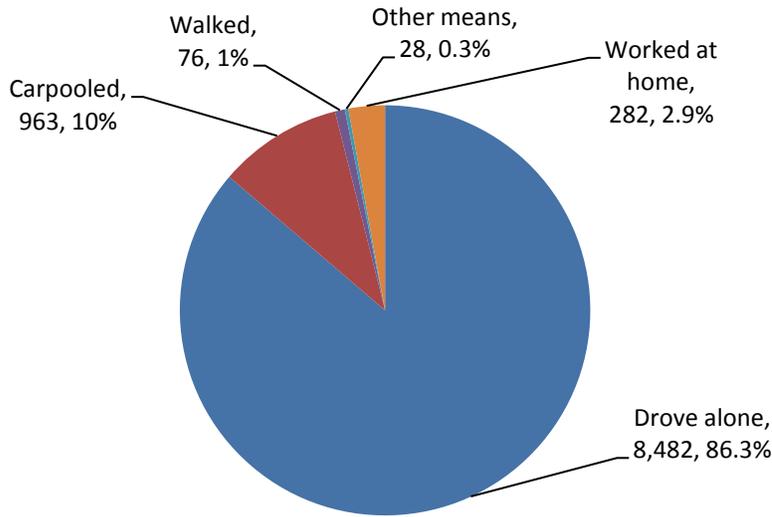
Based on the 2005–2007 ACS, there were 9,831 total workers in the City of North Augusta, which is an increase of 18 percent from the 2000 Census. As shown in **Figure 14**, 86.3 percent drove alone to work, 9.8 percent carpooling, 0.8 percent walked, 2.9 percent worked at home, and the remaining 0.3 percent used other means.

As shown in **Table 8**, North Augusta’s total workers grew by 18 percent, while driving alone to work grew at a slightly higher percentage of 20.1 percent. Based on the 2000 Census, 30 people used public transportation to commute to work; however, the 2005–2007 ACS reported that no North Augusta residents used public transportation to travel to work. During the LRTP process, coordination with Best Friend Express confirmed that local residents do use Best Friend Express to commute to work and the 2010 Census data, when released, should more accurately reflect the commute ridership.





Figure 14: City of North Augusta Mode to Work



Source: CTPP2000 Table 1-002 and 2005–2007 ACS Table C08301.

Table 8: City of North Augusta Mode to Work, 2000 Census vs. 2005–2007 ACS

Mode to Work	2000 Census		2005–2007 ACS		Percent Difference
	Number	Percent	Number	Percent	
Total Workers	8,330	100.0	9,831	100.0	18.0%
Drove alone	7,065	84.8	8,482	86.3	20.1%
Carpooled	970	11.6	963	9.8	-0.7%
Public transportation	30	0.4	0	0.0	-100%
Walked	85	1.0	76	0.8	-10.5%
Other means	29	0.3	28	0.3	-3.44%
Worked at Home	145	1.7	282	2.9	94.5%

Source: CTPP2000 Table 1-002 and 2005–2007 ACS Table C08301.

2.10 Travel Time to Work

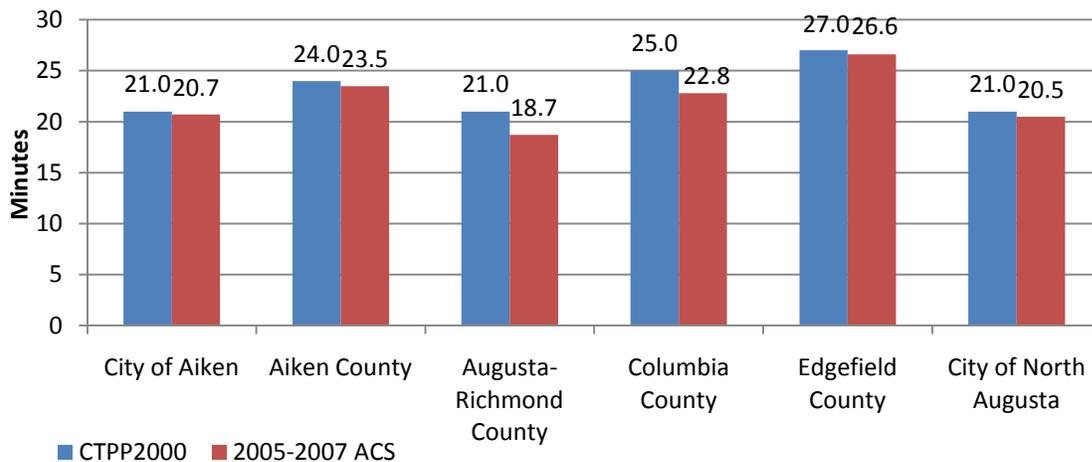
Travel time to work refers to the total number of minutes that it usually takes a person to get from home to work each day. American workers are spending more time than ever getting to work. In 2000, the national average travel time to work was 25 minutes and 30 seconds, an increase of over two minutes compared to 1990. Ten million workers nationwide now travel 60 minutes or more to their jobs, and 6.7 million of them are workers in large MSAs. Examining travel time to work provides information on traffic congestion, and it also can provide information on sprawl.





Figure 15 illustrates the mean travel time to work comparison between 2000 Census and the 2005–2007 ACS for Augusta-Richmond County, Columbia County, Aiken County, City of Aiken, and the City of North Augusta. Overall, travel time to work has decreased slightly throughout the ARTS area. Augusta-Richmond County workers have the shortest mean travel time of 18.7 minutes, while workers in Edgefield and Aiken Counties have the longest mean travel times to work in the ARTS area, 26.6 and 23.5 minutes respectively. A large majority of the jobs in the ARTS area are located in Augusta-Richmond County and at the Savannah River Site (outside ARTS area). Thus, it is not surprising that workers outside of Augusta-Richmond County have the longest commute times in the ARTS area.

Figure 15: Mean Travel Time to Work



Source: CTPP2000 Table 1-118 and 2005–2007 ACS Table C08136.

2.11 Highways

The highway system in the ARTS area serves many functions, including commuting to jobs and school, moving freight and goods, intercity and interstate business, personal travel, and recreational travel. The Dwight D. Eisenhower National System of Interstate and Defense Highways, commonly called the Interstate Highway System, serves the national purpose of moving people and goods throughout the United States. The ARTS area is served by two interstate highways, I-20 and I-520. I-20 provides direct access to the region from Atlanta and from Columbia, SC. Access to other cities in close proximity to the ARTS area is provided by non-interstate routes. US 25 provides access to Savannah and US 78 provides to Charleston, SC. US 1 connects Augusta to Macon





and southeast Georgia and continues in a northeasterly direction from Augusta to Columbia, SC.

2.11.1 National Highway System

The National Highway System (NHS) was developed by the U.S. Department of Transportation (U.S. DOT) in cooperation with the states, local officials, and metropolitan planning organizations (MPOs). The NHS includes the following subsystem of roadways important to the nation's economy, defense, and mobility:

- **Interstate:** The Eisenhower Interstate System of highways retains its separate identity within the NHS.
- **Other Principal Arterials:** These are highways in rural and urban areas which provide access between an arterial and a major port, airport, public transportation facility, or other intermodal transportation facility.
- **Strategic Highway Network (STRAHNET):** This is a network of highways, which are important to the United States' strategic defense policy, provides defense access, continuity and emergency capabilities for defense purposes.
- **Major Strategic Highway Network Connectors:** These are highways, which provide access between major military installations and highways, are part of the Strategic Highway Network.
- **Intermodal Connectors:** These highways provide access between major intermodal facilities and the other four subsystems making up the National Highway System.
-

The NHS in the ARTS area consists of the following roadways:

- | | |
|---------|----------|
| ▪ I-20 | ▪ US 78 |
| ▪ I-520 | ▪ GA 56 |
| ▪ US 1 | ▪ SC 19 |
| ▪ US 25 | ▪ SC 118 |

US 1/Deans Bridge Road and US 25/Peach Orchard Road in Georgia are classified as Non-interstate STRAHNET routes, and US 78/Gordon Highway is classified a Major STRAHNET Connector, since these routes provide access to the Fort Gordon Military Reservation.





2.11.2 Intermodal Connectors

Intermodal connectors are the freight linkages between the private intermodal transfer points or terminals and the public carriers or transportation routes. Therefore, these connectors are the interface between private and private or private and public infrastructure elements.⁹ The NHS intermodal connectors are crucial public roadways that serve the following major facilities:

- Public Transit Stations
- Ports
- Airports
- Truck/Rail Terminals
- Intercity Bus Stations
- Amtrak Stations
- Pipeline/Truck Terminals
- Ferry Terminals
- Multimodal Passenger Sites

Intermodal connectors were designated in cooperation with State Departments of Transportation (DOTs) and MPOs based on criteria developed by the FHWA and the U.S. Department of Transportation. NHS connectors are typically short, averaging less than two miles in length. They are usually local, county, or city streets and generally have lower design standards than mainline NHS routes, which are primarily Interstates and arterials. Intermodal connectors serve heavy truck volumes moving between intermodal freight terminals and mainline NHS routes, primarily in major metropolitan areas.

These connectors typically provide service in older, industrialized and other mixed land use areas where there are often physical constraints or undesirable community impacts.¹⁰ GA 56 Spur/Doug Barnard Parkway is classified as an intermodal connector because it provides direct access from I-520/Bobby Jones Expressway to Augusta Regional Airport at Bush Field.

⁹ National Surface Transportation Policy and Revenue Study Commission. Commission Briefing Paper 3J-01 Current Financing and Future Needs of Other Components of the Surface Transportation System. TranSystems, Mach 2007.

¹⁰ NHS Intermodal Freight Connectors: Report to Congress. U.S. DOT, December 2000.





2.11.3 Major Bridges

The Savannah River runs northwest to southeast and represents the border between Georgia and South Carolina. There are six roadway bridges over the Savannah River in the ARTS area that provide a total of 20 travel lanes between Georgia and South Carolina along the following roadways:

- I-20
- US 25 (13th Street in Georgia and Georgia Avenue in South Carolina)
- 5th Street (Jefferson Davis Memorial Bridge)
- US 1/US 278 (Gordon Highway in Georgia and Jefferson Davis Highway in South Carolina)
- I-520 (Bobby Jones Expressway in Georgia and the Palmetto Parkway in South Carolina)
- GA/SC 28 Sand Bar Ferry Road

2.11.4 Functional Classification System

Roadway classification is a necessary step toward assessing and evaluating the effectiveness of the roadway network. Individual roads depend on surrounding and intersecting roads to create a functioning network. Based on 2007 Federal Highway Statistics, the ARTS area has 2,318 highway miles (1,550 miles in Georgia and 768 miles in South Carolina) and a total of 9,158,000 daily vehicle miles traveled (6,685,000 DVMT in Georgia and 2,473,000 DVMT in South Carolina).

The Federal Functional Classification System is used by Georgia Department of Transportation (GDOT) and South Carolina Department of Transportation (SCDOT) to classify roads in the study area by categorizing a road section based on attributes common to its role and function in the network. **Figure 16** and **Figure 17** provide a summary of the functional classification roadway miles and daily vehicle miles of travel in the ARTS area. **Figure 18** shows the functional classification roadways in the ARTS area.

Interstates and Expressways – Defined as significant highways featuring limited access and continuous, high-speed movements for a wide variety of traffic types. Interstates and Expressways account for 59 miles in the ARTS area, which is 2.5 percent of the total highway system. While the actual Interstate and Expressway total miles within the ARTS area are small, **Interstates and Expressways account for 20 percent of the daily vehicle miles of travel (DVMT) in the ARTS area.**

Arterials – Classified as major or minor, these roads connect activity centers and carry large volumes of traffic at moderate speeds. The arterial system in the ARTS area totals





approximately 406 miles, consisting of 170 miles of Other Principal Arterials and 236 miles of Minor Arterials in the ARTS area. Arterials comprise approximately 17 percent of the ARTS highway system but account for 54 percent of the DVMT in the ARTS area.

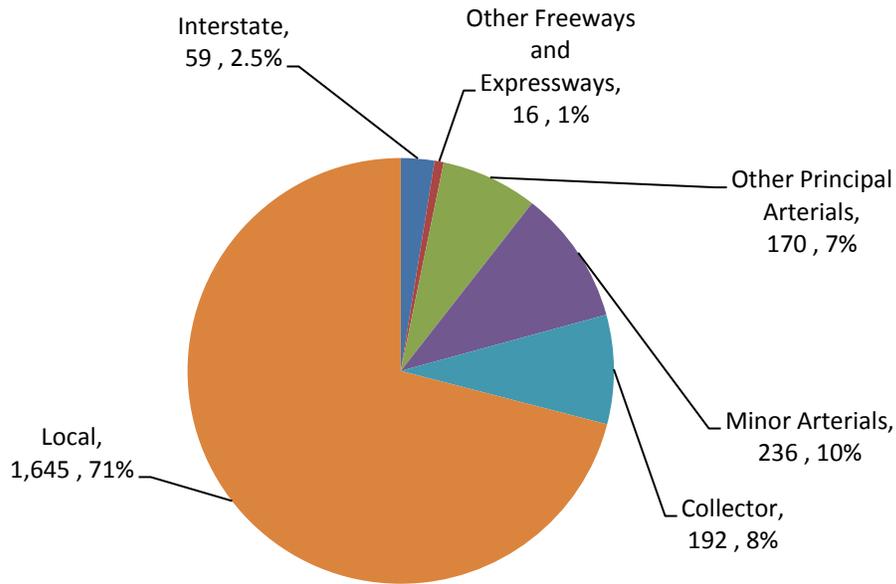
Collectors – Typically allow access to activity centers from residential areas. Collectors can also be categorized as major and minor, depending on the urbanized or rural setting. Their purpose is to collect traffic from streets in residential and commercial areas and distribute it to the arterial system. The collector system in the study area consists of 192 total miles, which is 8 percent of the ARTS area highway system and it carries 8 percent of the DVMT in the ARTS area.

Local Streets – Feed the collector system from low volume residential and commercial areas. Local streets are usually found in subdivisions and rural areas. **Local streets account for 1,645 miles, which is 71 percent of the ARTS highway system but local streets only carry 18 percent of the DVMT in the ARTS area.**



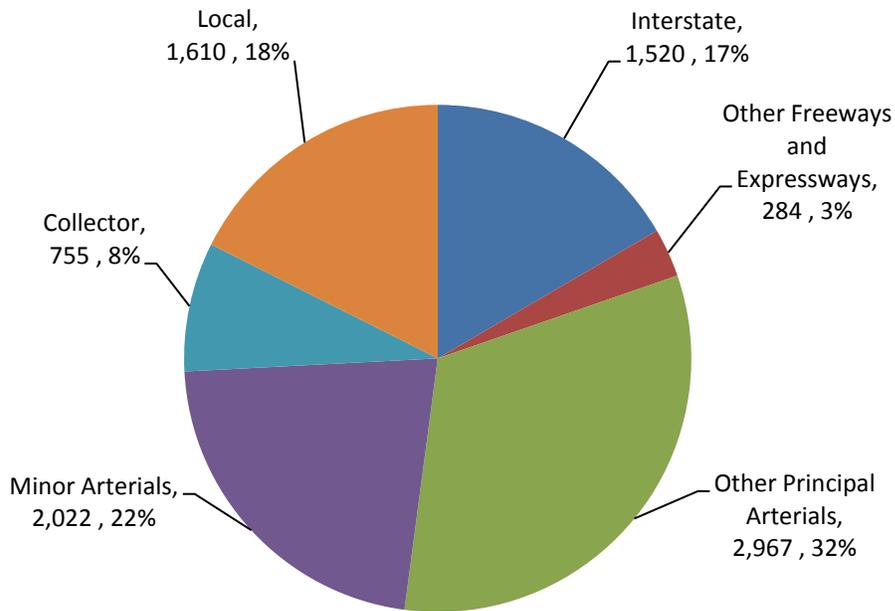


Figure 16: ARTS Highway Miles by Functional Classification



Source: FHWA Highway Statistics 2007.

Figure 17: ARTS Daily Vehicle Miles of Travel by Functional Class

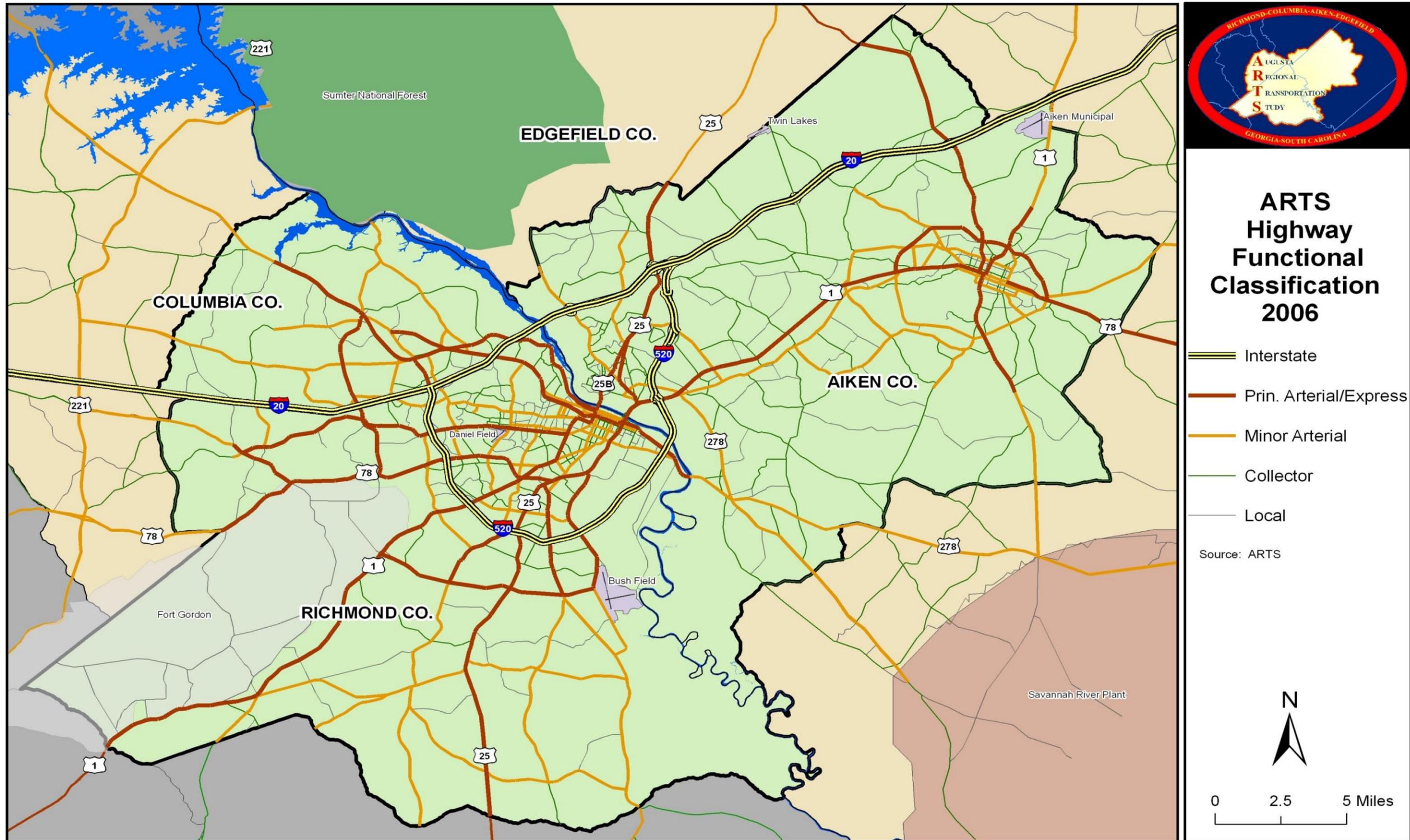


Note: Miles shown are in 1,000

Source: FHWA Highway Statistics 2007.



Figure 18: ARTS Functional Classification System





2.12 Airports

The ARTS area is served by three airports that provide commercial and general aviation services. The following sections provide an overview of each airport facility.

2.12.1 Augusta Regional Airport

Augusta Regional Airport, also known as Augusta Regional Airport at Bush Field, is a city-owned, public-use airport located six miles south of the central business district of Augusta on 1,411 acres in Augusta-Richmond County. The Augusta Regional Airport recently completed construction of a new terminal that cost approximately \$30 million. The project was funded by existing airport funds, Federal grants, funds collected from passenger facility charges, and airport revenue bonds. Highway access to the airport from the north and south is via State Route 56 Spur/Doug Barnard Parkway and from the east and west is via I-520 (Bobby Jones Expressway and Palmetto Parkway). Other highways in the surrounding area include I-20, US 1, US 25, US 78, Tobacco Road and State Route 56/Mike Padgett Highway. The airport accommodates a variety of aviation related activities including commercial service, corporate/business jets, recreational flying, agricultural spraying, freight service, police/law enforcement, and prisoner transport. Augusta Regional has two runways. The primary runway is 8,001 feet long and 150 feet wide with high-intensity runway lighting (HIRL) and medium-intensity approach lighting system with runway alignment indicators (MALSR) on both runway ends.¹¹

Atlantic Southeast Airlines and US Airways Express provide daily commercial service to Atlanta and Charlotte. On June 10, 2010 a third regional carrier, American Eagle, began twice-daily service to and from Dallas. In 2008, Augusta Regional Airport had a total of 353,648 passengers, which was a 13.2 percent increase over 2007. In 2008, Atlantic Southeast Airlines had an 80 percent load factor (outbound passengers only), while US Airways had a 72 percent load factor (outbound passengers only).

As of August 2009, Augusta Regional Airport served a total of 265,460 passengers, which is 12.5 percent increase over 2008 year-to-date statistics. Atlanta Southeast Airlines currently has a 79 percent load factor, while US Airways has a 70 percent load factor.

¹¹ Georgia Department of Transportation, Georgia Aviation System Plan, Airport Summary Report 2003.





2.12.2 Daniel Field

Daniel Field is located along Wrightsboro Road and Highland Avenue in the City of Augusta. Highway access to the airport from the east and west is via I-20 and I-520. The airport, situated on 146 acres, is owned and operated by Augusta-Richmond County. The airport accommodates a variety of aviation related activities including recreational flying, corporate/business jets, flight training, and experimental aircraft. Daniel Field has two runways. The airport's primary runway is 3,900 feet long by 100 feet wide with medium intensity runway lighting (MIRL).¹²

Daniel Field is home to more than 70 aircraft, including many corporate aircraft, private aircraft used for both business and recreation, and the Augusta Squadron of the Civil Air Patrol. Due to the airport's proximity to Augusta's medical facilities, air ambulance and medical transport aircraft use Daniel Field on an almost daily basis. Daniel Field has over 27,500 operations a year.¹³

2.12.3 Aiken Municipal Airport

Aiken Municipal Airport is located along US 1 near Exit 22 on I-20 and it serves corporate jet service and general aviation service in Aiken County. The 70-acre airport facility is owned by the City of Aiken and it provides two runways. The primary runway is 5,500 feet long and 100 feet wide. As of July 2009, 37 single engine, 12 multi-engine, and four jet aircraft were based at the airport.¹⁴

2.13 Freight System

2.13.1 Truck Transportation

In 2006, approximately 101.2 million tons of freight was transported to, from, within, and through the Augusta region by trucks.¹⁵ The interstate highway system is responsible for moving the largest amount of the truck traffic. I-20 provides primary truck access to the Augusta region, while I-520 provides radial access to the City of Augusta from I-20 on the southwest side to US 1 northeast of Augusta.

2.13.2 Freight Rail

Freight rail transportation plays an important role in the overall transportation system in the ARTS area. Two Class I railroad companies provide freight service in the ARTS

¹² Georgia Department of Transportation. Georgia Aviation System Plan, Airport Summary Report 2003.

¹³ Augusta-Richmond County official website.

¹⁴ South Carolina Aeronautics Commission

¹⁵ ARTS Regional Freight Study, July 2009





area. Class I Railroads are line haul freight railroads with 2008 operating revenue in excess of \$401.4 million.¹⁶ The Norfolk Southern Railroad has a mainline and spur tracks serving industrial areas in Augusta, North Augusta and Aiken, which allows for efficient intermodal operations. The CSX Railroad has a mainline and spur tracks serving manufacturing facilities in Augusta and Columbia County, which allows for efficient intermodal operations. CSX Corporation has a mainline and spur tracks in the South Carolina portion of the ARTS area. The CSX rail line in South Carolina runs southeast from Augusta over the Savannah River to Aiken County toward the Savannah River Site. CSX Corporation main railroad yard is located off Laney-Walker Boulevard southeast of downtown Augusta. The yard covers approximately 117 acres and consists of an inbound receiving yard and an outbound classification yard. A second CSX yard, the Harrisonville Yard, is located on 48 acres between Wrightsboro Road and Olive Road. Norfolk Southern has two railroad yards in Augusta. One (the main classification yard) is approximately a mile south of downtown and a second (Nixon Yard) is south of Augusta Regional Airport near the International Paper Company. There are approximately 216 at-grade rail crossings in the ARTS area, as well as numerous grade separated rail crossings.

Short-line railroad companies operate over a relatively short distance and are independent of Class I railroads. Short-lines typically link two industries requiring rail freight, interchange revenue traffic with other railroads, and operate a passenger train service for tourism. Due to their small size and low revenue, short-lines are classified by the American Association of Railroads (AAR) as Class III railroads. There are currently no short-line companies that serve the ARTS area. However, Aiken County owns a four-mile Norfolk Southern spur that connects rail service directly with Aiken County's Sage Mill Industrial Park.¹⁷

In July 2009, the ARTS Regional Freight Study was completed. The study provided an overall ARTS Freight Profile and then it examined the following three primary topics in the ARTS area:

- Freight needs and deficiencies.
- Freight project identification.
- Freight project prioritization.

¹⁶ American Association of Railroads

¹⁷ Economic Development Partnership of South Carolina.





Freight related needs and projects identified during the *ARTS Regional Freight Study* was evaluated during the ARTS 2035 LRTP process to ensure the movement of goods is fully addressed throughout the study area.

2.14 Waterborne Transportation

The ARTS area does not have any waterborne freight transportation system on the Savannah River. All freight is moved by truck, rail, or air to and from the ARTS area. The closest port terminals to the ARTS area are located 138 miles away in Savannah, GA and 171 miles away in Charleston, SC.

Built in 1845 to harness the water and power of the Savannah River, the Augusta Canal offers history, recreation and unique experiences along miles of towpath, trail and waterway. Boat tours along the Augusta Canal are provided by the Augusta Canal Authority.

The Savannah Bluff Lock and Dam is located approximately 13 river miles downstream from the City of Augusta in Augusta-Richmond County, Georgia, and the City of North Augusta in Aiken County, South Carolina. This site consists of a lock chamber, dam, operation building, and a 50-acre park and recreation area. Construction of the Savannah Bluff Lock and Dam was completed in 1937. In 1979, the last commercial shipment passed through the Savannah Bluff Lock and Dam. Although the Savannah Bluff Lock and Dam no longer serves commercial navigation, it does serve general boating and fishing and specialized rowing and powerboat race events, regional economic development, and tourism.

2.15 Public Transportation

For many residents in the ARTS area, taking transit is not a choice, it is a necessity. ARTS residents that do not have access to a private automobile depend on Augusta Public Transit, Columbia County Transit, and/or Best Friends Express to access jobs, medical care, professional services, and many other facets of daily life.

2.15.1 Augusta Public Transit

Augusta Public Transit (APT) currently operates 10 fixed routes within the service area with a peak fleet of 13 buses. The system is primarily radial with eight routes terminating at the Transfer Facility at 1546 Broad Street, which also connects with Aiken's Best Friend Express. The remaining two routes, Barton Chapel and Lumpkin Road, terminate at a transfer point at K-Mart shopping center located southwest of downtown. Service frequency and schedules vary, but generally APT buses run from





5:45 a.m. until 8:30 p.m., Monday through Friday. Eight of the routes operate on Saturday from 6:10 a.m. until 7:30 p.m. No service is provided on Sunday.

APT also operates paratransit services for persons with disabilities, in compliance with the Americans with Disabilities Act of 1990. In accordance with guidelines issued by the Federal Transit Administration (FTA), APT provides paratransit service within 3/4 mile of each fixed route during the same operating hours as the local service. Paratransit service is available only to certified eligible passengers. Currently, APT has 22 transit buses and seven paratransit vehicles available for maximum service.

APT also provides non-urban (rural) transit service in the part of the city generally south of I-520 (Bobby Jones Expressway). This includes many of the fast-growing suburbs of south Augusta, as well as the more rural parts of the city in the vicinity of Hephzibah, Blythe, and the McBean area. As with the Paratransit service, riders must make an appointment in advance and be ready 30 minutes before the transit van is scheduled to arrive.

In September 2009, the Transit Development Plan (TDP) for Augusta Public Transit was completed. The TDP outlines public transportation needs and identifies improvements to make the fixed route system more efficient. Public transportation needs, coordination efforts with Columbia County Transit and Best Friends Express, and projects identified in the TDP were evaluated and incorporated into ARTS 2035 LRTP.

2.15.2 Columbia County Transit

Columbia County Transit is available to all residents of the county, offering curb to curb demand-response service to all Columbia County destinations and also Richmond County with the exception of the areas south of Gordon Highway. Service is available from approximately 9 a.m. to 4:30 p.m. Monday through Friday and reservations must be booked a minimum of one day in advance. The system typically accommodates 30 requests per day.

There are no restrictions regarding trip purpose, and typical trips are to medical appointments, schools, shopping, and recreation. Those not able to personally board the vehicle on may be accompanied by a medical escort, who is not charged a fare. Fares are currently \$4.50 each way for those under 60, \$3 each way for those over 60, and \$1 each way for children under 12 (However, no one under the age of 18 may ride unless accompanied by an adult). Secondary stops must be approved by the driver and cost an additional \$1.





2.15.3 Best Friend Express

Aiken County Transit provides fixed route service with complementary ADA paratransit service known as the Best Friend Express and Dial-A-Ride. The Lower Savannah Council of Governments (LSCOG) is the designated Direct Recipient of these FTA funds, as well as the South Carolina Department of Transportation designated Regional Transit Management Agency for the six-county Lower Savannah region. Lower Savannah Council of Governments was asked by Aiken County to assume the county's responsibilities for the transit program in 2004. Lower Savannah Council of Governments manages the program through contracts for operational services from the Aiken Area Council on Aging.

The Best Friend Express offers three (3) routes to serve the general public desiring transportation around the City of Aiken, the City of North Augusta, and the areas along the route between the two cities (along the Aiken-Augusta Highway), including Aiken Technical College as a transfer location. The Best Friend Express also crosses the state line to drop off and pick up passengers at the Augusta Public Transit transfer center so riders have an opportunity to use public transit in a wider service area. The Best Friend Express circulates its routes every two hours and operates Monday-Friday from 7:00 a.m. to 7:00 p.m. Saturday service was eliminated on October 17, 2009 as a result of decreased funding from Aiken County. All three buses serving the fixed route are 22 passenger, lift-equipped vehicles that will stop to pick up riders who "wave down" the bus anywhere along its route where the driver deems it safe for passengers to board or disembark. Half-fare rates are offered to Best Friend Express passengers with a disability; with a Medicare card; or who are 60 years of age or older. Discounted student rates are also available.

2.15.4 Intercity Bus Service

Intercity bus service in the ARTS area is provided by Greyhound Lines, Inc. Greyhound Lines, Inc. is the largest provider of intercity bus transportation, serving more than 2,300 destinations with 13,000 daily departures across North America.¹⁸ Intercity bus service is provided from Augusta to Atlanta five times a day and from Augusta to Columbia five times a day. Intercity bus service is provided from Aiken to Atlanta four times a day and from Aiken to Columbia five times a day. The Augusta intercity bus station is located at 1128 Greene Street and the Aiken intercity bus station is located at 153 Pendleton Street NW.

¹⁸ Greyhound Lines, Inc.





2.15.5 Passenger Rail

The ARTS area does not have passenger rail service. The closest passenger rail facilities to the ARTS area are provided by AMTRAK in Denmark, SC (62 miles away), Columbia, SC (74 miles away), Gainesville, GA (140 miles way), and Atlanta, GA (148 miles away).

2.16 Bicycle and Pedestrian Systems

ARTS addresses all modes of transportation, including non-motorized forms such as biking and walking. The ARTS area is served by a number of recreational pathways, two of the most notable are the Augusta Canal Multi-Use Trail that serves the City of Augusta and the North Augusta Greenway that serves the city of North Augusta. Primarily used as a recreational trail, the existing and planned greenway system for the ARTS area was examined as part of this update to the LRTP in an effort to extend their use as an alternative to personal motor vehicles. To do this, system gaps (such as hostile roadway crossings and segments that separate facilities) were examined and strategies for providing a seamless system of mobility for cyclists and pedestrians were developed during the LRTP planning process.

2.16.1 Bicycle System

The latest ARTS Bicycle and Pedestrian Plan was completed in 2003 and included provisions for multi-use trails as well as retrofits to many area roadways to accommodate cyclists as part of resurfacing projects. The range of retrofit measures included “Share the Road” signage; restriping to accommodate dedicated bike lanes; and widening to accommodate full width bicycle lanes. Both urban and rural roadways in Richmond, Columbia, and Aiken Counties are included in the project list, and the program presented priorities by available funding over a twenty-year period. The area is also proximate to and feeds two Georgia State Bicycle Routes. Route 85 roughly parallels the Savannah River from the North Carolina State Line to Savannah; Route 50 connects from Augusta west to the intersection with Route 85. These routes are geared toward longer distance riders, but it is important for the more localized facilities to provide seamless connections to these routes.

2.16.2 Pedestrian System

The 2003 ARTS Regional Bicycle and Pedestrian Plan included a set of minimum design guidelines for sidewalk facilities and a directive to include pedestrian facilities on all roadway improvement projects when allowed. The Plan also recognized the importance of connections to other modes of transportation such as transit, understanding that the provision of pedestrian shelters at bus stops would enhance the likelihood of a person





choosing to use transit. Direction was also given with regard to land use form and mixture of uses that could enhance walkability. It also offered guidance to local jurisdictions to understand impediments to walking that could result from existing zoning and subdivision regulations, and how to address those shortfalls. Finally, the Plan offered a set of specific recommendations for implementation strategies, including education, safety, design and maintenance, connectivity, land use policy, and funding initiatives. One pedestrian project currently under construction in the region is the Harlem Downtown Walkway Revitalization Plan in Columbia County.

Many gaps still exist in the current pedestrian mobility network and the ARTS 2035 LRTP identifies funding and projects that close gaps and increase the viability of walking as an alternate mode of personal transportation

2.16.3 Multi-use Trails

Local county and city staff throughout the ARTS area have done an excellent job in developing multi-use trails throughout the region. The North Augusta Greenway is a more than seven-mile paved recreational trail that follows an abandoned railroad right of way purchased by the city in 1988. The City recently completed a 1.5 mile extension to the Greenway that connects Crystal Lake to the Riverfront.

The multiuse trail along and connecting to the Augusta Canal includes the Augusta Canal Historic Trail, Downtown Riverwalk Trail, Headgates Entrance Trail, Mountain Bike Trail, New Bartram Trail, Olmstead Trail, and the canal towpath. The multiuse trails connect a number of residential subdivisions located along Evans-to-Locks Road, as well as provide connectivity from downtown Augusta to Petersburg Boat Dock on the Savannah River. In addition, Phase 3 of the Augusta Canal Trail project is currently under construction, as well as the multi-use facilities associated with the Historic Headgates in Columbia County. Also currently funded is the Eucheek Creek Trail from Harlem/Grovetown Road to Reynolds Farm in Columbia County.

2.16.4 Complete Streets

Complete Streets refers to a concept by which streets are designed to accommodate all users in a balanced fashion, and not be geared simply toward moving as many cars as quickly as possible. By enhancing the safety and efficiency of the roadway for pedestrians and cyclists, those modes become much more viable as alternative modes of travel to the personal automobile. Much national support has come about recently within the movement toward Complete Streets, the most notable of which was the passage in July 2009 of the federal Complete Streets Act of 2009. The South Carolina DOT adopted a Complete Streets policy in 2002, and the Georgia Department of





Transportation has consistently been taking steps to include cycling and pedestrian accommodations in its plans. Not only are Complete Streets principles important to new construction, but retrofit measures can help rebalance streets toward walkability and bikeability. Measures such as road and lane diets, addition of dedicated bike and pedestrian facilities, crosswalk enhancement, and traffic calming were examined as part of the ARTS 2035 update to ensure a seamless, gap-free non-motorized mobility network. The City of North Augusta is currently updating the North Augusta Greenway Master Plan, which includes additional off-road and on-road multiuse trails and facilities and Complete Street concepts.





3. Public Participation

The ARTS 2035 LRTP was developed through a continuous, comprehensive, and cooperative transportation planning process. Over a twelve-month period, from September 2009 to August 2010, a wide variety of stakeholders throughout the area were engaged in the LRTP planning process. The outreach and engagement activities described in this chapter include the role and purpose of the Advisory Committee, public participation meetings, Environmental Justice meetings, and an online transportation survey.

Public participation and outreach was a vital ongoing element of the ARTS 2035 LRTP development process. Study stakeholders, including local governments, businesses, community and special interests groups, and general public provided input and feedback throughout the planning process through meetings, interviews, and surveys. Public participation and stakeholder input opportunities were formally integrated at key LRTP milestones. Stakeholder and public feedback were considered in the identification of issues, needs, and improvement strategies for the ARTS area.

The basis for the public participation efforts centers on meeting the guidelines established in the LRTP Public Participation Plan, which was guided by the ARTS Public Participation Plan. The plan is designed to ensure timely and meaningful input into the metropolitan transportation planning process. The Participation Plan outlines the process to involve all interested parties in the regional transportation planning process and the development and amendment of major transportation studies undertaken as part of ARTS. The overall objective is to provide a process that is proactive, provides complete information, timely public notice, full public access to key decisions, and opportunities for early and continuing involvement.

The approach to public participation was community-based and focused on building support throughout the LRTP planning process at three levels: the organized Advisory Committee meetings, general public meetings, and special Environmental Justice meetings.

Appendix C (under a separate cover) provides comprehensive information related to the public participation efforts conducted during the development of the ARTS 2035 LRTP. The following sections in this chapter provide a summary of the Advisory Committee, Public Participation meeting, Environmental Justice (EJ) meetings, and survey results.





3.1 Advisory Committee

An Advisory Committee was formed at the beginning of the LRTP planning process. The purpose of the Advisory Committee was to provide overall direction and guidance in the development of the technical aspects of the LRTP. The Committee consisted of local government representatives and other local stakeholders. The role of the individual Committee member was to represent their organization relative to regional transportation issues, share information with their organizations and encourage public participation in the process. As a group, the Committee met three times at key milestones to discuss study work activities. The Committee acted as the clearinghouse for study needs, recommendations, and priorities. Advisory Committee meeting notes are provided in **Appendix C**, which is under a separate cover.

3.2 Public Participation Meetings

During the ARTS 2035 LRTP planning process, three rounds of public participation meetings were conducted to gather public input at key milestones of the LRTP planning process. The first public meeting was held in early December 2009 in North Augusta, South Carolina. The purpose of this meeting was to discuss and identify 2035 LRTP goals and objectives. During the second round, two public meetings were held. The first was in Augusta-Richmond County in February 2010 and the second was in Columbia County in March 2010. The purpose of the second round of public meetings was to solicit multimodal transportation needs and potential improvements to address these deficiencies. During the third round, three public meetings and two Environmental Justice (EJ) meetings were conducted. The first was in Columbia County in July 2010; the second was in Augusta-Richmond County in July 2010; the third was conducted in Aiken County in July 2010. The purpose of the third round of public meeting was to receive input and comments on the draft ARTS 2035 LRTP. Information from each of the six public meetings and five EJ meetings played a significant role in guiding the development of the ARTS 2035 LRTP and meeting notes from all public meetings are provided in **Appendix C**, which is under a separate cover.

The public meetings featured several ways for participants to provide comments and ask questions: in a group setting, one-on-one, and in writing. By offering a variety of ways to engage with local residents, the meetings' format helped elicit comments from people who might have been uncomfortable sharing their ideas in a group setting.

3.3 Environmental Justice Meetings

Environmental Justice Stakeholders were identified early in the LRTP planning process to ensure that the concerns and needs of low-income and minority populations in the





ARTS area were received and addressed in the 2035 LRTP. The ARTS 2035 LRTP is required to meet the requirements of Title VI of the Civil Rights Act of 1964, Executive Order 12898, and SAFETEA-LU. These federal regulations and guidelines regarding transportation plans and programs provide for a fully inclusive public outreach program. They ensure that recommendations do not disproportionately impact minority and low-income communities, while also allowing these groups to fully share in the benefits of transportation infrastructure investments.

Five EJ meetings were conducted during the ARTS 2035 LRTP planning process, and the information received during these meetings were incorporated into the LRTP. EJ meeting notes are provided in **Appendix C**, which is under a separate cover.

3.4 Transportation Survey

During the LRTP planning process, an online survey (also in a hard copy version) was distributed to numerous citizens and stakeholders in the ARTS study area. Since many EJ community residents do not have access to the internet, hard copies of the survey were provided to numerous community organizations in the ARTS area, such as Aiken Area Council on Aging, the CSRA Area Agency on Aging, Recreation Centers, and Augusta Public Transit. The hard copies of the survey were collected by the MPO and entered into the on-line survey so their responses would be included in the overall results.

As shown in **Figure 19**, an email announcing the online survey was distributed to the ARTS contact list and Augusta-Richmond County and Aiken County provided direct links to the survey on their county web page. A total of 272 local citizens responded to the survey, which was available between December 2009 and April 2010.





Figure 19: Transportation Survey Announcement

Tomorrow's Transportation Improvements Begin Here!

your comments matter

The Augusta-Richmond Planning Commission, which serves as the Metropolitan Planning Organization for the Augusta-Aiken urbanized area, is in the process of developing the 2035 Long Range Transportation Plan.

Please take a few minutes to complete an on-line survey. Click the link below to access the survey.

<http://www.surveymonkey.com/s/YGJNBC9>

For more information please contact Marya Moultrie at Augusta-Richmond Planning Commission 706. 821.1796 (mmoultrie@augustaga.gov) or Wilbur Smith Associates project manager, Jeff Carroll at 803.251.2189 (jcarroll@wilbursmith.com).

A profile of the survey participants reveals a mix of backgrounds. The most evenly divided trait is gender: 54.7 percent of participants were female and 45.3 percent were male. Of those who responded to the survey, Georgia residents comprised the majority, at 73.1 percent, while the remaining 26.9 percent of participants were residents of South Carolina. The age cohort of 36 through 65 represented 74.3 percent of all respondents. In the case of both age and residence, over 80 percent of survey takers provided information.

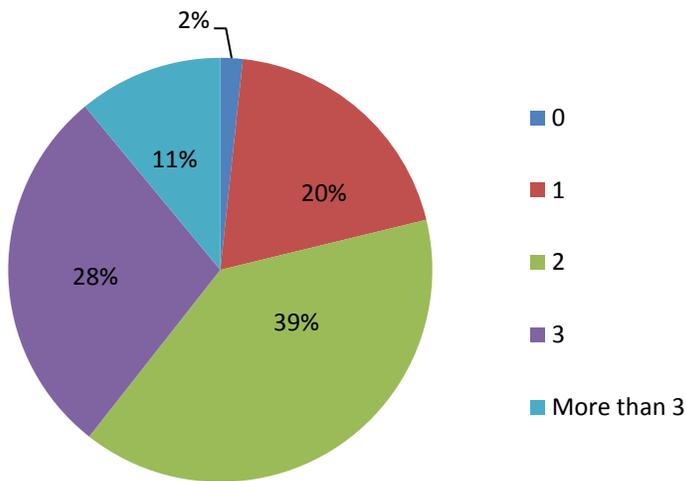




3.4.1 Automotive Transportation Habits

Participants were asked questions about their access to vehicles. **Figure 20** shows the number of cars in the respondents' families. The largest portion of respondents consists of two-car families, but a sizeable portion of three-car families responded as well. Participant responses can therefore be evaluated in light of a potential pro-car bias.

Figure 20: Number of Cars in Respondents' Families



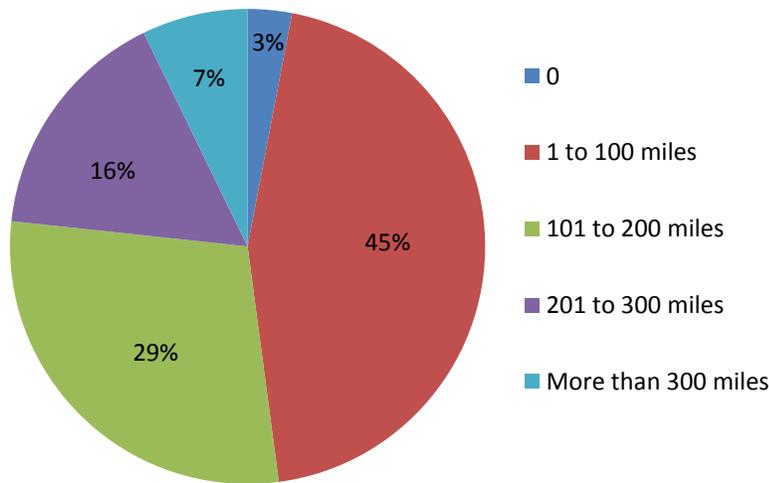
Source: ARTS 2035 LRTP Survey Results.





Figures 21 through 24 display responses from participants asked about their average transportation habits. In Figure 21, responses demonstrate that approximately three-quarters of respondents state they drive up to 200 miles per week. The greater portion of that group, however, state they do not drive more than 100 miles per week.

Figure 21: Average Number of Miles Driven per Week



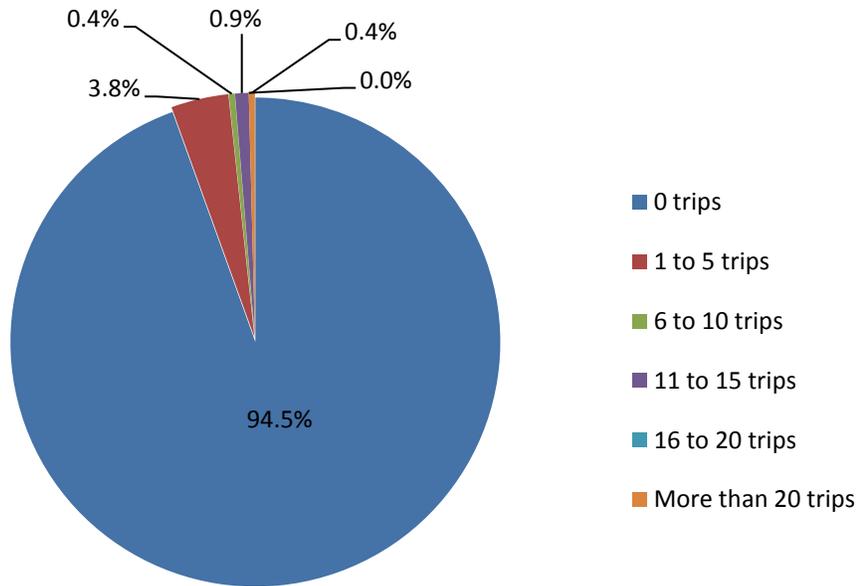
Source: ARTS 2035 LRTP Survey Results.





Figure 22 records the average number of bus trips that respondents take each week, and 94.5 percent report that they do not use the bus at all. To put that in perspective, only nine respondents out of 235 who answered the question said that they took between one and five bus trips per week. Furthermore, only four other respondents answered that they took more than five bus trips.

Figure 22: Average Number of Transit (Bus) Trips per Week



Source: ARTS 2035 LRTP Survey Results.

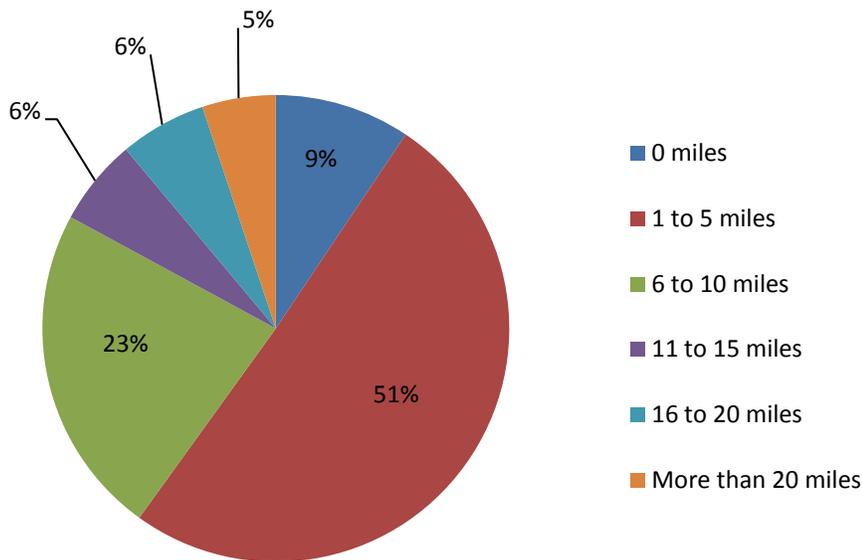




3.4.2 Non-Automotive Transportation Habits

Just over half (51%) of survey participants report walking (recreational and work trips) up to five miles per week and it rises to 74 percent when those who walk up to 10 miles per week are included. **Figure 23** shows the complete breakdown of participants' walking habits by percentage.

Figure 23: Average Number of Miles Walked per Week



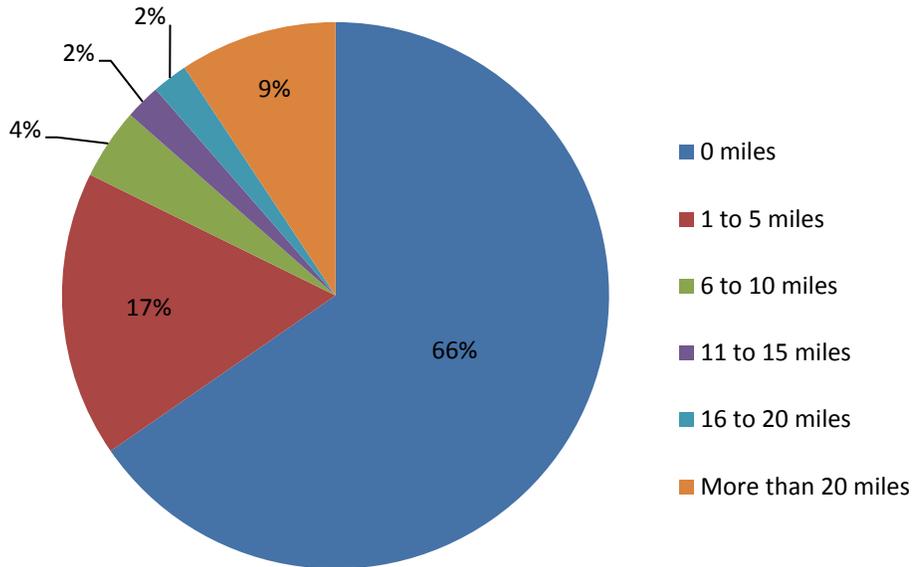
Source: ARTS 2035 LRTP Survey Results.

Bicycle transportation is less frequently used than foot transportation, as seen in **Figure 24**. Of all respondents, 65.3 percent report that they do not bike at all, with the next largest share saying they bike only up to five miles per week (recreational and work trips). Interestingly, the third largest share of respondents—9.3 percent—report that they bike more than twenty miles on average per week (recreational and work trips).





Figure 24: Average Number of Miles Biked per Week



Source: ARTS 2035 LRTP Survey Results.

3.5 Existing System

Generally, satisfaction with the ARTS transportation system seems low. Participants responded most favorably to questions relating to automobiles, a potential trend already identified, and seem most eager to see improvement in transit.

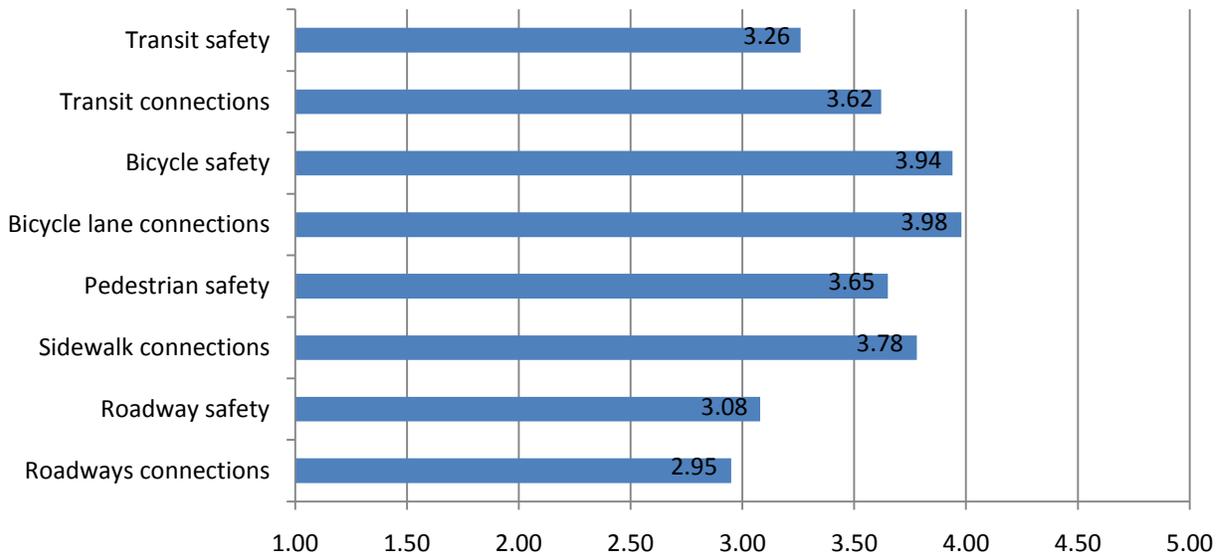
3.5.1 Overall Satisfaction

Survey participants were asked to rank their overall satisfaction with the ARTS system on a scale of one through five, with one being very satisfied, and five being very dissatisfied. As **Figure 25** shows, only the safety and quality of roadway connections received above average positive reviews (as indicated by its line falling short of the 3.00 “Neither Satisfied nor Dissatisfied” marker). Also close to average satisfaction is roadway safety but furthest from average satisfaction are bicycle safety and bicycle lane connections. The latter nearly scored an average of almost four. These attitudes toward bicycle facilities may correlate with respondents’ low or nonexistent bicycle usage.





Figure 25: Overall Satisfaction with ARTS System’s Quality and Safety



Note: 1= Very Satisfied 3 = Neither Satisfied or Dissatisfied 5 = Very Dissatisfied

Source: ARTS 2035 LRTP Survey Results.

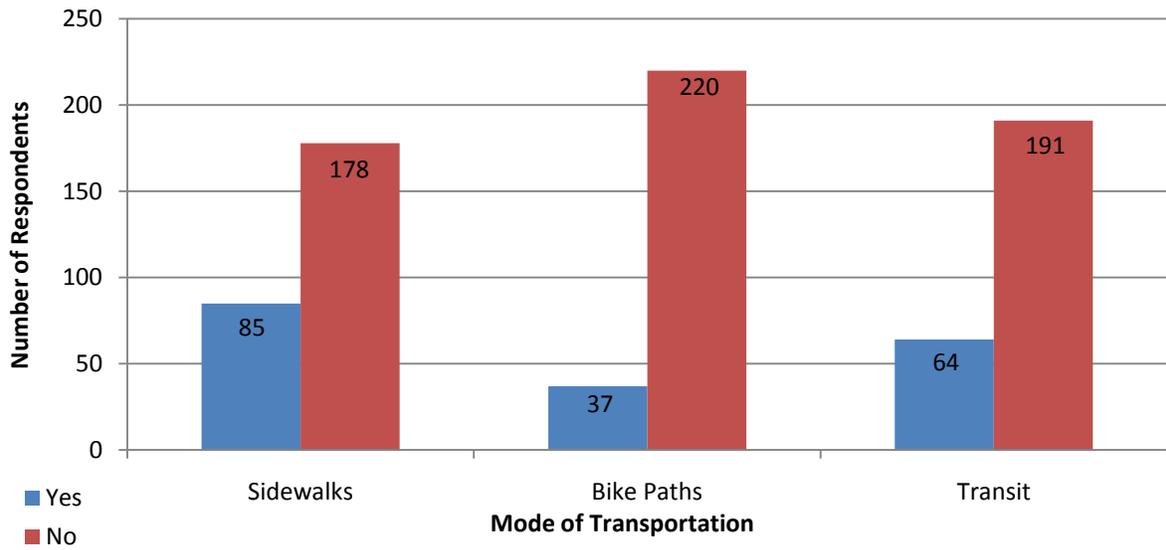
3.5.2 Chosen Modes of Transportation

Although overall satisfaction with the ARTS system tends toward the lower end, examining specific modes of transportation can reveal what factors contribute to that attitude. **Figure 26** shows that the majority of participants felt that they do not have access to sidewalks, bicycle paths, and transit. Because participants feel they do not have access, they may therefore feel that the safety and quality, not to mention availability, of those facilities are unsatisfactory.





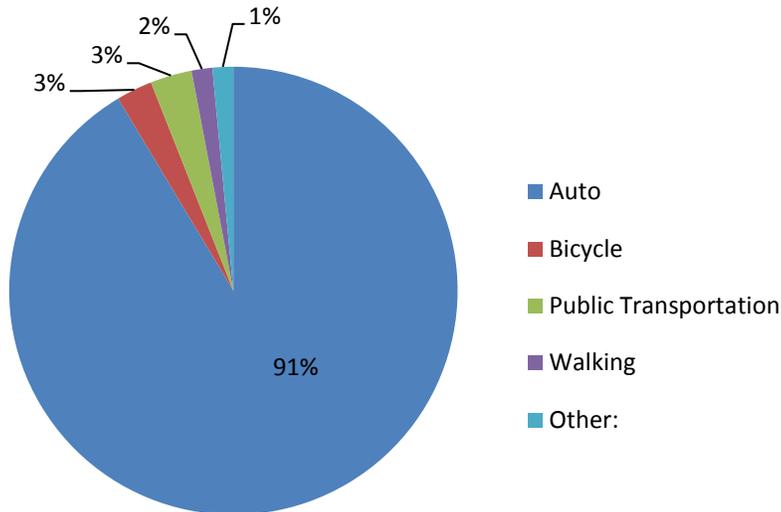
Figure 26: Access to Sidewalks, Bike Paths, and Transit



Source: ARTS 2035 LRTP Survey Results.

A corollary to the availability of sidewalks, bike paths and transit is the respondents' primary mode of transportation. Shown in **Figure 27**, respondents' primary mode of transportation is, almost unsurprisingly, automobiles, constituting 91.5 percent.

Figure 27: Primary Mode of Transportation



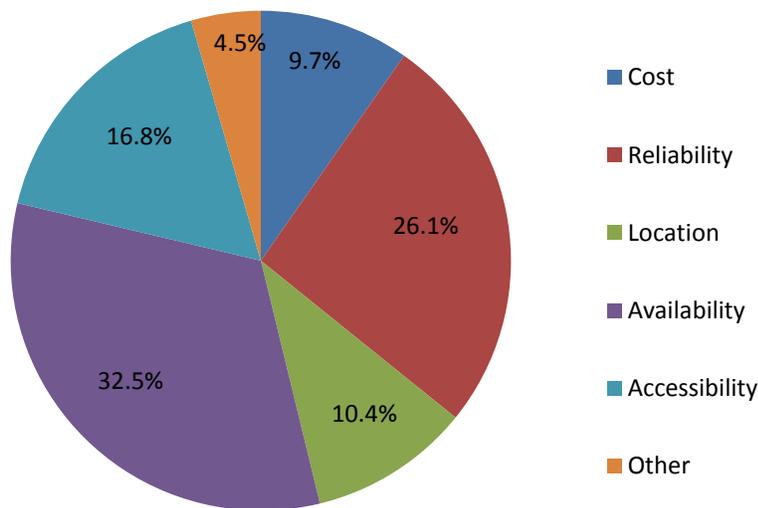
Source: ARTS 2035 LRTP Survey Results.





More telling than merely what the primary mode is, however, is the participants' response to what factor most contributes to their selection of that mode. Availability is the response that makes up the largest portion in **Figure 28**, connected to the observation in **Figure 20** that about three-quarters of respondents have at least one or two cars. However, reliability and accessibility also make up important reasons that individuals choose one mode over another. This could suggest that non-automobile modes of transportation are perceived as less reliable, whether in fact they are or not.

Figure 28: Primary Factor in Selecting a Mode of Transportation



Source: ARTS 2035 LRTP Survey Results.

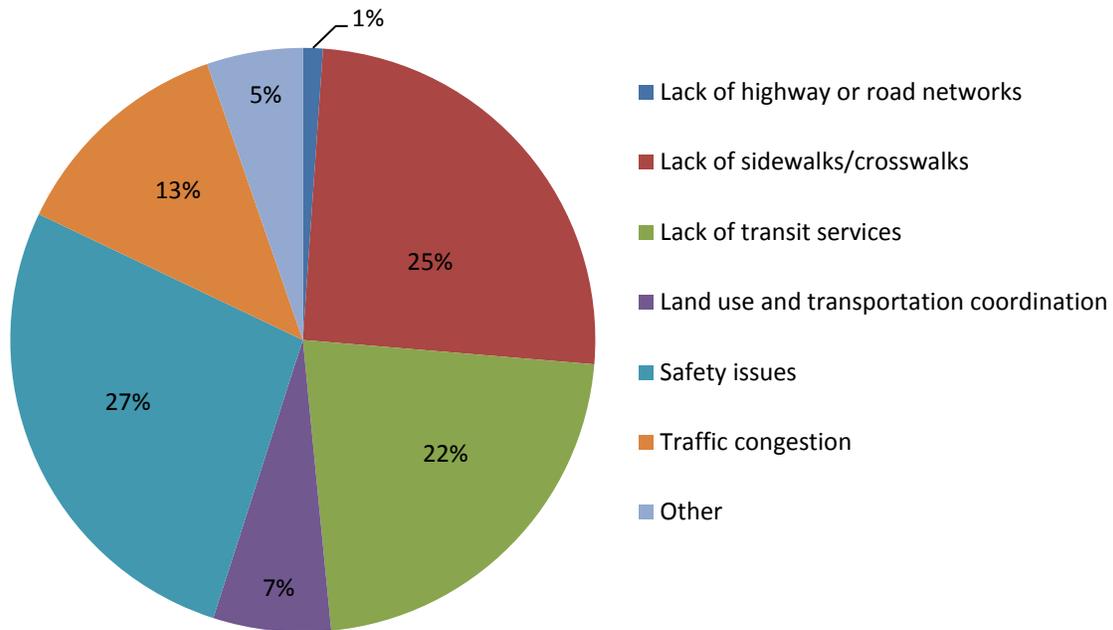
3.5.3 Issues and Concerns

Figure 29 suggests that the ARTS area has a population of astute respondents who are potentially concerned about their level of automobile usage. Lack of sidewalks and crosswalks, lack of transit services, and safety are the three biggest concerns by share of respondents. This may suggest that participants would use alternative transportation if it were better tailored to their needs. Additionally, congestion holds only fourth place as a concern.





Figure 29: Perceived Most Critical Transportation Issue in Neighborhood



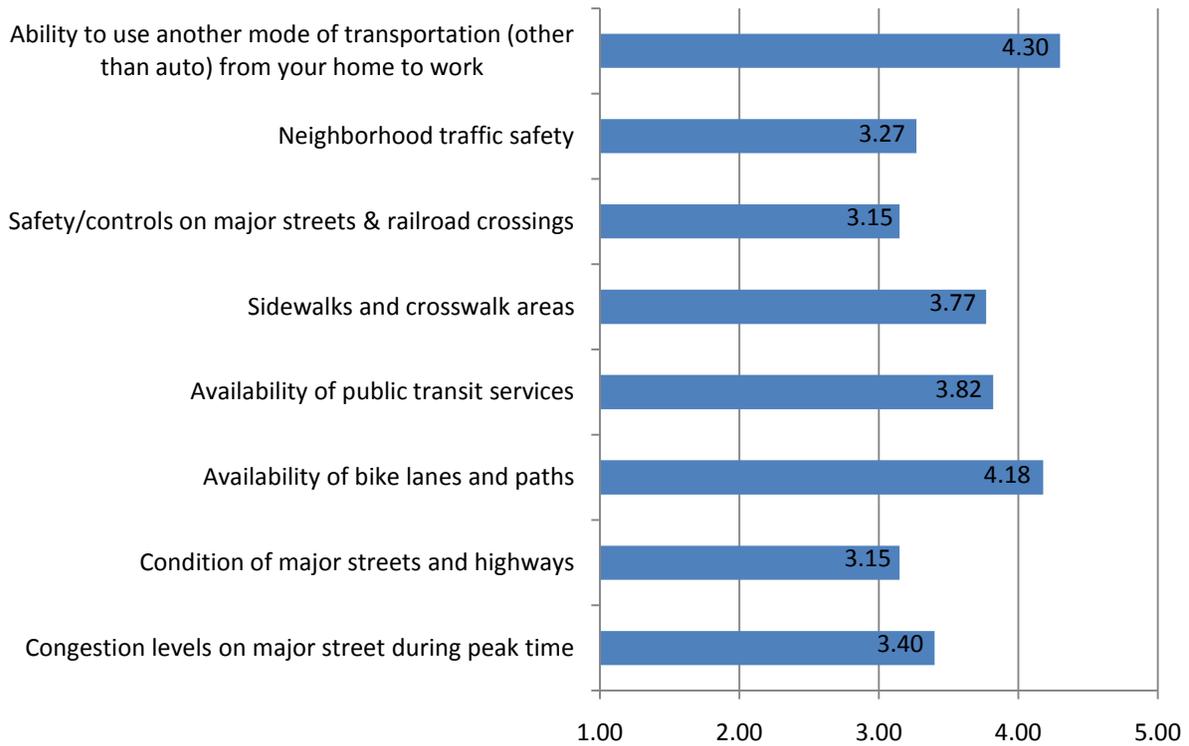
Source: ARTS 2035 LRTP Survey Results.

Figure 29 shows the aforementioned concern about transit availability even more clearly. As with Figure 30, respondents were asked to rank various aspects of the ARTS system on a scale from one to five, where one is high or acceptable. The least acceptable aspect about the ARTS system—the greatest concern—is participants’ inability to use another mode of transportation besides cars to commute to work. Interestingly, the availability of bike lanes scores second among concerns, one of the few times bicycles receive such attention in these survey responses.





Figure 30: Ranking of Concerns about the ARTS Transportation System



Note: 1= Very Satisfied 3 = Neither Satisfied or Dissatisfied 5 = Very Dissatisfied

Source: ARTS 2035 LRTP Survey Results.

3.6 Important Transportation Features

Overall, survey participants perceive ARTS on the whole as an important system.

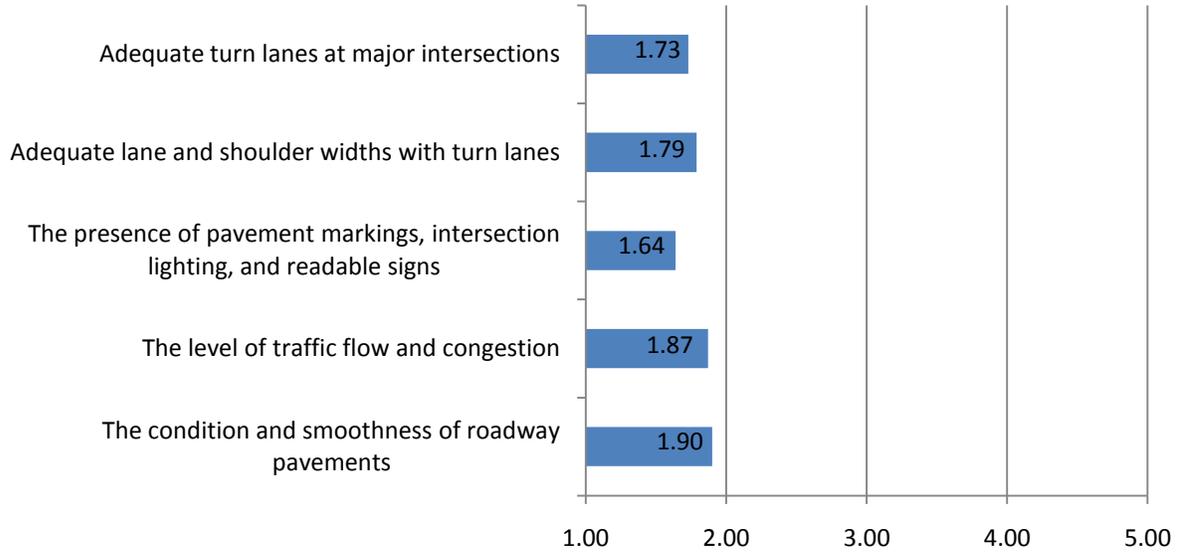
Figure 30 uses the same scale as **Figures 31** and **32**, where one is very important on the one to five scale of importance. **Figure 33** extends this scale to seven, allowing for more room in evaluating important transportation features.





Figure 31 shows that participants regard all elements of ARTS traffic engineering as comparatively important. The presence of pavement markings, intersection lighting, and readable signs scores as most important, but is separated from the least important element—the condition and smoothness of roadway pavements—only by a 15.9 percent difference in response average.

Figure 31: Level of Importance of Traffic Engineering Elements



Note: 1= Very Important 5 = Not Important

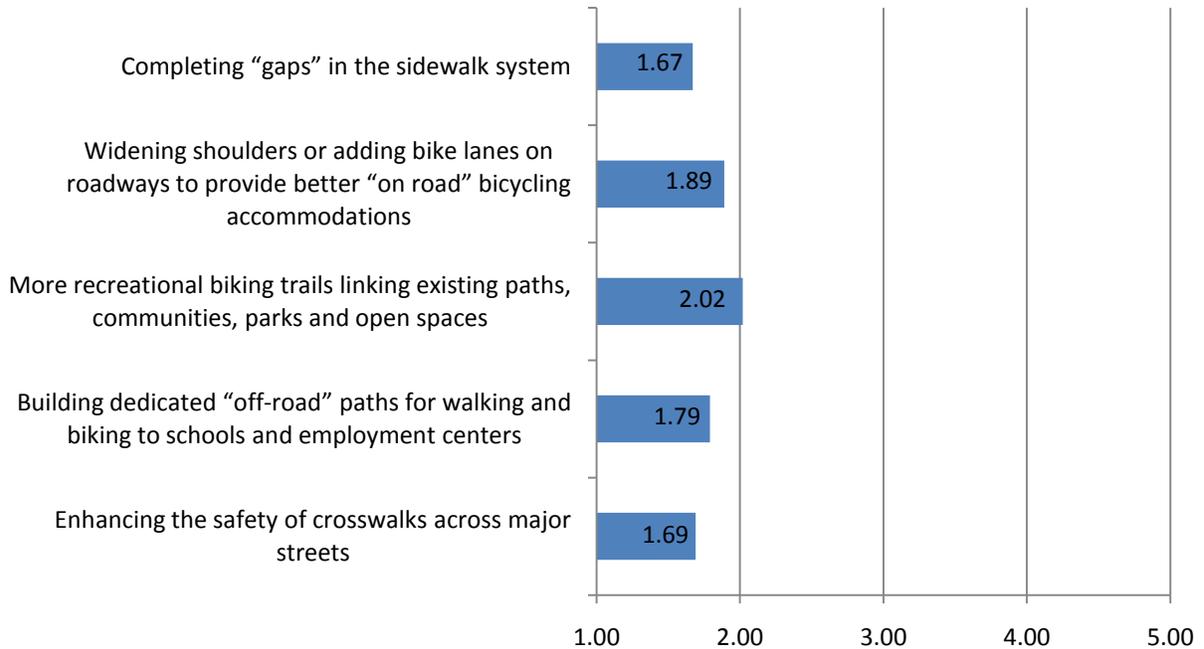
Source: ARTS 2035 LRTP Survey Results.





In **Figure 32**, the slightly lower perceived importance of bicycle features returns, averaging a score of 2.02 among participant responses and taking the slot of least importance among the selected features. However, that score still qualifies as “important,” continuing the participants’ awareness of needing a safe, functional system.

Figure 32: Level of Importance of Bicycle and Pedestrian Features



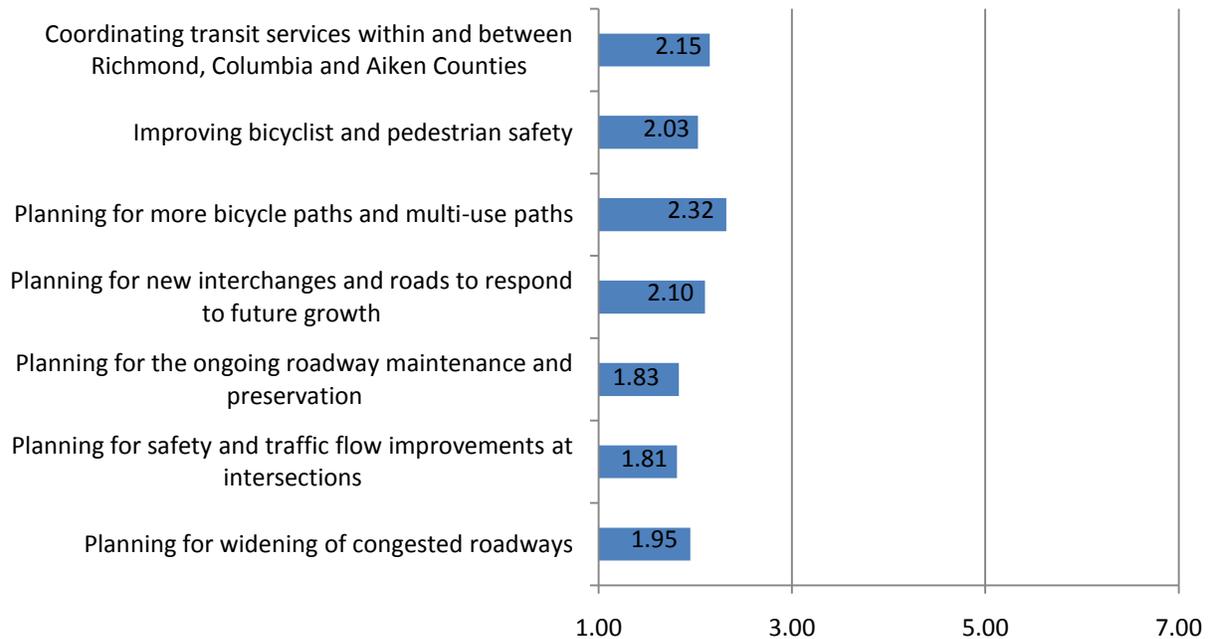
Note: 1= Very Important 5 = Not Important
Source: ARTS 2035 LRTP Survey Results.





As noted, **Figure 33** operates on a different scale than the previous two figures, but the trend remains the same. Planning for more bicycle paths and multi-use paths, though the least important out of the selected elements for the LRTP, is important to survey participants.

Figure 33: Importance of Elements to Be Included in the LRTP



Note: 1= Very Important 7 = Not Important
Source: ARTS 2035 LRTP Survey Results.

3.7 Future Goals and Improvements

Survey participants were asked a series of questions about future goals and improvements for the Augusta-Aiken region. Several types of questions were used in order to capture the best picture of participants' perceptions. Approximately 85 percent of participants answered this series of questions.

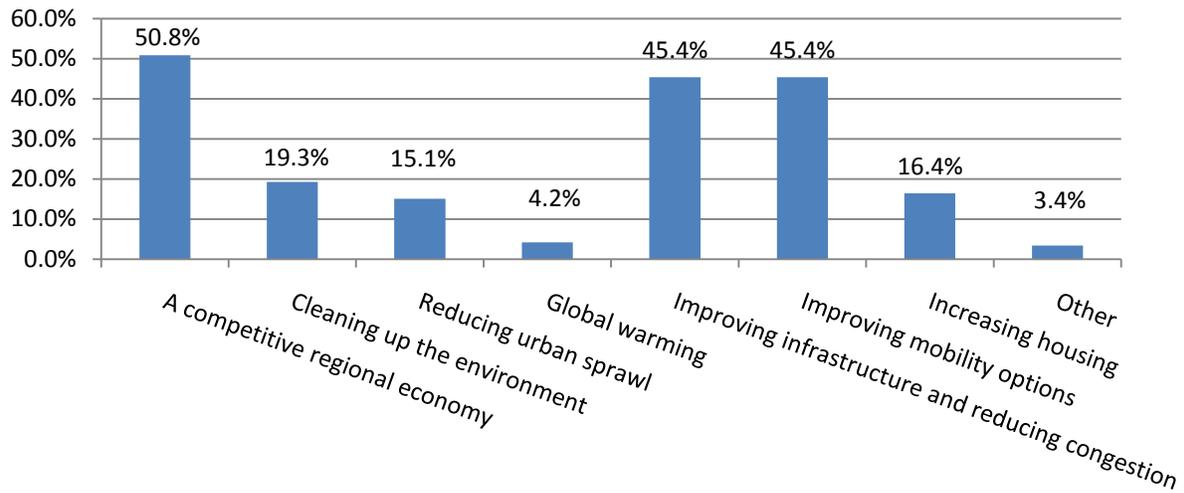
3.7.1 Important Issues and Strategies

In **Figure 34**, survey respondents were asked what they perceived to be the two most important issues facing the region. This identified three issues that received at least twice the percentage of responses as others: building and maintaining a competitive regional economy (the highest scoring), improving infrastructure and reducing congestion, and improving mobility options.





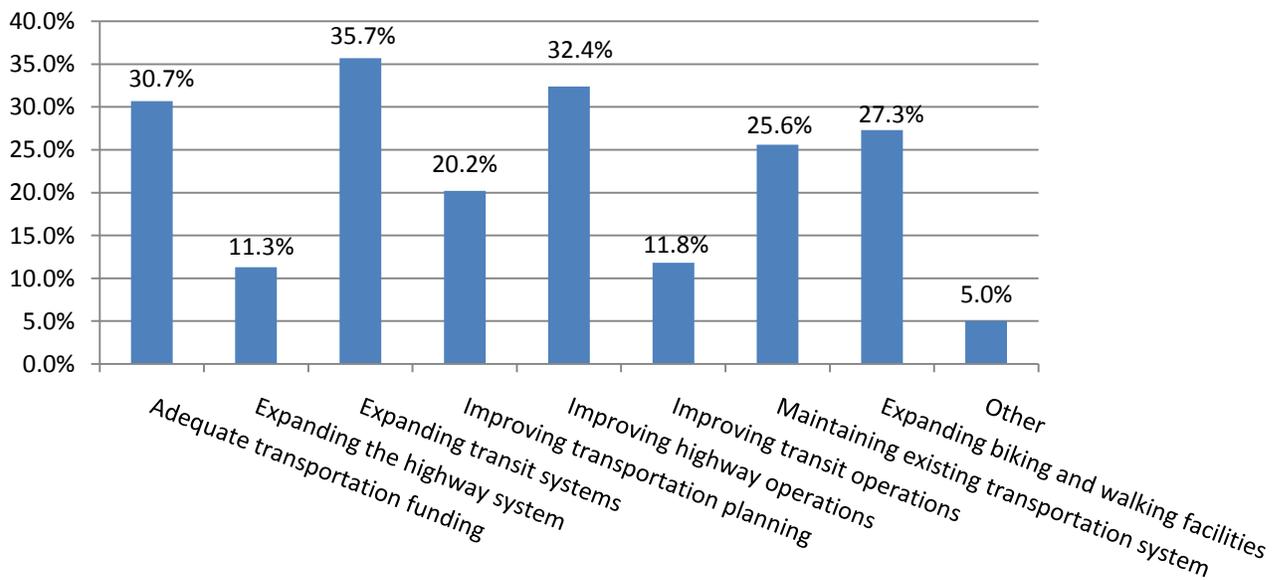
Figure 34: The Two Most Important Issues Facing the Augusta-Aiken Region



Source: ARTS 2035 LRTP Survey Results.

As transportation congestion was identified in **Figure 34** as one of the participants’ top concerns, so **Figure 35** presents their evaluation of how to reduce it. Once more, participants were permitted to select two answers. There is no clear set of leaders in **Figure 35**, though expanding transit systems scored the highest as the most effective way to reduce congestion.

Figure 35: The Most Effective Way to Reduce Transportation Congestion



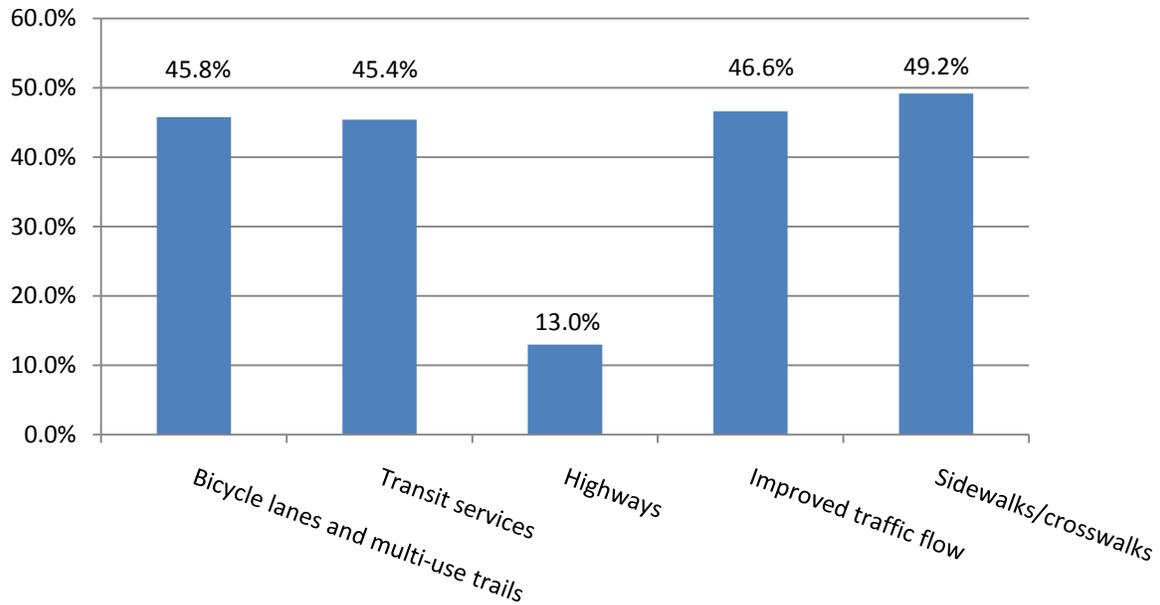
Source: ARTS 2035 LRTP Survey Results.





In **Figure 36**, participants were given the opportunity to select two responses as to those elements of the ARTS system they most desired for the future. Perhaps it is because of the permission for dual responses that bicycle-oriented improvements remained competitively high as compared to other potential improvements. Highways were not seen as a desirable addition to the ARTS system in the future.

Figure 36: Transportation System Elements Desired for the Future



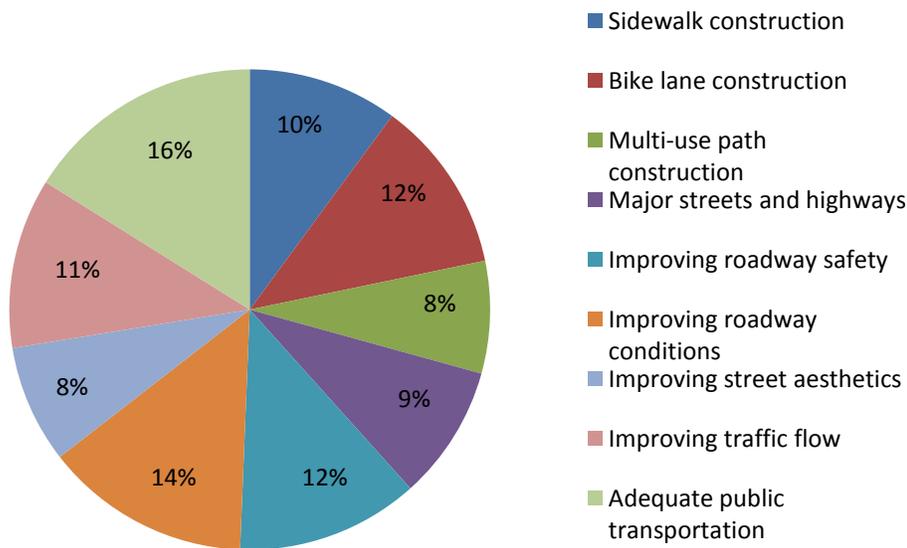
Source: ARTS 2035 LRTP Survey Results.





In a final exercise displayed in **Figure 37**, participants were given 100 points to allocate across nine categories of ARTS improvements. Their average responses have been calculated and expressed as a percentage of total responses, by category. The most significant observation to make is that all responses are about evenly balanced. However, it is also important to note that the highest-scoring category is adequate public transportation. Incidentally, this category received twice as many points allocated to it as multi-use path construction or improving street aesthetics, the lowest-scoring categories.

Figure 37: Allocation of Participants' Responses to Suggested ARTS Improvements



Source: ARTS 2035 LRTP Survey Results.

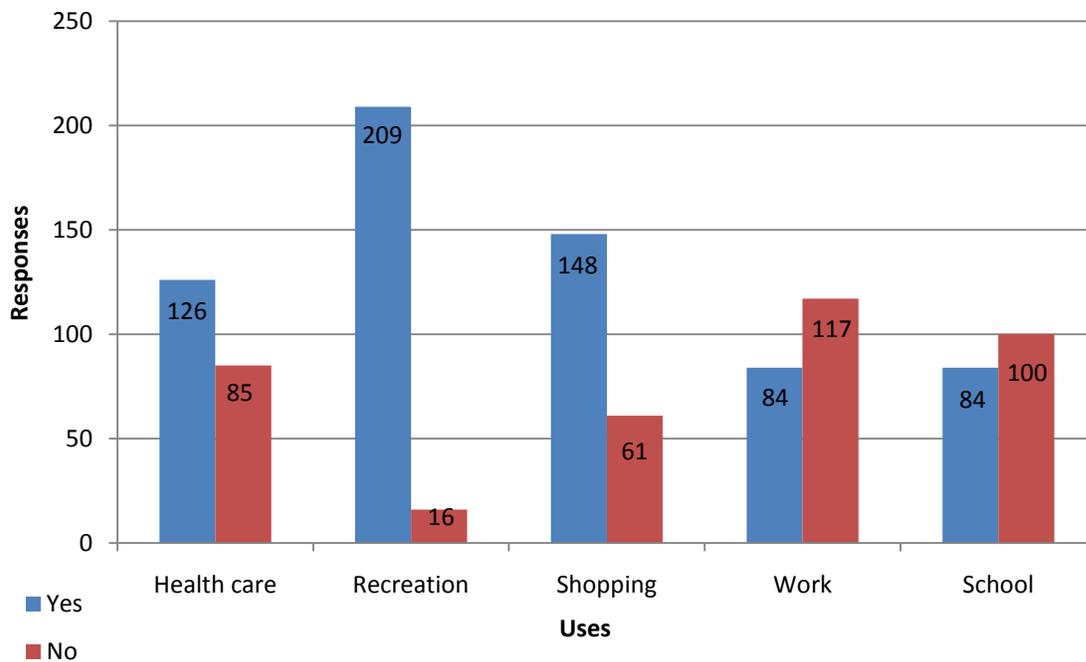




3.7.2 Potential Uses for Future Elements of ARTS

In a final analysis, survey participants were asked four questions about how they would potentially use various elements of the ARTS transportation system. As shown in **Figure 38**, respondents indicated they would use pedestrian walkways most often for health care, recreation and shopping trips. Especially important to note is that the vast majority of respondents (209 to 16) indicate that they would use such walkways for recreation. Perhaps surprisingly, though, more respondents replied that they would not use such walkways for travel to and from school.

Figure 38: Potential Uses for Pedestrian Walkways



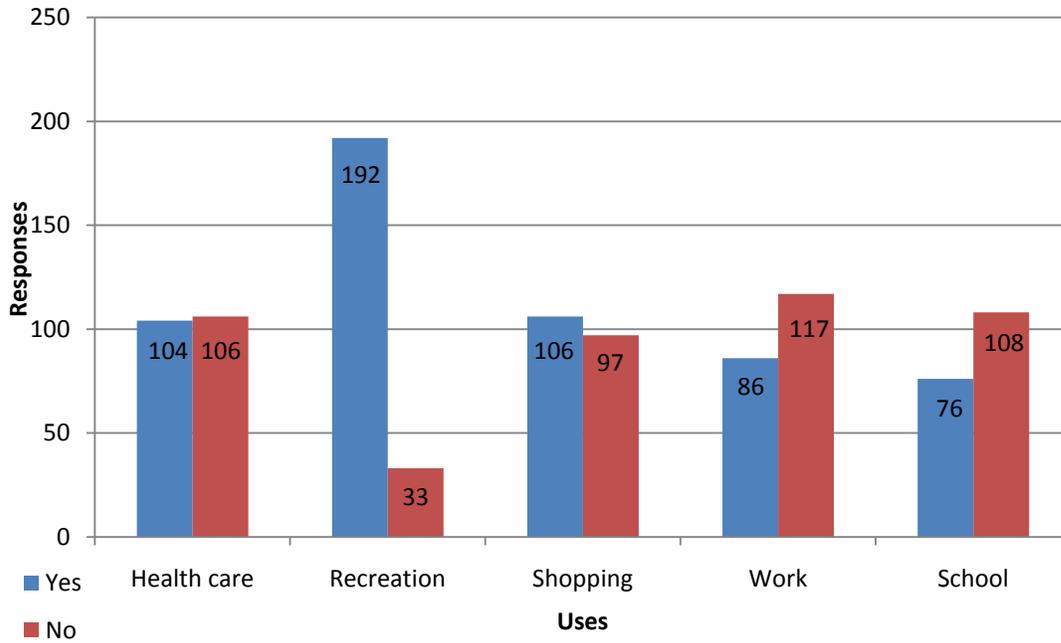
Source: ARTS 2035 LRTP Survey Results.





Figure 39 shows the results of potential uses for dedicated bicycle lanes. A large majority of the respondents noted that they would use dedicated bike lanes for recreational purposes. In fact, some residents would use dedicated bike lanes for all trip purposes noted in **Figure 39**. However, more respondents indicated that that they would not use bicycle lanes for health care, work, or school trips.

Figure 39: Potential Uses for Dedicated Bicycle Lanes



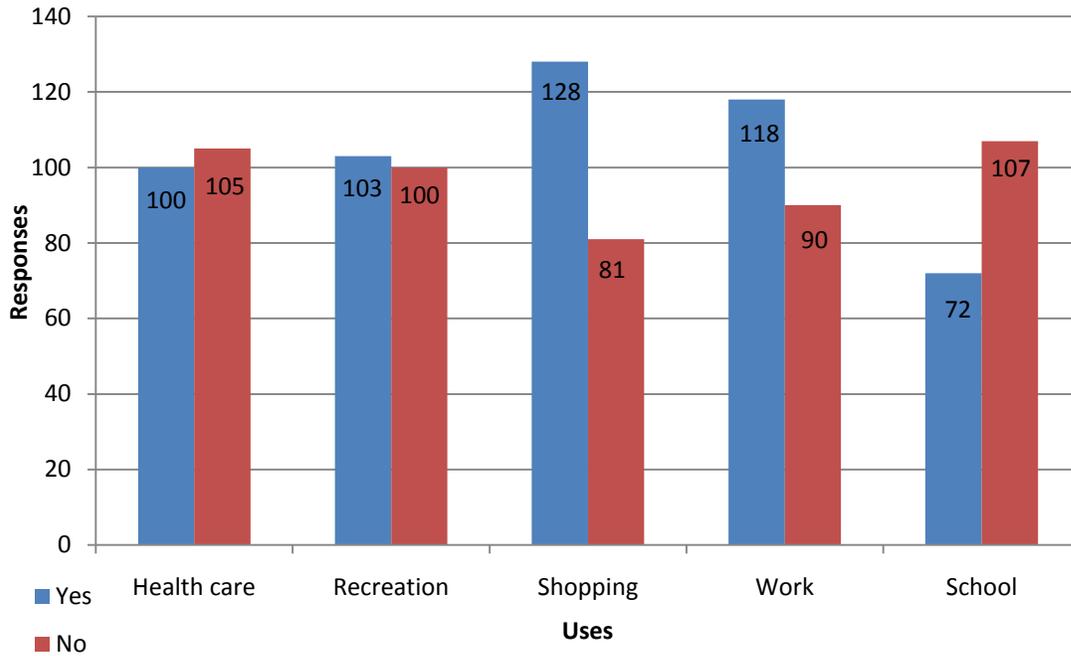
Source: ARTS 2035 LRTP Survey Results.





Figure 40 shows that respondents perceive transit services as most effective for shopping and work trips. This is the first suggested element of the ARTS system that a majority of respondents would use for transportation to and from work.

Figure 40: Potential Uses for Transit Services



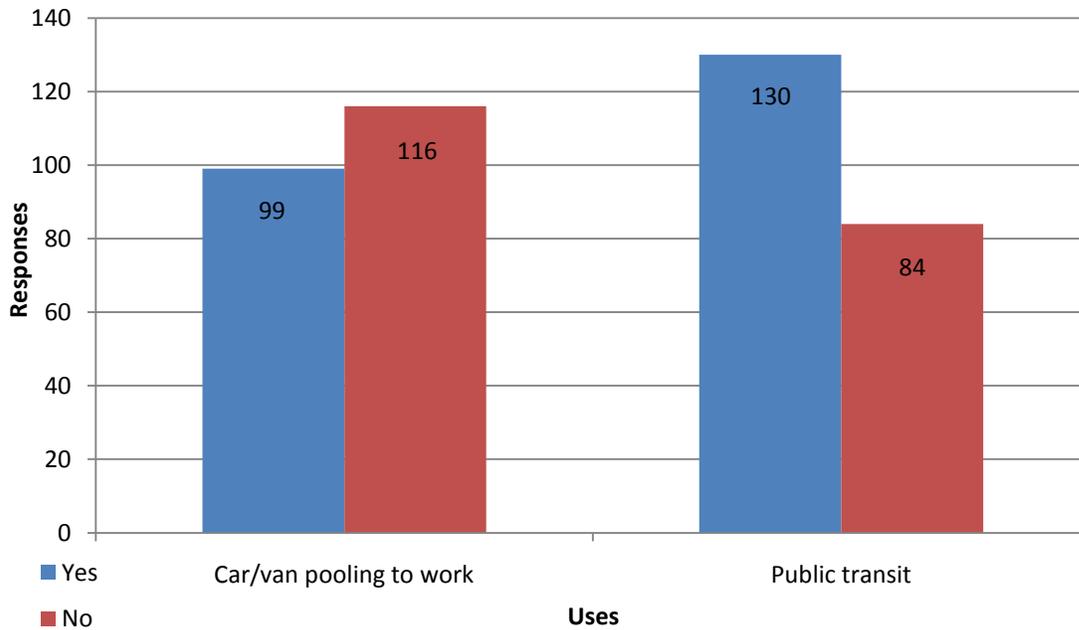
Source: ARTS 2035 LRTP Survey Results.





Figure 41 shows respondents’ attitudes toward park-and-ride lots, with more participants feeling comfortable using such lots for public transit than for car or van pooling to work. However, the car or van pooling responses of yes and no are within 20 responses of each other, suggesting that park-and-ride lots are, overall, favorably perceived.

Figure 41: Potential Uses of Park-and-Ride Lots



Source: ARTS 2035 LRTP Survey Results.

3.8 Conclusions

- Because the majority of survey participants are auto owners in multiple car households, their awareness of automobile travel concerns and common alternatives, such as public transit, is the strongest element of the data. Participants are critical of aspects of the ARTS system that they feel do not meet their automobile travel needs. However, these respondents turn to public transit as a viable alternative, giving it a favorable appraisal throughout their responses. Nevertheless, their current appraisal of the transit system is that it is not sufficient for them to decrease the use of their automobiles.
- Survey participants seem to perceive pedestrian and bicycle facilities as more closely linked to recreation than to other aspects of life. Accordingly, they consistently rank improvements to these facilities below improvements to public transit, generally ranking bicycle improvements below those of pedestrian walkways in order of priority.





- Overall, survey participants seem eager for improvements to the ARTS transportation system, especially improvements that increase the accessibility and reliability of alternative modes of transportation.





4. Goals and Objectives

4.1 Federal Requirements

On August 10, 2005, the new federal transportation bill, SAFETEA-LU, was signed into law. On March 18, 2010, President Obama signed the Hiring Incentives to Restore Employment (HIRE) Act, which extended SAFETEA-LU to December 31, 2010. Under the previous authorizing legislations, the *Intermodal Surface Transportation Efficiency Act* of 1991 (ISTEA) and the *Transportation Equity Act for the 21st Century* of 1998 (TEA-21), Congress demonstrated support for metropolitan transportation planning by emphasizing seven factors that metropolitan planning organizations (MPOs) must consider when developing long range transportation plans.

Amendments under SAFETEA-LU resulted in a total of eight (8) factors to be considered as part of the transportation planning process. Under SAFETEA-LU, transportation security was made a standalone factor, signaling the importance of securing our nation's surface transportation infrastructure from national disasters and terrorism. The environmental factor was expanded to promote consistency between long range transportation plans and planned growth and development in urbanized areas. SAFETEA-LU states that the metropolitan transportation planning process shall be continuous, cooperative, and comprehensive, and provide for consideration and implementation of projects, strategies, and services that will address the following eight (8) factors:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.
- Increase the safety of the transportation system for motorized and non-motorized users.
- Increase the security of the transportation system for motorized and non-motorized users.
- Increase the accessibility and mobility options available to people and for freight.
- Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between improvements and state and local planned growth and economic development patterns.
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
- Promote efficient system management and operation.





- Emphasize the preservation of the existing transportation system.¹⁹

Federal policy in developing long range transportation plans also extends to Title VI of the Civil Rights Act, the Americans with Disabilities Act, and the President's Executive Order 12898 on Environmental Justice, all of which are addressed in the ARTS 2035 LRTP.

The Augusta-Aiken MPO faces a wide range of transportation planning requirements, some of which may place competing demands on priorities for inclusion in the LRTP. **Figure 42** shows the numerous planning requirements that must be addressed by the MPO during the development of the ARTS 2035 LRTP. The illustration shows the eight federal planning factors that must be considered in developing the LRTP and surrounding these factors are other planning requirements. Developing the ARTS 2035 LRTP is much different than the process used to develop past LRTPs due to the following reasons:

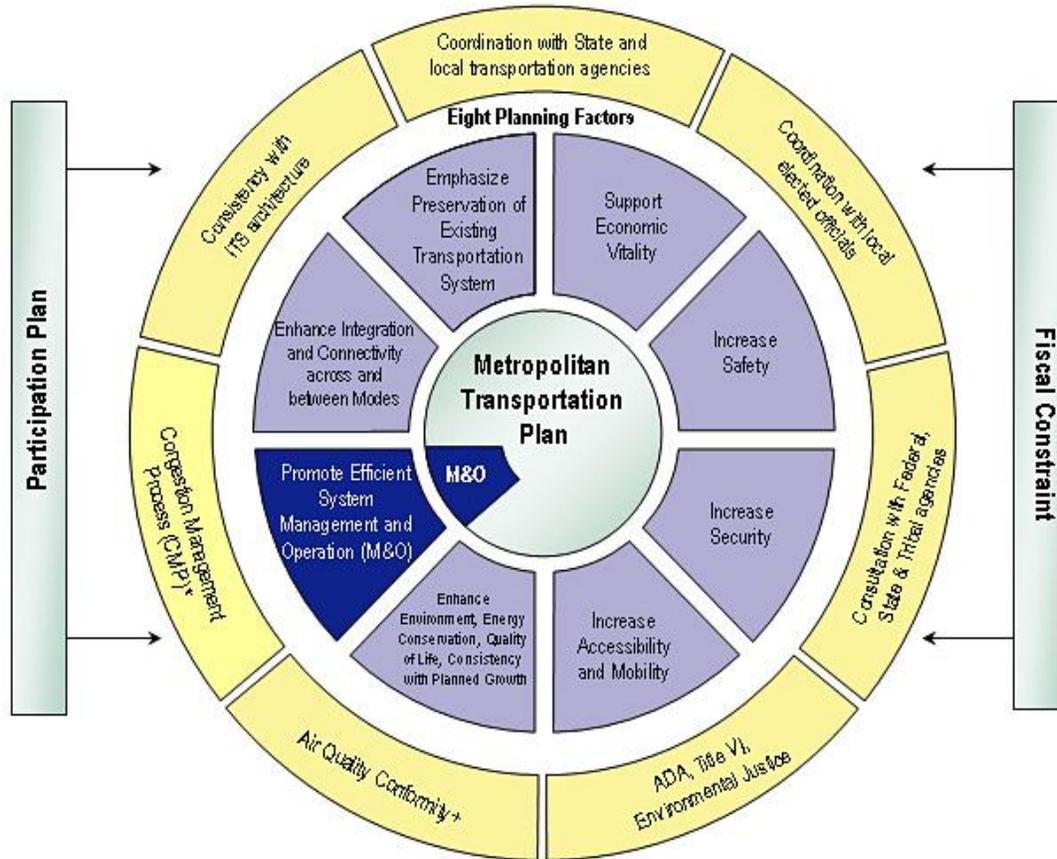
- Regional efforts to manage and operate existing transportation systems are becoming more important due to rapidly increasing congestion.
- Funding and environmental constraints on highway capacity expansion.
- Growing need to provide connectivity, interdependency and operational impacts across all modes.

¹⁹ SAFETEA-LU section 450.306(a)(5).





Figure 42: LRTP Planning Requirements



*Required for TMAs
+Required for nonattainment and maintenance areas

Source: Management & Operations in the Metropolitan Transportation Plan: A Guidebook for Creating an Objectives-Driven, Performance-Based Approach, U.S. DOT, FHWA, FTA, September 17, 2007.

4.2 South Carolina Act 114

In 2007, the South Carolina General Assembly enacted Act 114, which requires MPOs to follow legislative guidance on prioritizing transportation projects. Act 114 provides a statewide framework for evaluating road widening, intersection improvements, and new facilities, based on legislative guidance. SCDOT maintains a statewide list of ranked widening and new-location roadway projects using criteria consistent with Act 114. The statewide list provides a uniform process for evaluating project priorities and is for informational purposes only; projects compete only with others within each respective urban or rural region. MPOs have the discretion of using the statewide list to establish local priorities or they may use commission-approved criteria consistent with Act 114, in addition to other criteria that address local desires and concerns related to transportation improvements. The following provides the statewide legislative





guidance for prioritizing roadway widening and intersection improvements as outlined in Act 114:

4.2.1 Statewide Roadway Widening Improvements

- **Financial Viability** – considered as a quantifiable criterion based on estimated project cost and estimated twenty-year maintenance cost in relation to the current vehicle miles of travel.
- **Public Safety** – considered as a quantifiable criterion based on crash data.
- **Potential for Economic Development** – considered as a quantifiable criterion based on an assessment of short-term, intermediate, and long-term development potential as a result of the proposed improvement.
- **Traffic Volume and Congestion** – considered as a quantifiable criterion based on current traffic volumes and the associated level-of-service condition.
- **Truck Traffic** – considered as a quantifiable criterion based on current volume and average daily truck traffic estimates.
- **Pavement Quality Index** – considered as a quantifiable criterion based on pavement condition assessments.
- **Environmental Impact** – considered as a quantifiable criterion based on an assessment of potential impacts to natural, social, and cultural resources.
- **Alternative Transportation Solutions** – considered independently of ranking process. Transit propensity is evaluated based on surrounding population and employment characteristics to support transit service as a potential alternative mode of transportation or in addition to a proposed improvement.
- **Consistency with Local Land Use Plans** – considered independently of ranking process. A determination of consistency was made during the long-range plan development process. Similarly, intersection improvements criteria from the statewide level may be used as a basis for establishing project rankings.

4.2.2 Statewide Intersection Improvements

- **Public Safety** – considered as a quantifiable criterion based on accident data.
- **Potential for Economic Development** – considered as a quantifiable criterion based on an assessment of short-term, intermediate, and long-term development potential as a result of the proposed improvement.
- **Traffic Volume and Congestion** – considered as a quantifiable criterion based on current traffic volumes.
- **Truck Traffic** – considered as a quantifiable criterion based on current volume and average daily truck traffic estimates.
- **Environmental Impact** – considered as a quantifiable criterion based on an assessment of potential impacts to natural, social, and cultural resources.





- **Traffic Status** – considered as a quantifiable criterion based on an assessment of the intersections functionality and operational characteristics.
- **Financial Viability** – considered independently of ranking.
- **Pavement Quality Index** – considered independently of ranking.
- **Alternative Transportation Solutions** – considered independently of ranking process.
- **Consistency with Local Land Use Plans** – considered independently of ranking process.

4.2.3 Statewide New Facility Improvements

- **Traffic Volume and Congestion** – considered as a quantifiable criterion based on a comparison of network hours of delay between build and no-build scenarios.
- **Economic Development** – considered as a quantifiable criterion based on an assessment of short-term, intermediate, and long-term development potential as a result of the proposed improvement.
- **Environmental Impact** – considered as a quantifiable criterion based on an assessment of potential impacts to natural, social, and cultural resources.
- **Financial Viability** – considered as a quantifiable criterion based on estimated project cost and estimated twenty-year maintenance costs in relation to current vehicle miles of travel.
- **Alternative Transportation Solutions** – considered independently of ranking.
- **Consistency with Local Land Use Plans** – considered independently of ranking.

During the development of the ARTS 2035 LRTP, the Aiken County Transportation Coordinating Subcommittee developed the following Act 114 compliant rankings for widening projects (**Table 9**), intersection projects (**Table 10**), and new construction projects (**Table 11**). The maximum score a project can receive is 100 points and the higher the points, the higher the priority. The data required to prioritize South Carolina projects was provided by travel demand model outputs, traffic counts, crash data, planning level cost estimates, aerial and field collection, and state and local agency staff. Georgia does not have any legislative requirements on prioritizing transportation projects, but there were overall project prioritization criteria, such as the goals and objectives, that helped guide project implementation.





Table 9: Aiken County Road Widening Project Prioritization Process

Criteria	Score	Aiken Methodology
Traffic Volume and Congestion	30%	A maximum of 30 points will be awarded based on the projected congestion rate sliding scale.
Public Safety	10%	A maximum of 10 points will be awarded based on crash data (fatalities, injuries, and property damage) from the SCDOT Public Safety Office and traffic volume.
Financial Viability	14%	A maximum of 14 points will be awarded, based on cost per vehicle mile, including maintenance costs and resurfacing costs. Project cannot exceed 5-years of federal Guide Share unless the project can funded through other sources and can be phased.
Potential for Economic Development	10%	A maximum of 10 points will be awarded based on SC Department of Commerce (50%) short-term, intermediate, and long-term development score as a result of the proposed improvement. Local review includes job creation, increased assessed property value and increased retail sales tax (50%).
Truck Traffic	8%	A maximum of 8 points will be awarded based on estimated average daily truck traffic volume.
Pavement Quality Index	6%	A maximum of 6 points will be awarded based on the SCDOT Pavement Quality Index score.
Environmental Impact	10%	A maximum of 10 points will be awarded based on 22 environmental criteria.
Livability	12%	A maximum of 12 points will be awarded based on the project increasing accessibility, connectivity, and mobility.
Alternative Transportation Solutions	Yes/No	Documented and considered for each project, points not assigned.
Serves to Implement Comprehensive Plan	Yes/No	Project must support Comprehensive Plan
Serves to Implement LRTP	Yes/No	Project must be in LRTP
TOTAL	100%	





Table 10: Aiken County Road Intersection Project Prioritization Process

Criteria	Score	Aiken Methodology
Traffic Volume and Congestion	25%	A maximum of 25 points will be awarded based on the growth between the current AADT and future AADT.
Public Safety	20%	A maximum of 20 points will be awarded based on crash data (fatalities, injuries, and property damage) from the SCDOT Public Safety Office and traffic volume.
Traffic Status	20%	A maximum of 20 points will be awarded based on assessment of the intersections functionality and operational characteristics.
Truck Traffic	10%	A maximum of 10 points will be awarded based on current volume and average daily truck traffic estimates.
Potential for Economic Development	7%	A maximum of 7 points will be awarded based on SC Department of Commerce (50%) short-term, intermediate, and long-term development score as a result of the proposed improvement. Local review includes job creation, increased assessed property value and increased retail sales tax (50%).
Environmental Impact	8%	A maximum of 8 points will be awarded based on 22 environmental criteria.
Livability	10%	A maximum of 10 points will be awarded based on the project increasing accessibility, connectivity, and mobility.
Financial Viability	Not Ranked	Documented and considered for each project, points not assigned.
Pavement Quality Index	Not Ranked	Documented and considered for each project, points not assigned.
Alternative Transportation Solutions	Not Ranked	Documented and considered for each project, points not assigned.
Serves to Implement Comprehensive Plan	Not Ranked	Documented and considered for each project, points not assigned.
TOTAL	100%	





Table 11: Aiken County New Construction Project Prioritization Process

Criteria	Score	Aiken Methodology
Financial Viability and Maintenance Cost	15%	A maximum of 15 points will be awarded based on cost per vehicle mile, including maintenance costs and resurfacing costs. Project cannot exceed 5-years of federal Guide Share unless the project can be funded through other sources and can be phased.
Potential for Economic Development	20%	A maximum of 20 points will be awarded based on SC Department of Commerce (50%) short-term, intermediate, and long-term development score as a result of the proposed improvement. Local review includes job creation, increased assessed property value and increased retail sales tax (50%).
Traffic Volume and Congestion	40%	A maximum of 40 points will be awarded based on by calculating the average level of service change to existing roadway facilities.
Environmental Impact	15%	A maximum of 15 points will be awarded based on 22 environmental criteria.
Livability	10%	A maximum of 10 points will be awarded based on the project increasing accessibility, connectivity, and mobility.
Alternative Transportation Solutions	Yes/No	Documented and considered for each project, points not assigned.
Serves to Implement Comprehensive Plan	Yes/No	Project must support Comprehensive Plan.
Serves to Implement LRTP	Yes/No	Project must be in LRTP.
Improves Air Quality	Not Ranked	Documented and considered for each project, points not assigned.
TOTAL	100%	





4.3 Goals and Objectives

Outlining goals is the LRTP is a necessity. By definition, a goal is the end toward which effort is directed. Such goals should improve safety, traffic operations, and mobility for all residents. LRTP goals must be comprehensive in that they must address the eight planning factors identified in SAFETEA-LU.

To address ARTS’s short- and long-term multimodal transportation needs, seven goals were developed during the LRTP process. The ARTS 2030 LRTP identified four goals, and during the 2035 LRTP update, three additional goals were developed based on consultation with MPO staff, Advisory Committee members, and local residents.

Figures 43 to 49 show the goals and objectives that were presented at Advisory Committee meetings, Public Participation meetings, and Environmental Justice meetings during the LRTP process. The multimodal transportation improvements identified during the 2035 LRTP process were reviewed against these goals and objectives to ensure the 2035 LRTP is consistent with and supports these locally-driven measures.

Figure 43: Goal #1 and Objectives

ARTS 2035 LRTP
Goals and Objectives

GOAL 1: Develop a Transportation System Integrated with Planned Land Use

- **OBJECTIVE 1:** Promote orderly development of the region by providing transportation services to those areas where growth is planned.
- **OBJECTIVE 2:** Discourage development in conservation or preservation areas by limiting access to those areas.
- **OBJECTIVE 3:** Promote revitalization of the urban core through improved accessibility.
- **OBJECTIVE 4:** Promote redevelopment of the urban fringe through improved accessibility.





Figure 44: Goal #2 and Objectives

ARTS 2035 LRTP Goals and Objectives

GOAL 2: Develop a Transportation System that is Financially and Politically Feasible and has Broad Support

- **OBJECTIVE 1:** Provide a financially balanced plan based on realistic funding availability and opportunities.
- **OBJECTIVE 2:** Provide a plan that works to preserve existing facilities and operate them more efficiently.
- **OBJECTIVE 3:** Prepare a plan where total benefits exceed costs.
- **OBJECTIVE 4:** Provide a plan that includes public participation from all groups, with special emphasis in reaching environmental justice populations.

Figure 45: Goal #3 and Objectives

ARTS 2035 LRTP Goals and Objectives

GOAL 3: Develop a Transportation System that will allow Effective Mobility Throughout the Region and Provide Efficient Movement of Persons and Goods

- **OBJECTIVE 1:** Provide a plan that works to relieve congestion and prevent it in the future.
- **OBJECTIVE 2:** Provide a transportation plan that realizes the importance of public transportation as a viable option in meeting daily travel needs.
- **OBJECTIVE 3:** Provide a plan which positions public transportation as a viable alternative to single occupant vehicles, through routing and scheduling changes and other system improvements.
- **OBJECTIVE 4:** Provide a plan which addresses consideration of non-motorized modes such as bicycles and pedestrians.
- **OBJECTIVE 5:** Provide a plan which addresses the needs of intermodal movement of goods via rail and truck.





Figure 46: Goal #4 and Objectives

ARTS 2035 LRTP Goals and Objectives

GOAL 4: Develop a Transportation System that will Enhance the Economic, Social, and Environmental Fabric of the Area, Using Resources Wisely While Minimizing Adverse Impacts

- **OBJECTIVE 1:** Provide a plan that increases job accessibility through improved transportation systems.
- **OBJECTIVE 2:** Provide a plan that ensures that new transportation facilities result in disruption or displacement of residential or commercial areas only when the benefits to the community at large outweigh the costs and where no viable alternative exists.
- **OBJECTIVE 3:** Provide a plan that works to ensure that transportation facilities avoid historic areas and structures, and other environmentally sensitive areas, while providing access when desired.
- **OBJECTIVE 4:** Provide a plan to enhance the appearance of transportation facilities whenever possible.
- **OBJECTIVE 5:** Provide a plan that reduces mobile emissions and meets air quality standards.

Figure 47: Goal #5 and Objectives

ARTS 2035 LRTP Goals and Objectives

GOAL 5: Promote efficient land use and development patterns to improve safety and economic vitality to meet existing and future multimodal transportation needs.

- **OBJECTIVE 1:** Promote the concentration of future employment and other activity centers along existing and planned major travel corridors.
- **OBJECTIVE 2:** Protect adequate rights-of-way in newly developing and redeveloping areas for pedestrian, bicycle, transit and roadway facilities.
- **OBJECTIVE 3:** Promote new developments that provide efficient, balanced movement of pedestrians, bicyclists, buses and motor vehicles within, to and through the area.
- **OBJECTIVE 4:** Preserve and enhance the natural and built environments through context sensitive solutions that exercise flexibility and creativity to shape effective transportation solutions.





Figure 48: Goal #6 and Objectives

ARTS 2035 LRTP Goals and Objectives

GOAL 6: Increase the safety and security of the transportation system for motorized and nonmotorized users.

- **OBJECTIVE 1:** Identify policies, plans, and transportation improvements that address unsafe designs and conditions to increase safety for users.
- **OBJECTIVE 2:** Develop and maintain a transportation system that provides increased security for all of its users.

Figure 49: Goal #7 and Objectives

ARTS 2035 LRTP Goals and Objectives

GOAL 7: Continue to develop a multimodal transportation network that utilizes strategies for addressing congestion management and air quality issues in the ARTS region.

- **OBJECTIVE 1:** Promote street networks that reduce travel delays in accordance with the guidelines in the ARTS Congestion Management Plan.
- **OBJECTIVE 2:** Encourage strategies that reduce mobile source emissions in an effort to improve air quality.
- **OBJECTIVE 3:** Continue to implement and promote strategies and policies such as system preservation, access management, managed lanes, travel demand management, mass transit, complete streets, and alternative transportation to improve congestion conditions.
- **OBJECTIVE 4:** Make the best use of existing transportation facilities by implementing measures that actively manage and integrate systems, improve traffic operations and safety, provide accurate real-time information and reduce the demand for single-occupant motor vehicle travel.





As shown in **Table 12**, the eight SAFETEA-LU planning factors are addressed by the ARTS 2035 LRTP goals.

Table 12: ARTS Goals and Federal Planning Factors

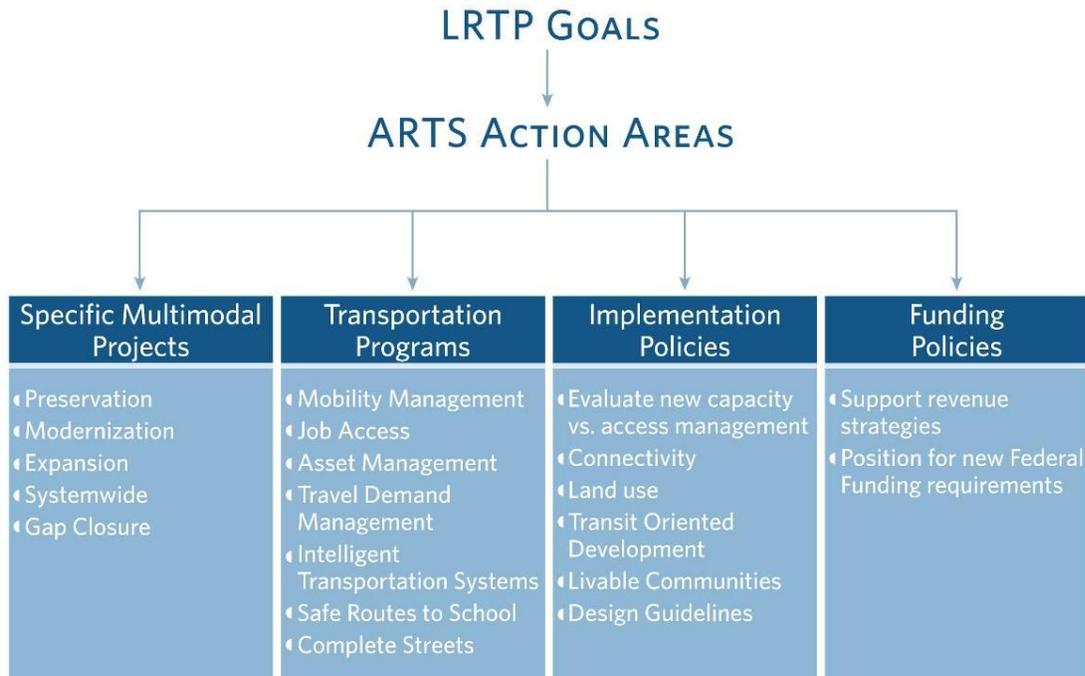
ARTS 2035 Goals	Related SAFETEA-LU Planning Factor
Goal 1 – Develop a Transportation System Integrated with Planned Land Use	Planning Factors 1, 4, and 6
Goal 2 – Develop a Transportation System that is Financially and Politically Feasible and has Broad Support	Planning Factors 1, 5, and 8
Goal 3 – Develop a Transportation System that will allow Effective Mobility Throughout the Region and Provide Efficient Movement of Persons and Goods	Planning Factors 1, 4, 6, 7, and 8
Goal 4 – Develop a Transportation System that will Enhance the Economic, Social, and Environmental Fabric of the Area, Using Resources Wisely While Minimizing Adverse Impacts	Planning Factors 5 and 6
Goal 5 – Promote efficient land use and development patterns to improve safety and economic vitality to meet existing and future multimodal transportation needs	Planning Factors 2, 3, and 8
Goal 6 – Increase the safety and security of the transportation system for motorized and non-motorized users	Planning Factors 2 and 3
Goal 7 – Continue to develop a multimodal transportation network that utilizes strategies for addressing congestion management and air quality issues in the ARTS region	Planning Factors 1, 5, and 7





As shown in **Figure 50**, the ARTS 2035 LRTP goals and objectives can be achieved by implementing activities in four action areas: Multimodal Projects, Transportation Programs, Implementation Policies, and Funding Policies.

Figure 50: LRTP Goals and Action Items



4.4 Specific Multimodal Projects

The ARTS area contains a vast highway system that provides local and regional connectivity. One of the first priorities of the LRTP is to protect and preserve the existing highway system to ensure these existing infrastructure assets are maintained. Preservation activities that protect the existing infrastructure and extend service life include the following activities:

- Roadway resurfacing
- Pavement markings
- Signal maintenance
- Guardrail/joint replacement
- Bridge painting
- Bridge expansion joint replacement
- Minor bridge deck repairs
- Transit bus replacement
- Maintenance facility repairs/upgrades
- Intelligent Transportation Systems (ITS) components
- Sidewalk and trail repairs





Modernizing the existing system is also an important aspect of developing an LRTP. Modernization improvements are related to upgrading the safety, functionality, and overall operational efficiency of a facility or service without adding major physical capacity. These improvements include the following:

- Minor widening of narrow lanes
- Bridge widening, rehabilitation, and replacement
- Access management/traffic flow/safety improvements
- Railroad/highway grade crossings, track and signal upgrades
- ADA improvements
- Most ITS improvements

Expanding the existing multimodal transportation system is another action that improves travel efficiency and mobility. Expansion activities are generally focused on adding capacity or new facilities/services and include the following improvements:

- Adding new highway lanes
- Reconstruction with more lanes
- New highways
- New transit vehicles and related equipment
- New airport construction
- Runway lengthening
- New transit facilities
- Facilities for new regional rail or bus rapid transit
- New passenger rail infrastructure (signals, track, yard facilities, and stations)
- Sidewalk, bicycle lane, and multi-use trail construction

The preservation, modernization, and expansion activities and improvements identified in the 2035 LRTP are implemented **system-wide** across all transportation modes. This includes an evaluation of “**gaps**” in the multimodal transportation system. Providing a seamless highway, bicycle, pedestrian, and transit system improves mobility options for all residents. The 2035 LRTP identify strategic gaps in that multimodal system that prevent or discourage local residents from using a certain mode of transportation.





4.5 Transportation Programs

There are numerous transportation programs that were be evaluated during the 2035 LRTP process that address safety, mobility, and congestion.

Mobility Management reinforces the value of partnerships and alliances and it encompasses the design and management of the transportation infrastructure so that the services developed can perform effectively and efficiently.

The federal **Job Access and Reverse Commute (JARC)** program was established to address the unique transportation challenges faced by welfare recipients and low-income persons seeking to obtain and maintain employment. Many entry-level jobs are located in suburban areas, and low-income individuals have difficulty accessing these jobs from their inner city, urban, or rural neighborhoods. In addition, many entry-level jobs require working late at night or on weekends when conventional transit services are either reduced or nonexistent. Finally, many employment-related trips are complex and involve multiple destinations, including reaching childcare facilities or other services.²⁰ The 2035 LRTP will continue to examine opportunities to implement this program to assist welfare recipients and low-income families by helping individuals successfully transition from welfare to work and reach needed employment support services such as childcare and job training activities.

Access management is the systematic control of the location, spacing, design and operation of driveways, median openings, interchanges, and street connections that can be implemented at a relatively low cost.²¹ Rather than roadway expansion projects, many of the congested corridors in the ARTS area need access management strategies implemented to reduce congestion. Due to the financial and environmental constraints of constructing new or widening existing roadways, the need for effective system management must be evaluated during the development of the 2035 LRTP.

Travel Demand Management took root in the 1970s and 1980s from legitimate desires to provide alternatives to single occupancy commuter travel to save energy, improve air quality, and reduce peak period congestion. Today, managing travel demand has broadened to encompass the desire to optimize transportation system performance for

²⁰ Federal Transit Administration

²¹ Transportation Research Board Access Management Committee





commute and non-commute trips and for recurring as well as non-recurring events.²² Some of the strategies to promote in the ARTS area include the following:

- Telecommuting and flexible work hours.
- Ridesharing.
- Employer partnerships.
- Guaranteed Ride Programs.
- Parking management.
- Support for transit.
- Express and shuttle bus services.
- Support for walking and bicycling.
- Traveler Information Services.

Intelligent Transportation Systems (ITS) encompasses a broad range of wireless and wire line communications-based information and electronics technologies. When integrated into the transportation system's infrastructure, and in vehicles themselves, these technologies relieve congestion, improve safety, and enhance productivity.²³ As shown in **Figure 51**, Georgia DOT provides real-time traffic information through its NAVIGATOR system. Georgia DOT also provides 511 services throughout the ARTS area. Georgia 511 has the ability to monitor state routes and interstate roads throughout Georgia, with updates every few minutes. Georgia 511 also provides the following travel information:

- Trip times.
- Accurate, up-to-date information on statewide traffic conditions.
- Route-specific information.
- Current and planned road and lane closures.
- Construction.
- Critical incidents.
- AMBER alerts.

South Carolina DOT does not currently provide real-time traffic information or 511 services in the ARTS area. The 2035 LRTP provides an opportunity to broaden ITS technologies throughout the region to ensure these new technologies are adequately implemented in the future.

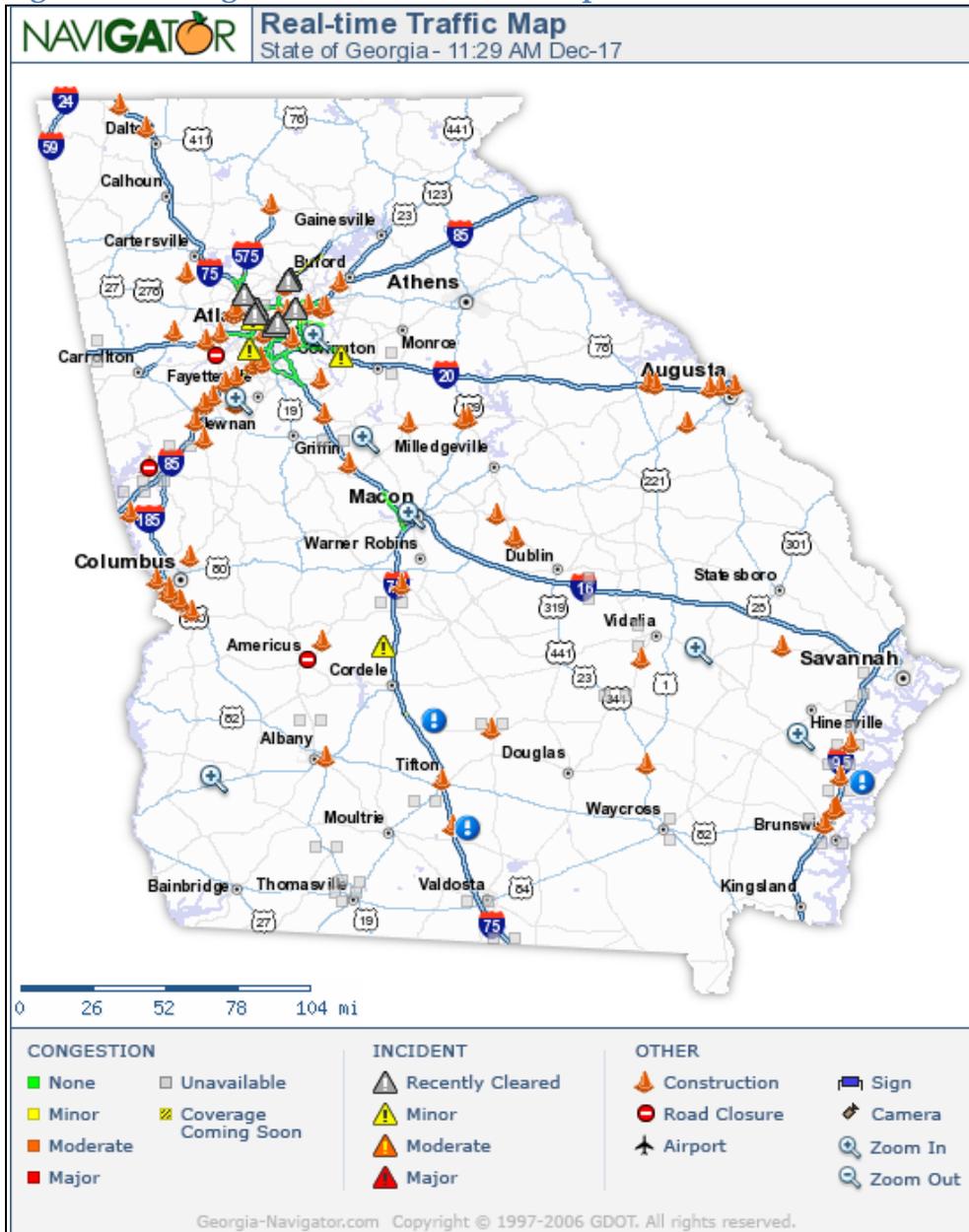
²² U.S. DOT, Federal Highway Administration (FHWA) Office of Operations.

²³ U.S. DOT, Research and Innovative Technology Administration (RITA)





Figure 51: Georgia Real-Time Traffic Map



Source: Georgia Department of Transportation, NAVIGATOR.

Over the last five years, the **Safe Routes to School (SRTS)** program, identified in SAFETEA-LU, has improved the ability to fund bicycle and pedestrian access to elementary and middle schools. The SRTS goal is to increase the number of children in grades K-8 who bicycle and walk to school.





SRTS enabling legislation guides how this will be implemented by:

- Increasing awareness.
- Developing locally-driven and supported programs.
- Improving bicycling and walking conditions near the qualifying schools.
- Evaluating at the project and program levels.

Benefits of the SRTS Program include the following:

- Reduced congestion and increased safety near participating schools.
- Reduced air pollution in route to and near participating schools.
- Increased physical activity of children.

4.6 Implementation Policies

Implementation policies in the 2035 LRTP address modal connectivity, Complete Streets, Context Sensitive Solutions and coordinate land use policy and plans in order to create and sustain livable communities in the ARTS area.

Two important national developments emphasize the federal commitment to sustainable transportation principles. First is the introduction of the Complete Streets Act of 2009 in Congress. This bill defines effective Complete Streets policies that are flexible enough to use in daily transportation planning practice. The bill directs state DOTs and MPOs to adopt such policies within two years of enactment of the bill and to apply the policies to upcoming federally funded transportation projects. The bill directs the U.S. DOT to develop a mechanism to ensure compliance with the bill and to report to Congress on State DOTs' and MPOs' compliance with the bill. States that do not comply would have a small percentage of their States' surface transportation funds directed towards safety projects. The bill also updates current federal code on bicycle and pedestrian accommodation and authorizes needed research and data collection, technical assistance, and dissemination of Complete Streets best practices.²⁴ The bill is currently being reviewed in the House Transportation and Infrastructure Committee.

Second is the establishment of a partnership among the Federal Highway Administration, Housing and Urban Development, and the Environmental Protection Agency to promote **Livable Communities**. As part of the draft Surface Transportation

²⁴ National Complete Streets Coalition.





Authorization Act of 2009 legislation, FHWA would create an Office of Livability within the Department. This Office would be responsible for the successful administration and implementation of the Department's key programs on livability and sustainability. These programs will increase modal choice, advance the creation of livable communities, and promote the integration of land use and planning.²⁵ On March 17, 2010, President Obama signed the Hiring Incentives to Restore Employment (HIRE) Act, which extended SAFETEA-LU to December 31, 2010; provides more than \$19.5 billion of additional transportation and infrastructure investment to help create and sustain family-wage construction jobs and rebuild our nation's infrastructure; increases transportation funding levels, restores funds that were rescinded in 2009; and extends the Build America Bonds (BAB) program.

Communities that position themselves to be at the forefront of these movements will stand to benefit from priority funding for their work programs, and the ARTS 2035 LRTP identifies projects that promote complete street concepts and livability to leverage future funding opportunities.

The Federal Highway Administration is committed to the advancement of **Context Sensitive Solutions**. The objective is to improve the environmental quality of transportation decision making by incorporating context sensitive solutions principles in all aspects of planning and the project development process. The following four CSS principles, highlighted in the Joint American Association of State Highway Transportation Officials (AASHTO) and FHWA Context Sensitive Solutions Strategic Planning Process Summary Report, apply to transportation processes, outcomes, and decision-making:²⁶

- Strive toward a shared stakeholder vision to provide a basis for decisions.
- Demonstrate a comprehensive understanding of contexts.
- Foster continuing communication and collaboration to achieve consensus.
- Exercise flexibility and creativity to shape effective transportation solutions, while preserving and enhancing community and natural environments.

²⁵ A Blueprint for Investment and Reform. The Surface Transportation Authorization Act of 2009. Committee on Transportation and Infrastructure. June 2009.

²⁶ Joint AASHTO/FHWA Context Sensitive Solutions Strategic Planning Process Summary Report, March 2007.





Coordinating or **integrating land use** and transportation planning and development is commonly considered as one feature of “smart growth,” sustainable development, or other similar concept. These policies, principles, and strategies are intended to preserve and even enhance valued natural and cultural resources and facilitate “healthy,” sustainable communities and neighborhoods. These approaches also tend to foster a balance of mixed uses (including housing, educational, employment, recreational, retail, and service opportunities), which recognizes the importance of spatial or geographic proximity, layout, and design of those uses. In addition, the consideration of long term and broader (even global) impacts of land use decisions on our natural and human-made environment, including transportation systems and facilities, is critical to these concepts, as well.²⁷

4.7 Funding Policies

The multimodal needs in the ARTS area are much greater than the available funding over the next 25 years. Thus, it is critical that the implementation projects and program identified in the 2035 LRTP specifically address the 2035 LRTP goals and objectives. Even though the new surface transportation act will not be enacted prior to the adoption of the ARTS 2035 LRTP, there are signs that increased funding will be available for projects that reduce Greenhouse Gas (GHG) emissions, reduce vehicle miles of travel, and encourage Complete Streets and livable communities. The ARTS 2035 LRTP identifies and addresses these types of improvements to maximize potential future funding and implementation opportunities. The ARTS 2035 LRTP also seeks funding for multimodal projects through the usual federal, state, and local funding sources to ensure the LRTP goals and objectives are achieved.

²⁷ Coordinating Land Use and Transportation: What is the Role of Transportation? Federal Highway Administration.





5. Multimodal Transportation Needs

5.1 Roadway Needs

The ARTS area roadway network plays an essential role moving people and goods throughout the region and this network also supports economic development, quality of life, and community connections. In addition to accommodating automobiles and trucks, the roadway network forms the backbone of the system for users of alternative modes of transportation, such as public transportation, bicycling, and walking. It is a requirement during the LRTP process to review, update, and validate the roadway network to ensure the system can safely and efficiently support existing and future transportation conditions. During the development of the ARTS 2035 LRTP, the existing and future roadway networks were examined using a tool known as the ARTS travel demand model.

The travel demand model was developed with oversight from the ARTS staff and approved by ARTS Test Network Subcommittee and ARTS Policy Committee. For the ARTS 2035 LRTP planning process it was updated by Georgia Department of Transportation Office of Planning and includes Richmond County (GA), Aiken County (SC), and Columbia County (GA) and portions of Edgefield County (SC). The base year in the model was updated from 2002 to 2006 and the horizon year was updated from 2030 to 2035. During the model update process, the model area was expanded to include all of Aiken County. The Edgefield County portion included in the model is contained within the MPO boundary and while only a portion of Aiken County is contained in the MPO boundary, it was determined by SCDOT and representatives from Aiken County and the towns of North Augusta, Aiken, and Burnetown to include the entire county during the update process. The following provides a summary of the updates to the ARTS travel demand model:

- Updated socioeconomic data to reflect 2006 conditions.
- Updated highway network to include roadway improvements since 2002 model update.
- Updated trip generation, trip distribution, mode split, and trip assignment model components.
- Base year model calibrated and validated to 2006 conditions.
- Reconfigured Traffic Analysis Zone (TAZ) system (from 719 zones to 1,001 zones).
- Incorporated 33 external stations to capture traffic travelling in and out of the region on individual facilities.

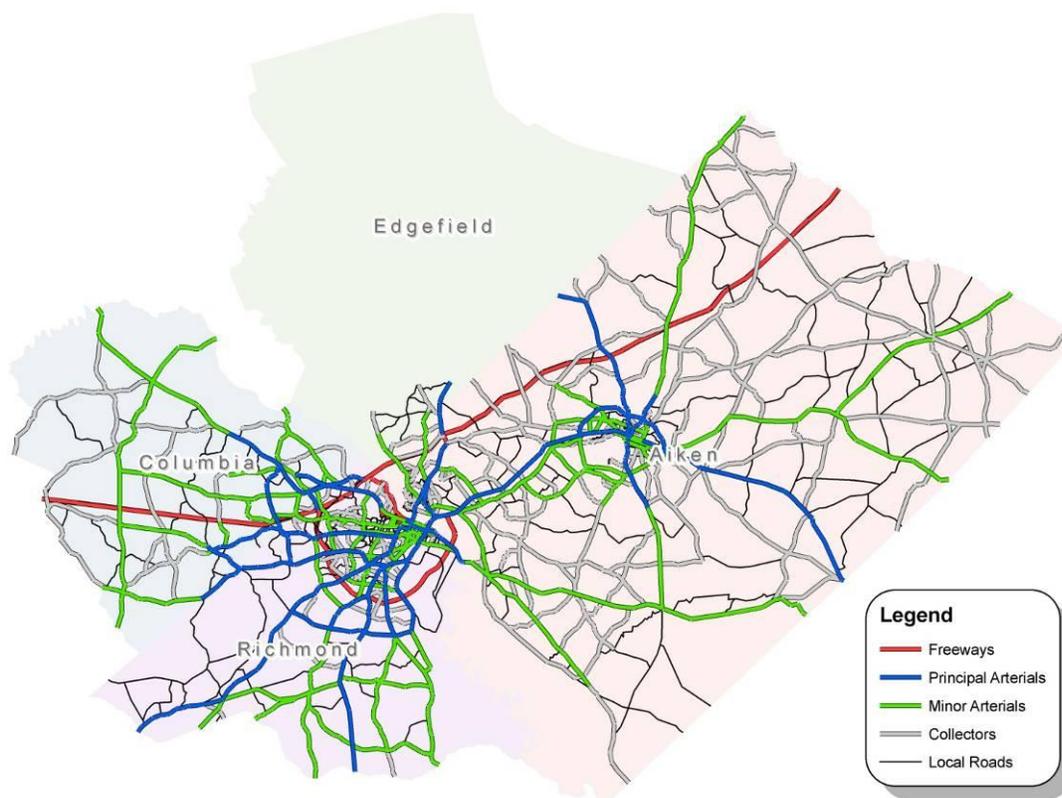




- Expanded highway network and model study area to include all of Aiken County, South Carolina.

The ARTS travel demand model is based on the four-step modeling process: trip generation, trip distribution, mode choice, and trip assignment. **Figure 52** shows the highway network by functional classification contained in the ARTS travel demand model.

Figure 52: Highway Network



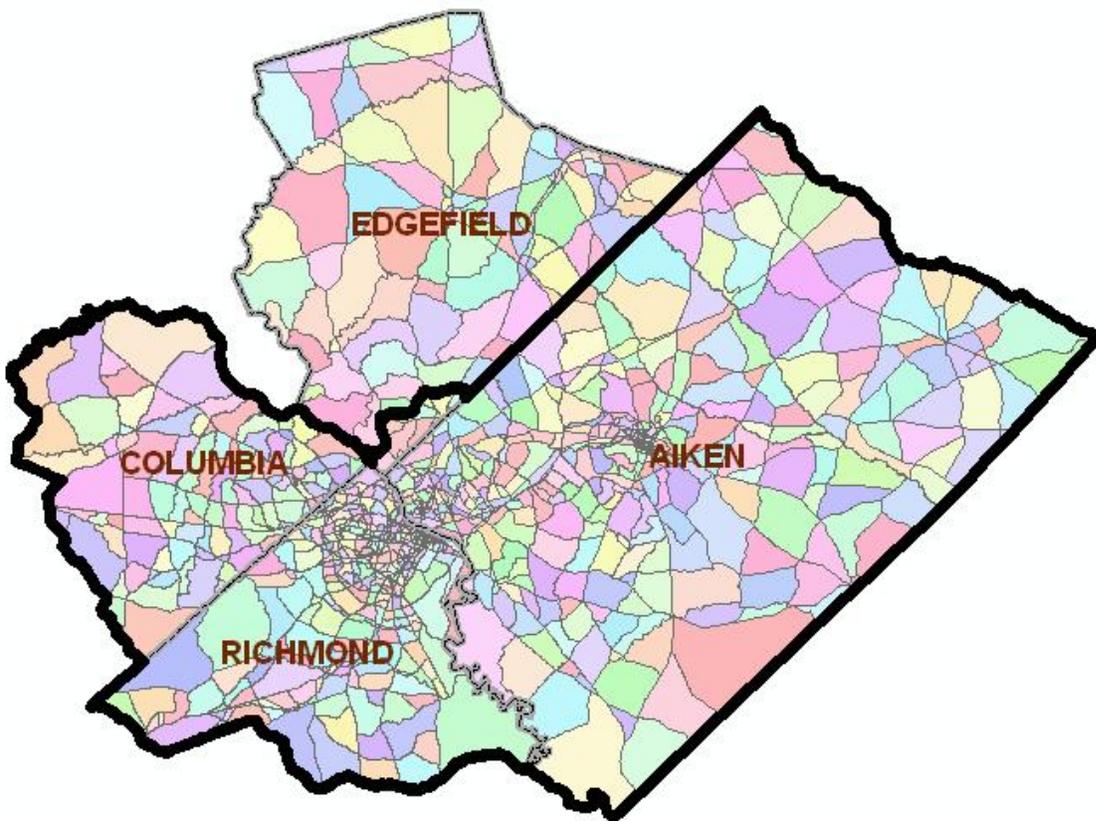
Source: ARTS Travel Demand Model – Georgia Department of Transportation.





As noted above, the ARTS travel demand model expanded the number of traffic analysis zones (TAZs) from 719 to 1,001. A TAZ is a designated geographic area within the MPO boundary that usually consists of one or more census blocks and block groups. Each of these zones contains socioeconomic data, such as population, employment, households, and school enrollment. Traffic analysis zones decrease in size where levels of human activity are high and roadway network becomes denser. These zones enable planners to link travel activities to physical locations in the study area, which assist in identifying highway needs. **Figure 53** shows the TAZs that are contained in the ARTS travel demand model (inside thick black line). The portion of Edgefield County shown outside the black line is not contained in the ARTS travel demand model.

Figure 53: Traffic Analysis Zones



Source: ARTS Travel Demand Model – Georgia Department of Transportation.

A description of the model, the *Travel Demand Model for the Augusta MPO*, is provided in **Appendix B**, which is under a separate cover.





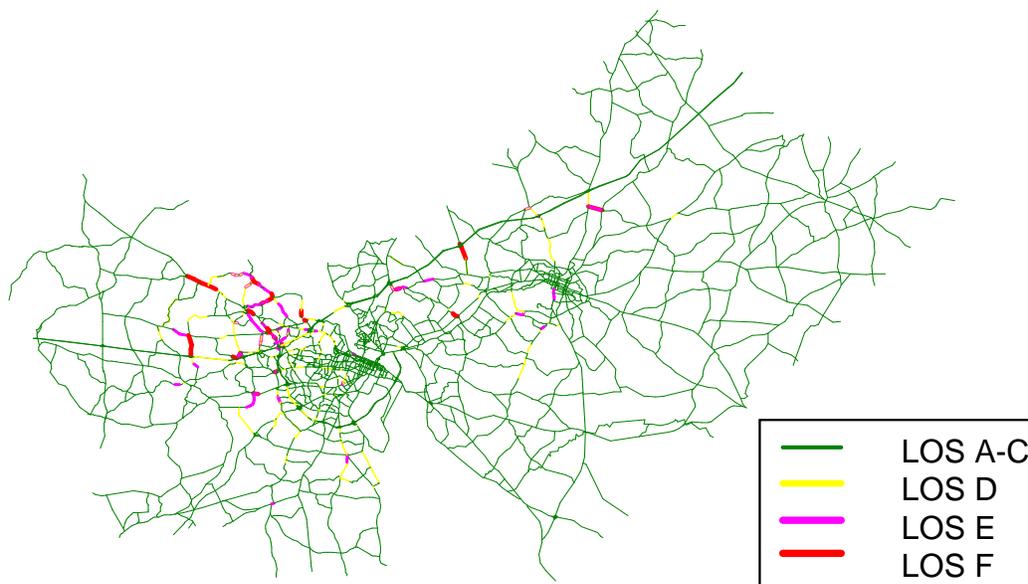
5.1.1 Base Year Conditions

The base year (2006) model network evaluates the existing transportation system, based on the updated population, employment, household, and school enrollment developed by staff in the counties and towns in the ARTS area.

Figure 54 represents the roadway system as it was in 2006 without future improvements. Based on the 2006 socioeconomic data and subsequent roadway network, the output does not reflect widespread congestion in the ARTS area, but shows congestion in Columbia County and small pockets of congestion in downtown Augusta and Aiken.

Level of service (LOS) is a qualitative measure that describes operational roadway conditions, by measuring speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Six types of LOS are used, ranging from A through F, with LOS A representing the best operating conditions and LOS F representing the worst. LOS E generally is considered to be that point at which a roadway is operating at or near capacity. Each LOS represents a range of operating conditions and the traveler’s perception of those conditions. Roadways that have a LOS D, E, and F are considered unacceptable. **Figure 56** identifies congested facilities in the base year (2006), based on the following criteria shown in **Table 13**.

Figure 54: Base Year Level of Service



Source: ARTS Travel Demand Model – Georgia Department of Transportation.





Table 13: Level of Service Definitions

Level of Service	Volume to Capacity Ratio
LOS A, B and C	V/C Ratio < 0.70
LOS D	V/C Ratio > 0.70 and < 0.85
LOS E	V/C Ratio > 0.85 and < 1.00
LOS F	V/C Ratio > 1.00

Source: Georgia Department of Transportation Office of Planning.

Most of the existing (2006) worst congestion (LOS E and F) is concentrated in Columbia County and in small portions of the cities of Augusta and Aiken. **Table 14** shows some of the roadways in the base year that have unacceptable levels of service.

Table 14: Base Year Congested Roadways

Road Name	From	To	LOS	County
Lewiston Road	Columbia Road	I-20	F	Columbia
Washington Road	Old Washington Road	Blanchard Road	F	Columbia
Fury's Ferry Road	Hardy McManus Road	Evans to Locks Road	E/F	Columbia
Old Evans Road	Washington Road	Old Petersburg Road	F	Columbia
Stevens Creek Road	River Watch Parkway	Granite Way	F	Columbia/ Richmond
SR-144	I-20	Whaley Pond Road	F	Columbia

Source: ARTS 2006 Travel Demand Model.



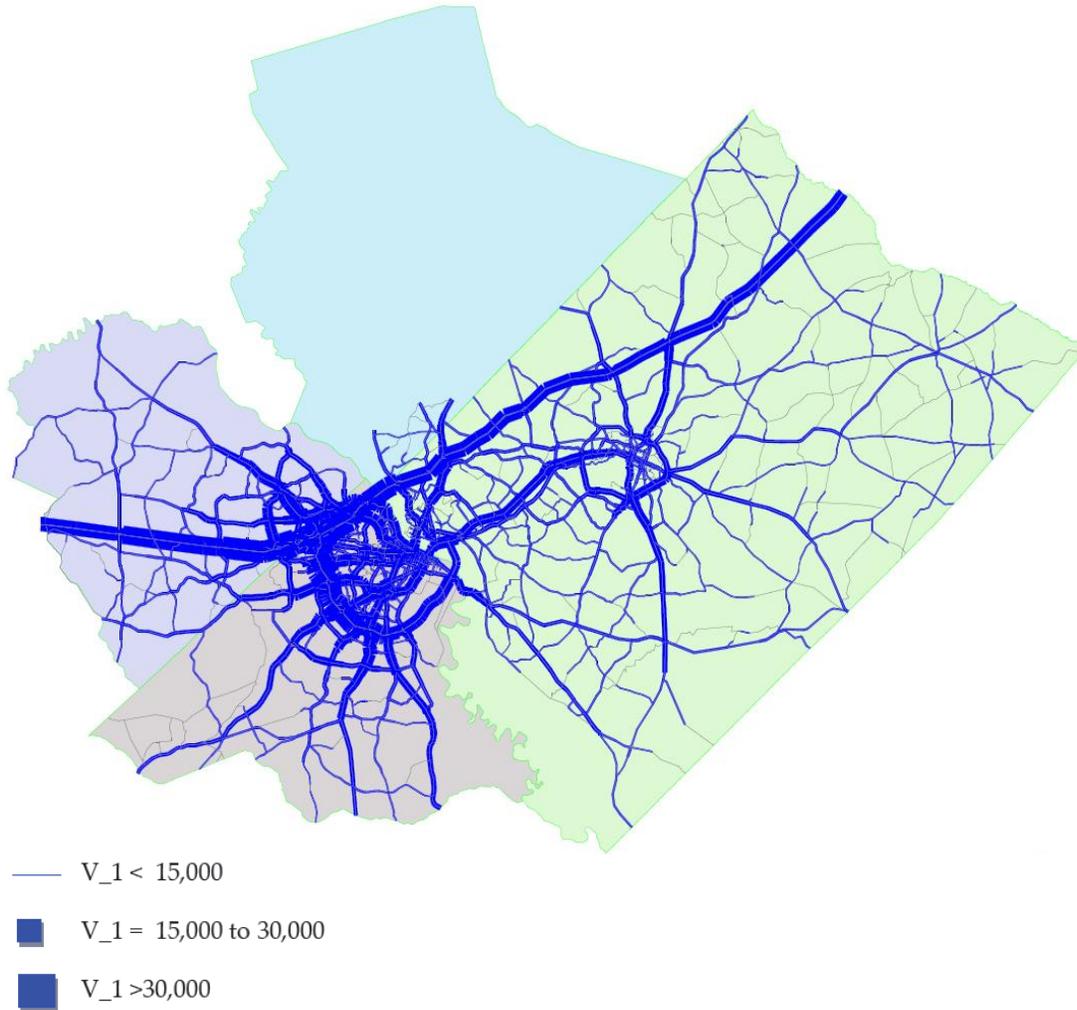
Congestion along the five-lane section Washington Road/SR 28 in Richmond County between Berckmans Road and Alexandria Drive.





Highways shown by a thick blue line carry 30,000 or more vehicles per day and these are higher classified roads, such as I-20, I-520, Jefferson Davis Highway/US 1, and Washington Road/SR 28. Roads shown by a thin blue carry 15,000 to fewer than 30,000 vehicles per day and roads shown in light gray carry less than 15,000 vehicles per day.

Figure 55: Base Year Traffic Volumes



Source: ARTS Travel Demand Model – Georgia Department of Transportation.





Traffic along Stevens Creek Road between River Watch Parkway and Evans to Lock Road in Columbia County.

Figure 56 shows the base year (2006) internal trips and relative traffic volumes in the ARTS area. Internal trips are those that originate and terminate inside the ARTS area. Each blue line represents a daily trip. The more lines there are, the thicker the lines look. The largest travel movements in the ARTS area are from Columbia County to the employment centers in Richmond County, South Augusta to downtown Augusta, and from the town of Aiken to Downtown Augusta.

Figure 56: Base Year Internal Travel Patterns



Source: ARTS Travel Demand Model – Georgia Department of Transportation.

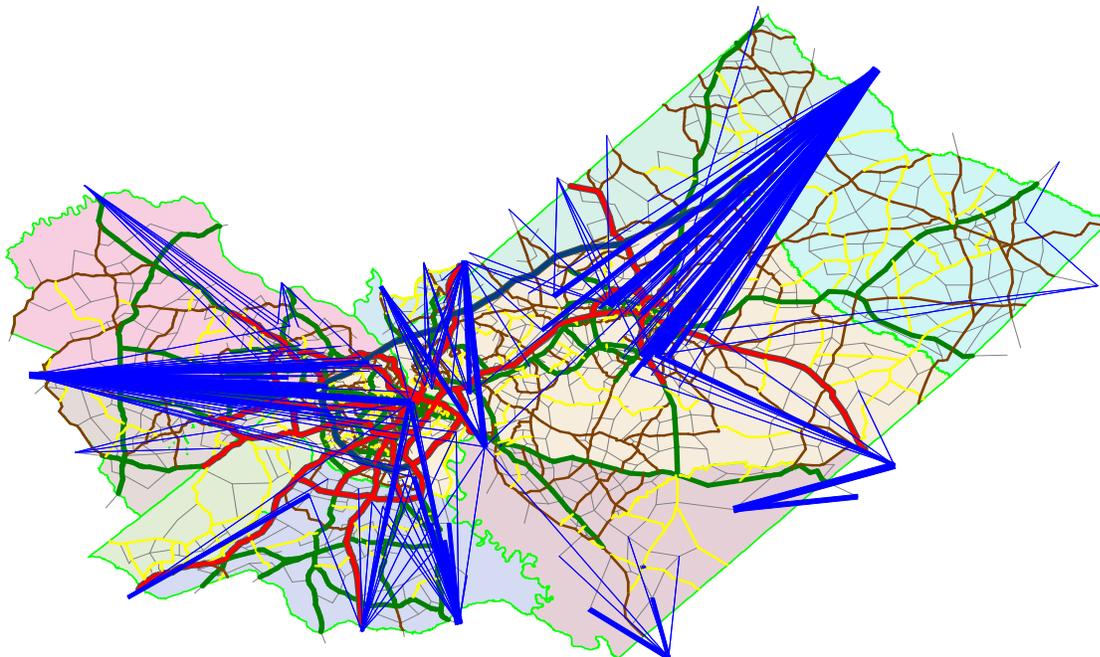




Traffic along N. Belair Road between Washington Road and Columbia Road in Columbia County.

External trips are those that either originate or terminate outside the ARTS area. The highest external trip volumes occur on I-20 east from Atlanta and I-20 west from Columbia. **Figure 57** shows the base year (2006) external trips and relative traffic volumes in the ARTS area. The more lines there are, the thicker the lines look.

Figure 57: Base Year External Travel Patterns



Source: Source: ARTS Travel Demand Model – Georgia Department of Transportation.





I-20 traveling east toward River Watch Parkway the last exit in Georgia before crossing the Savannah River into South Carolina.

5.1.2 Future Year No Build Conditions

This section examines the future traffic conditions in the ARTS area assuming no capacity improvements are constructed through the year 2035. The intent of this analysis was to develop a baseline against which future transportation improvement options to assess. To better estimate future traffic conditions within the ARTS area, a rigorous reexamination and recalibration of the ARTS travel demand model was completed. As noted earlier, new demographic forecasts, refined highway networks and TAZs, and new external trip origin-destination patterns were all incorporated into the model to more accurately replicate current traffic conditions and provide a snapshot of their implications on the future highway network.

The 2035 no-build system is built on the base year (2006) system and consists of the base year system, plus any projects under construction, opened to traffic since the base year or if funding has been authorized but where construction has not begun. New roadway improvements included in the 2035 no-build model network include the following:

- I-20 widening to six lanes from east of Warren Road Bridge/ CR 842 to west of the Augusta Canal (PI# 210570).
- I-20 and I-520 interchange and east and west approaches to I-20 (PI# 210450).
- David Road / Walton Way Ext. widening to four lanes from Washington Road to Skinner Mill Road (PI# 250560).
- Upgrade I-520 (Bobby Jones Expressway) and SR 56 (Mike Padgett Highway) interchange, which constructed new westbound and northbound loop ramps and acceleration lane from SR 56 on to I-520 (PI# 222350).



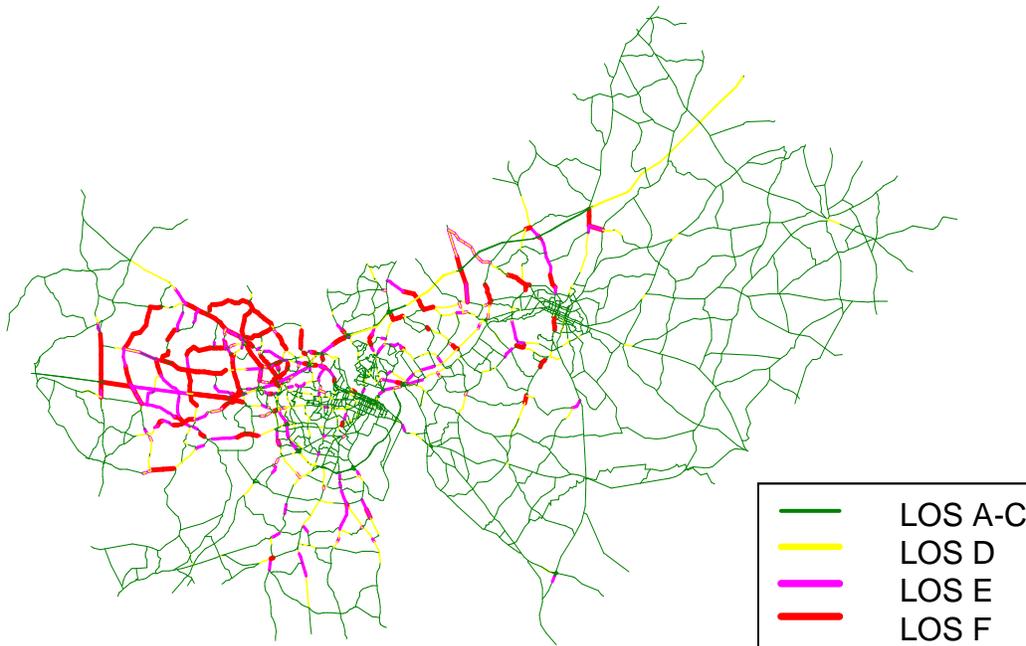


- I-20 widening from 4 to six lanes between Belair Road/Jimmie Dyess Parkway to Wheeler Road (PI# 0008219).

The ARTS travel demand model is an essential tool that provides valuable information about future traffic conditions based on the future socioeconomic data. While the travel demand model provides useful roadway needs information, it was used in combination with existing data and local experience to identify feasible project recommendations. **Figure 58** shows congestion based on a systems-level analysis and the LOS on the 2035 no-build network.

When the 2035 no-build network is compared with 2006 base year network, there are some significant declines in LOS. Based upon the projected growth in population, employment, households, and school enrollment, **Table 15** shows some of the roadways under the 2035 no-build condition that are forecasted have unacceptable levels of service. Based upon this growth, a large majority of the Columbia County roadway network is projected to operate at unacceptable levels of service. Congestion also becomes more prevalent in the cities of North Augusta, Aiken, and in south Augusta.

Figure 58: Future Year No Build Level of Service



Source: ARTS Travel Demand Model – Georgia Department of Transportation.





Table 15: Future Year No Build Congested Roadways

Road Name	From	To	LOS	County
Louisville Road	Wrightsboro Road	Tubman Road	F	Columbia
Washington Road	Martinez Boulevard	Clarks Hill Road	E/F	Columbia
Wrightsboro Road	I-20	Robinson Avenue	E/F	Columbia
I-20	Lewiston Road	Belair Road	F	Columbia
I-20	Belair Road	Washington Road	E/F	Columbia/ Richmond
Belair Road	I-20	Hereford Farm Road	F	Columbia
Bobby Jones Expressway	Washington Road	I-20	E	Columbia
N. Belair Road	Washington Road	Fury's Ferry Road	F	Columbia
Fury's Ferry Road	Washington Road	N. Belair Road	F	Columbia
Fury's Ferry Road	N. Belair Road	Evans to Locks Road	F	Columbia
Washington Road	Vineland Road	SR 232	F	Columbia
I-20	Washington Road	Martintown Road	E/F	Aiken
SC-125	S-68	US 1	F	Aiken
US-1	S-68	S-67	E/F	Aiken
SR 144	S-33	SR-105	E/F	Aiken
SC-19	SC-118	S-153	F	Aiken
Whiskey Road	Park Avenue SE	Grace Avenue SE	F	Aiken
US-1	I-20	Gregory Road	E/F	Aiken

Source: ARTS Travel Demand Model – Georgia Department of Transportation.





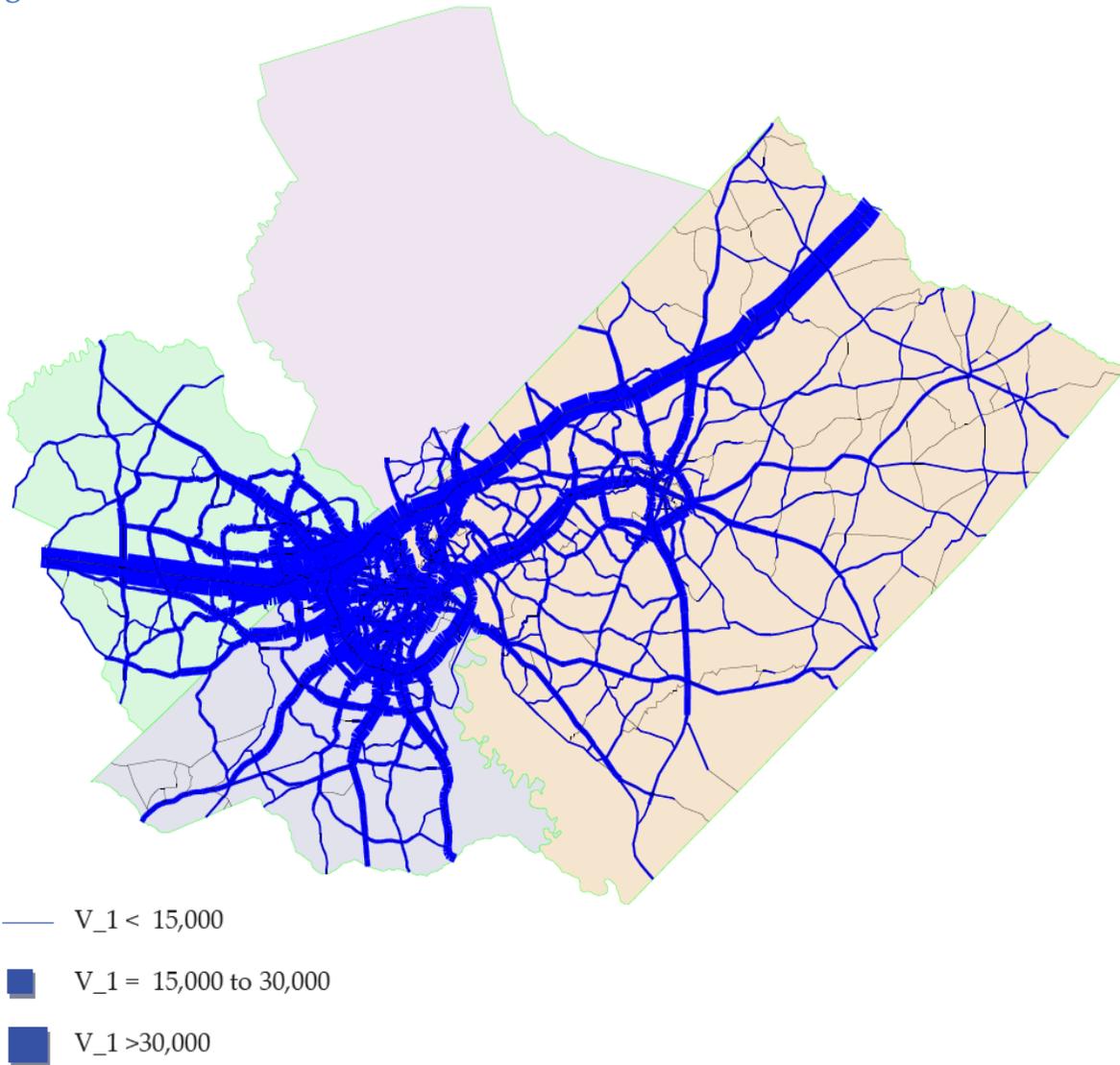
Traffic congestion along Wrightsboro Road adjacent to the Augusta Mall in Richmond County.

Figure 59 shows the daily traffic volumes under the 2035 no-build condition. Roadways shown by a thick blue line carry 30,000 or more vehicles per day and as before, these are higher classified roads, such as I-20, I-520, Jefferson Davis Highway/US 1, and Washington Road/SR 28. Roads shown by a thin blue carry 15,000 to fewer than 30,000 vehicles per day, and roads shown in light gray carry less than 15,000 vehicles per day.





Figure 59: Future Year No Build Traffic Volumes



Source: ARTS Travel Demand Model – Georgia Department of Transportation.

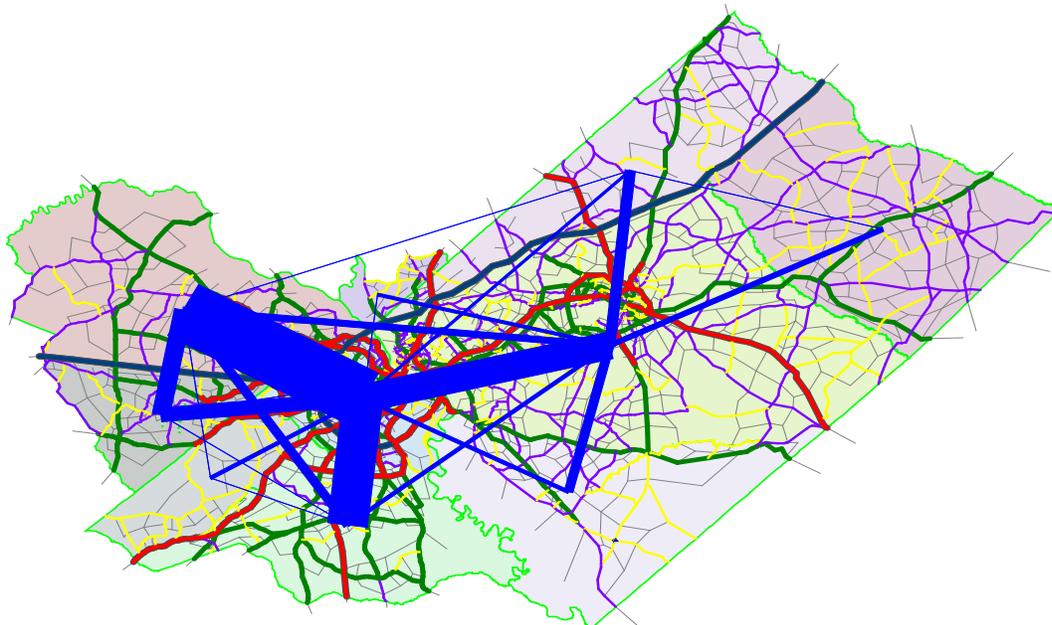




Edgefield Highway/SC 19 traveling north from the city of Aiken to I-20

Figure 60 shows the future year (2035) no-build internal trips and relative traffic volumes in the ARTS area. The more lines there are, the thicker the lines look. The largest travel movements in the ARTS area will still be from Columbia County to the employment centers in Richmond County, South Augusta to downtown Augusta, and from the town of Aiken to Downtown Augusta but the volumes will be much greater than shown in the base year (**Figure 56**).

Figure 60: Future Year Internal Travel Patterns



Source: ARTS Travel Demand Model – Georgia Department of Transportation.

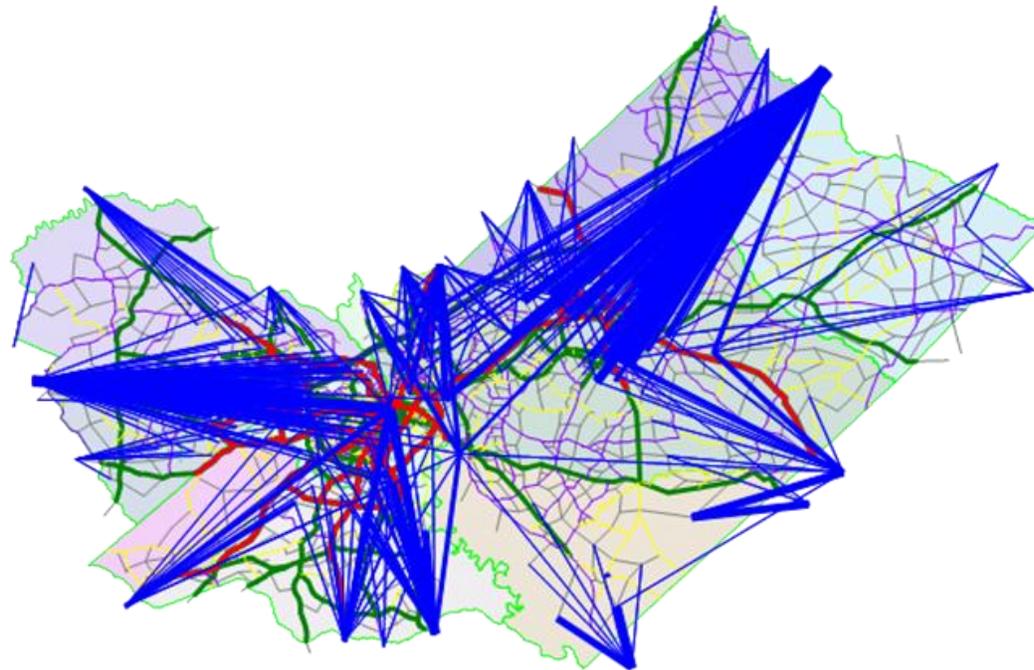




Jefferson Davis Highway/US 1 traveling east toward the City of Aiken

Figure 61 shows the future year (2035) no-build external trips and relative traffic volumes in the ARTS area. The more lines there are, the thicker the lines look. The highest external trip volumes will still occur on I-20 east from Atlanta and I-20 west from Columbia. However, external trips will grow from Lincoln, Jefferson, and Burke Counties, Georgia and Edgefield, Lexington, and Barnwell Counties, South Carolina.

Figure 61: Future Year External Travel Patterns



Source: ARTS 2005 No-Build Travel Demand Model – Georgia Department of Transportation.





I-20 traveling east toward Columbia Highway/US 1 in Aiken County, South Carolina

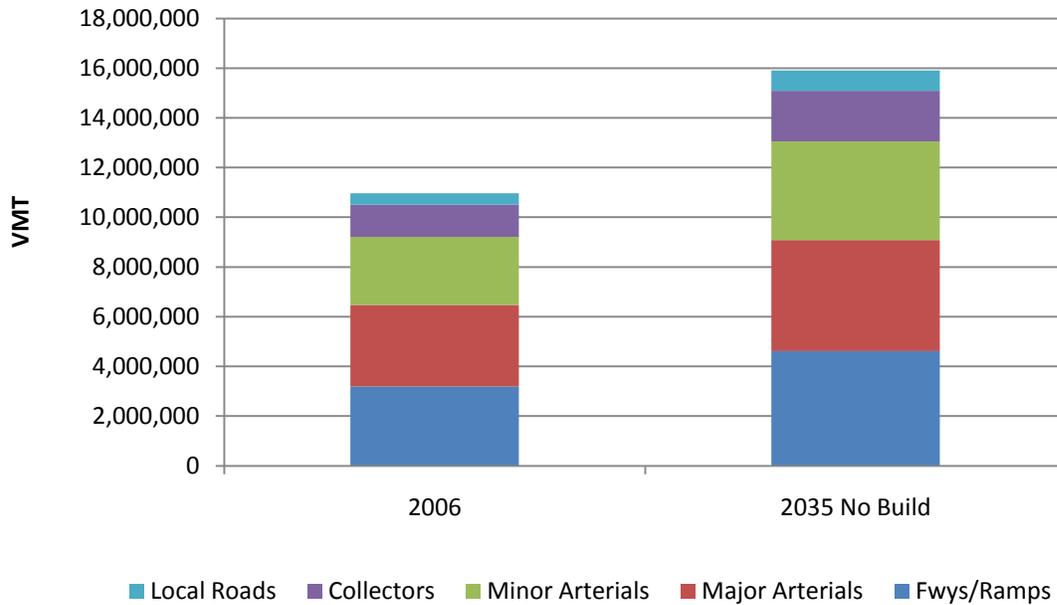
5.1.3 Base Year vs. Future Year No Build

A useful LRTP exercise is to compare and analyze the base year to the future year no-build roadway network. **Figure 62**, summarizes the changes in vehicle miles traveled (VMT) between 2006 and 2035 (no-build). The VMT represents the total number of miles driven by all vehicles per day. The daily VMT in 2006 (base year) and 2035 no-build for the ARTS area are 10.9 million and 15.9 million miles, respectively.





Figure 62: Base Year vs. Future No Build Daily Vehicle Miles Traveled by Functional Classification



Source: ARTS Travel Demand Model.

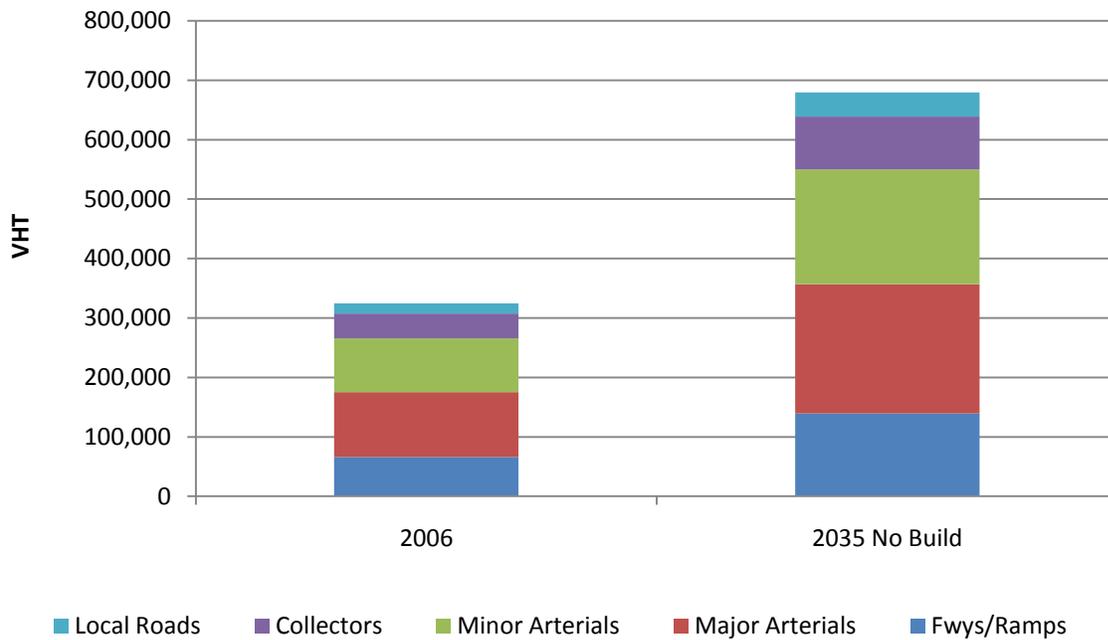
Daily VMT is projected to increase from nearly 11 million in 2006 to nearly 16 million in 2035, which is a 45.4 percent increase. In 2006, freeways and major arterials carried 59 percent of the traffic and by 2035 (no-build), these same roadways are projected to carry 57 percent. In 2006, minor arterials carried 25 percent of the traffic and by 2035 (no-build), this classification is projected to still carry 25 percent. In 2006, collector roadways carried 12 percent of the traffic and by 2035 (no-build), this classification is projected to carry 13 percent. In 2006, local roadways carried 4 percent of the traffic and by 2035 (no-build), this classification is projected to carry 5 percent. Freeways and major arterials will continue to carry the majority of traffic in the ARTS area and travel, though much greater in volume in 2035, will remain basically the same, percentage-wise, on the functional classification system.

Daily vehicle hours traveled or VHT is the number of hours vehicles are driven daily. **Figure 63** reflects the hours that vehicles spend traveling on the different functionally classified roadways in the ARTS area. Increased congestion and slower speeds can increase VHT. Conversely, higher speeds can reduce VHT. VHT is a useful indicator of the relative efficiency of the roadway system. The daily VHT is projected to increase from 324,671 hours in 2006 to 679,755 hours in 2035 (no-build), which is a 109 percent increase.





Figure 63: Base Year vs. Future No Build Daily Vehicle Hours Traveled by Functional Classification



Source: ARTS Travel Demand Model.

Once again, freeways and major arterials carried the majority of the VHT on the ARTS roadway network. In 2006, VHT on freeways and major arterials was 54 percent and in 2035 (no-build), it is projected to be nearly 53 percent. In 2006, minor arterials carried 28 percent of the traffic and by 2035 (no-build), this classification is projected to remain at 28 percent. In 2006, collector roadways carried 13 percent of the traffic and by 2035 (no-build), this classification is projected to remain at 13 percent. In 2006, local roadways carried 5 percent of the traffic and by 2035 (no-build), this classification is projected to carry 6 percent. Similar to VMT, freeways and major arterials will continue to carry the majority of VHT in the ARTS area in 2035.

As shown in **Table 16**, the travel conditions will worsen by 2035 as a result of growth in the ARTS area. The growth in vehicle miles traveled throughout the ARTS area (45 percent) is consistent with the demographic growth rates. Without any significant transportation capacity improvement, the ARTS area will experience a four-fold increase in travel delay and a two-fold increase in hours traveled. ARTS area VHT and Vehicle Hours of Delay (VHD) are projected to grow at a considerably higher rate than VMT, which indicates that many of the collector roadways and local streets are also expected to exceed their capacity by 2035. Daily hours of delay is calculated by





determining the difference between the estimated travel time under actual (often congested) conditions and under uncongested conditions for each highway segment and each hour of the day. These hourly delays are multiplied by the average hourly traffic for each hour, and summed to get total daily vehicle hours of delay.

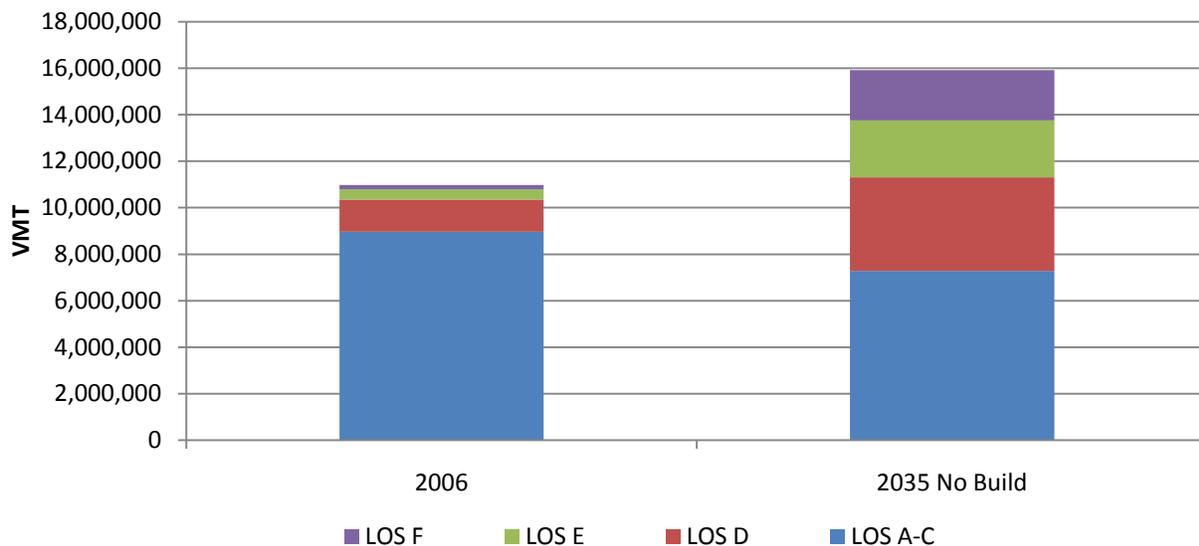
Table 16: Base Year vs. Future No Build Daily VMT, VHT, and VHD

	2006	2035 no build	% Change
Vehicle Miles of Travel	10,970,762	15,909,345	+45%
Vehicle Hours of Travel	324,671	679,755	+109%
Vehicle Hours of Delay	7,740	34,548	+346%

Source: ARTS Travel Demand Model.

Examining VMT by LOS provides useful information on the amount of travel that occurs in congested conditions. **Figure 64** shows the VMT by LOS for the base year (2006) and the future no-build (2035).

Figure 64: Base Year vs. Future No Build Daily Vehicle Miles Traveled by Level of Service



Source: ARTS Travel Demand Model.





As shown in **Table 17**, 81.8 percent of the ARTS roadway network VMT operated at an acceptable LOS A, B or C in 2006. Under the 2035 no-build condition, 45.8 percent of the roadway network will operate at LOS A, B, or C, which is a 19 percent decrease in acceptable LOS conditions. In 2006, 12.5 percent of the roadway network VMT operated at LOS D conditions and under the 2035 no-build, 25.3 percent of the roadway VMT in the ARTS area will operate at LOS D, which is a 192 percent increase. In 2006, 4 percent of the roadway network VMT operated at LOS E and under the 2035 no-build, 15.4 percent will operate at LOS E, which is a 461 percent increase. In 2006, 1.7 percent of the roadway network VMT operated at a LOS F and under the 2035 no-build condition, nearly 13.5 percent will operate at LOS F, which is a 1,040 percent increase. It is no surprise that the projected population, employment, household, and school enrollment growth is going to severely impact the ARTS roadway network VMT to a point where it is projected that 55 percent of the roadway VMT will experience congestion levels between LOS D, E or F, under the no-build condition.

Table 17: Base Year vs. Future Year No Build VMT Level of Service Percent

	LOS A, B & C	LOS D	LOS E	LOS F
Base Year	81.8%	12.5%	4.0%	1.7%
Future Year no build	45.8%	25.3%	15.4%	13.5%
Percent Change	-19%	+192%	+461%	1,040%

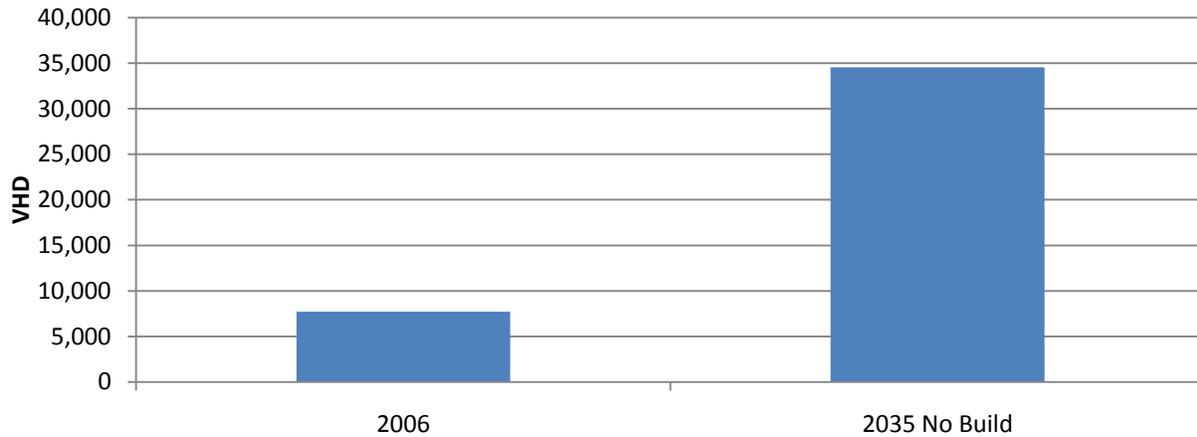
Source: ARTS Travel Demand Model.

As shown in **Figure 65**, daily hours of delay will increase from 7,740 hours in 2006 to 34,548 hours under the 2035 no-build condition, which is a 345 percent increase. This increase in daily hours of delay will have a dramatic impact on quality of life issues, economic development, air quality and green house gas emissions. To address the increase in delays, sustainable multimodal transportation improvements must be identified and implemented to reduce the daily hours of delay on the ARTS roadway network.





Figure 65: Base Year vs. Future No Build Daily Vehicle Hours of Delay



Source: ARTS Travel Demand Model.

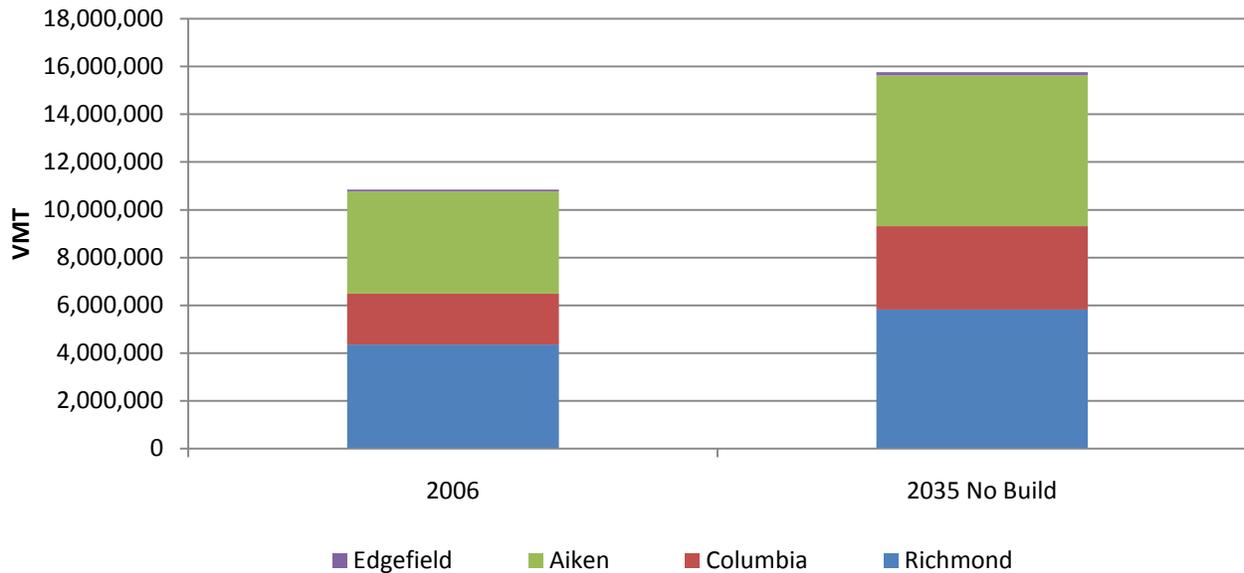
Figure 66 shows the VMT by county in the base year (2006) and the 2035 (no-build). In 2006, Richmond County had the highest share of VMT at 40.2 percent but by 2035 the county’s share of VMT is projected to decrease to 36.9 percent, which will rank second among the four counties. While Richmond County’s share of VMT is projected to decrease, the county will experience a 33.5 percent growth in VMT by 2035, meaning the other areas are growing faster. In 2006, Aiken County²⁸ had the second highest share of VMT, at 39.4 percent, and by 2035, the county’s share of VMT is projected to increase to 40.1 percent, which will rank first among the four counties. Overall, Aiken County’s share of VMT will increase by 48.0 percent. In 2006, Columbia County had the third highest share of VMT, at 19.7 percent but by 2035, the county’s share of VMT is projected to increase to 22.2 percent, which will rank third among the four counties. Overall, Columbia County’s share of VMT will increase by 63.5 percent by 2035, which is the highest increase from among all four counties. In 2006, Edgefield County had the least share of VMT at 0.7 percent but by 2035 the county’s share of VMT is projected to increase to 0.8 percent, which will remain last among the four counties. However, Edgefield County’s overall share of VMT will increase by 52.7 percent by 2035.

²⁸ The ARTS travel demand model includes all of Aiken County, however only the urbanized portions of Aiken County are included in the ARTS area and thus the total share of VMT will be lower than noted because it includes non-urbanized areas of Aiken County.





Figure 66: Base Year vs. Future No Build VMT by County



Source: ARTS Travel Demand Model.

Table 18 shows the county VMT growth impact on the ARTS functional classification system. The percentages in Table 18 show the VMT percent increase by functional classification between 2006 and 2035 (no-build). All functional classifications will experience increases in VMT across the ARTS area, and it is crucial as development occurs that local and collector roadways are connected to the arterial and freeway network. Improving connectivity and providing multiple access points to the arterial network could provide more efficient travel operations in the ARTS area and in turn could reduce VHT and VHD.

Table 18: Functional Classification VMT Percent Increase by County

	Richmond	Columbia	Aiken	Edgefield
Freeways/Ramps	25.56%	45.24%	64.74%	n/a
Major Arterials	33.16%	44.43%	40.92%	31.22%
Minor Arterials	34.33%	72.73%	38.59%	50.02%
Collectors	46.93%	119.81%	43.93%	54.95%
Local Roads	78.86%	120.42%	55.34%	104.89%

Source: ARTS Travel Demand Model.

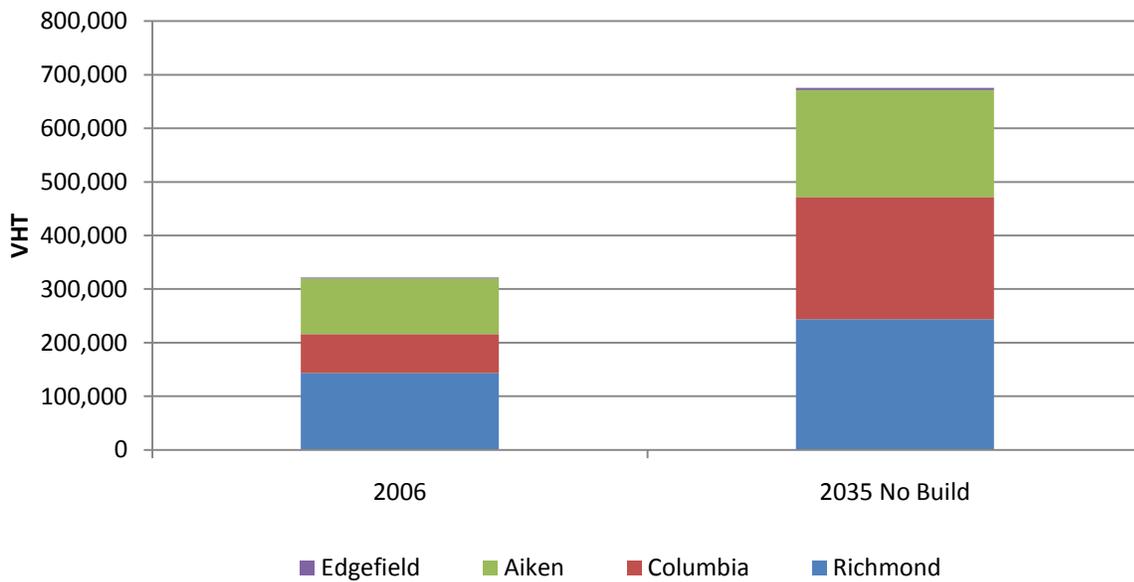
Similar patterns are shown in Figure 67 among the four counties when examining VHT. In 2006, Richmond County had the highest VHT at 44.6 percent among the four





counties, followed by Aiken County (32.2%), Columbia County (22.5%) and Edgefield County (0.6%). By 2035 the county rank of VHT will remain the same, but the share will be Richmond County (36.1%), Columbia County (33.74%), Aiken County (29.5%), and Edgefield County (0.6%). Overall, VHT in Columbia County will grow by 215 percent, followed by Edgefield County at 99 percent, Aiken County at 92 percent, and Richmond County at 70 percent.

Figure 67: Base Year vs. No Build VHT by County



Source: ARTS Travel Demand Model.

Table 19 shows the county VHT growth impact on the ARTS functional classification system. The percentages in **Table 19** show the VHT percent increase by functional classification between 2006 and 2035 (no-build). All functional classifications in each of the four counties will experience increases in VHT across the ARTS area. However, Columbia County will experience the most severe VHT increases in the ARTS area. Columbia County travelers will experience 3.7 times more hours of travel on collectors and local roads compared to 2006. Tremendous growth, along with the need to improve roadway connectivity, is one reason behind Columbia County’s projected increases in VHT. Many Columbia County residents live in the county because of the quality of life, rural setting, and new infrastructure, but the projected congestion levels will severely impact commuting patterns and, consequently, cause quality of life issues for all residents and travelers.





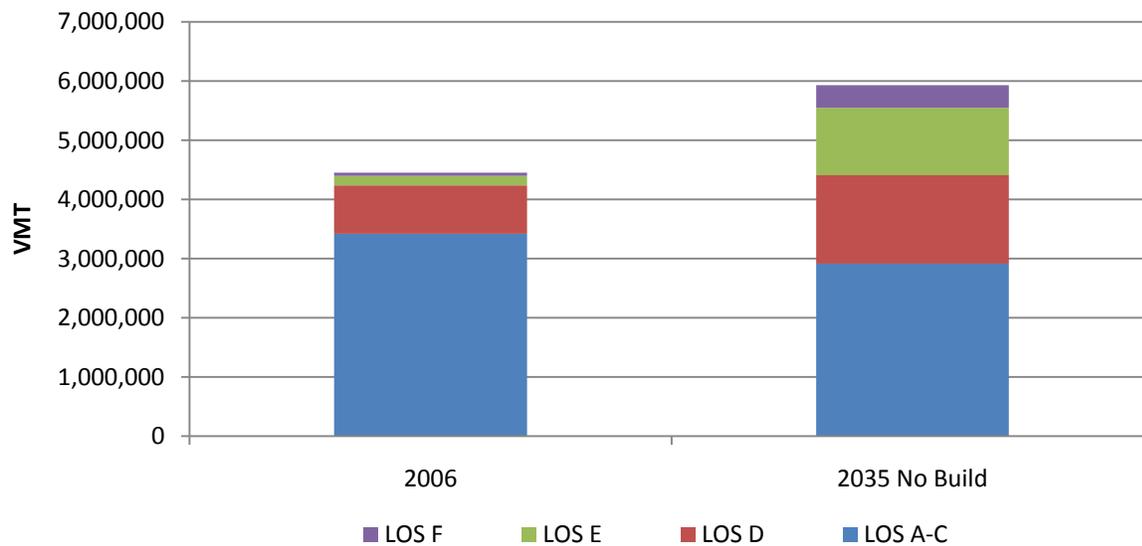
Table 19: Total Functional Classification VHT Percent Increase by County

	Richmond	Columbia	Aiken	Edgefield
Freeways/Ramps	68.7%	155.4%	146.8%	NA
Major Arterials	69.6%	194.5%	89.7%	31.8%
Minor Arterials	61.8%	241.8%	74.5%	137.1%
Collectors	77.1%	279.3%	74.2%	104.5%
Local Roads	106.9%	270.1%	85.1%	146.7%

Source: ARTS Travel Demand Model.

As shown in **Figure 5** (page `8), the projected growth of population in the ARTS area has a dramatic impact on roadway level of service in the ARTS area. **Figures 68** through 71 show each county’s 2006 and 2035 (no-build) LOS by VMT.

Figure 68: Richmond County Base Year vs. No Build VMT by LOS



Source: ARTS Travel Demand Model.

As shown in **Table 20**, 76.8 percent of Richmond County roadway VMT operated at LOS C or better in 2006, while 18.3 percent operated at LOS D, 3.7 percent at LOS E, and 1.2 percent at LOS F. By 2035, under the no-build condition, 49.2 percent of Richmond County roadway VMT will operate at LOS C or better and roadways operating at LOS D, E, and F will increase to 25.2 percent, 19.2 percent, and 6.4 percent, respectively. Under the 2035 no-build condition, there is a dramatic shift in severe congestion as the total VMT on roadways operating at LOS D, E, and F will increase by 83 percent, 601 percent, and 635 percent, respectively.





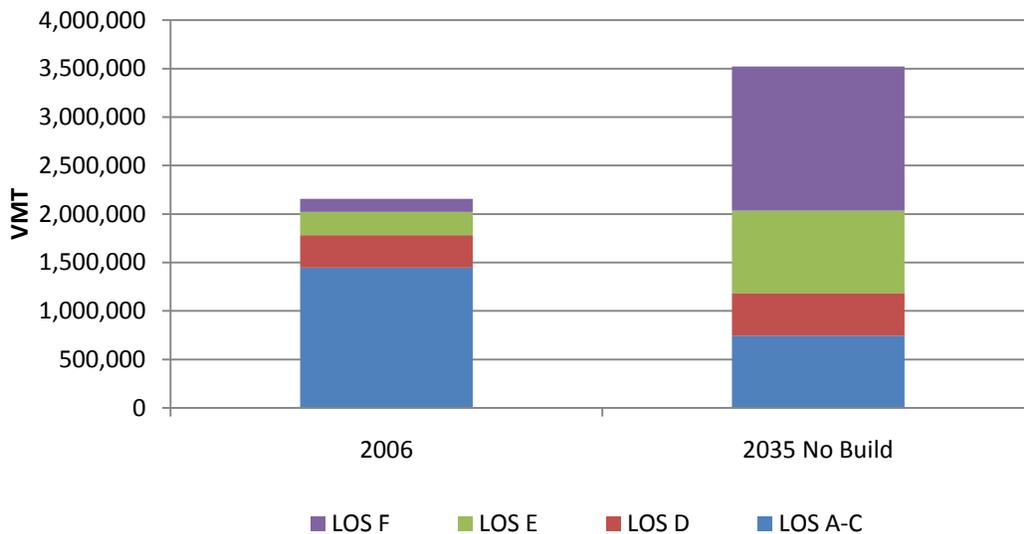
Table 20: Base Year vs. Future Year No Build Richmond County VMT Level of Service Percent

	LOS A, B & C	LOS D	LOS E	LOS F
Base Year	76.8%	18.3%	3.7%	1.2%
Future Year no build	49.2%	25.2%	19.2%	6.4%
Percent Change in VMT	-15%	83%	601%	635%

Source: ARTS Travel Demand Model.

Table 21 shows that 67.1 percent of Columbia County roadway VMT operated at LOS C or better in 2006, while 15.6 percent operated at LOS D, 11.1 percent at LOS E, and 6.2 percent at LOS F. By 2035, under the no-build condition, 21.2 percent of Columbia County roadway VMT will operate at LOS C, or better and roadways operating at LOS D, E, and F will increase to 12.4 percent, 24.2 percent, and 42.2 percent, respectively. Under the 2035 no-build condition, there is an enormous shift in severe congestion as the total VMT on roadways operating at LOS D, E, and F will increase by 31 percent, 257 percent, and 1,007 percent, respectively.

Figure 69: Columbia County Base Year vs. No Build VMT by LOS



Source: ARTS Travel Demand Model.

The projected growth in Columbia County will have a dramatic impact on traffic conditions and operations, requiring large investments in multimodal transportation improvements and land use coordination to ensure that the level of service can be improved. Columbia County also needs to develop policies to encourage seamless connectivity to the existing transportation network. If this is accomplished, the





infrastructure investments will be more sustainable, the anticipated growth can be accommodated, and efficient travel can be provided on the roadway network.

Table 21: Base Year vs. Future Year No Build Columbia County VMT Level of Service Percent

	LOS A, B & C	LOS D	LOS E	LOS F
Base Year	67.1%	15.6%	11.1%	6.2%
Future Year no build	21.2%	12.4%	24.2%	42.2%
Percent Change in VMT	-49%	31%	257%	1,007%

Source: ARTS Travel Demand Model.

As shown in **Table 22**, 92.6 percent of Aiken County roadway VMT operated at LOS C or better in 2006, while 5.6 percent operated at LOS D, 1.3 percent at LOS E, and 0.5 percent at LOS F. By 2035, under the no-build condition, 55.4 percent of Aiken County roadway VMT will operate at LOS C or better, and roadways operating at LOS D, E, and F will increase to 32 percent, 7.4 percent, and 5.2 percent, respectively. Under the 2035 no-build condition, there is a massive shift in severe congestion as the total VMT on roadways operating at LOS D, E, and F will increase by 737 percent, 762 percent, and 1,471 percent, respectively.

Table 22: Base Year vs. Future Year No Build Aiken County VMT Level of Service Percent

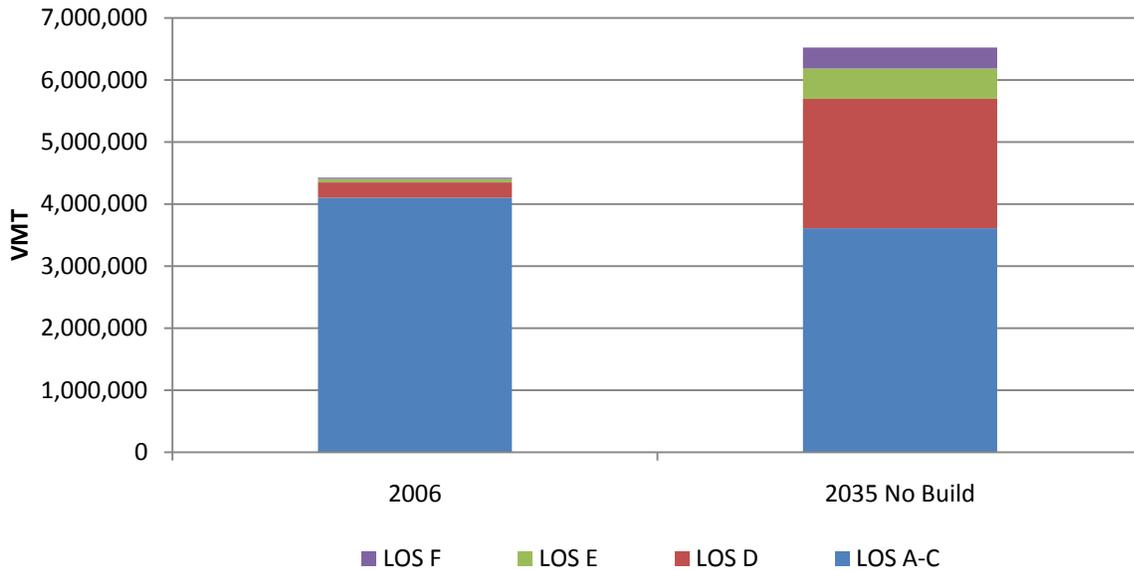
	LOS A, B & C	LOS D	LOS E	LOS F
Base Year	92.6%	5.6%	1.3%	0.5%
Future Year no build	55.4%	32.0%	7.4%	5.2%
Percent Change in VMT	-12%	737%	762%	1,471%

Source: ARTS Travel Demand Model.





Figure 70: Aiken County Base Year vs. No Build VMT by LOS



Source: ARTS Travel Demand Model.

As shown in **Table 23**, 96.6 percent of Edgefield County roadway VMT operated at LOS C or better in 2006, while 3.4 percent operated at LOS D, 0 percent at LOS E, and 0 percent at LOS F. By 2035, under the no-build condition, 74.7 percent of Edgefield County roadway VMT will operate at LOS C or better, and roadways operating at LOS D, E, and F will increase to 12.4 percent, 9.8 percent, and 3.2 percent, respectively. Under the 2035 no-build condition, there is a vast shift in severe congestion as the total VMT on roadways operating at LOS D increases 458 percent. In 2006, there were no roadways in Edgefield County operating at LOS E and F, but under the future no-build condition 13 percent of the VMT will operate at LOS E and F.

Table 23: Base Year vs. Future Year No Build Edgefield County VMT Level of Service Percent

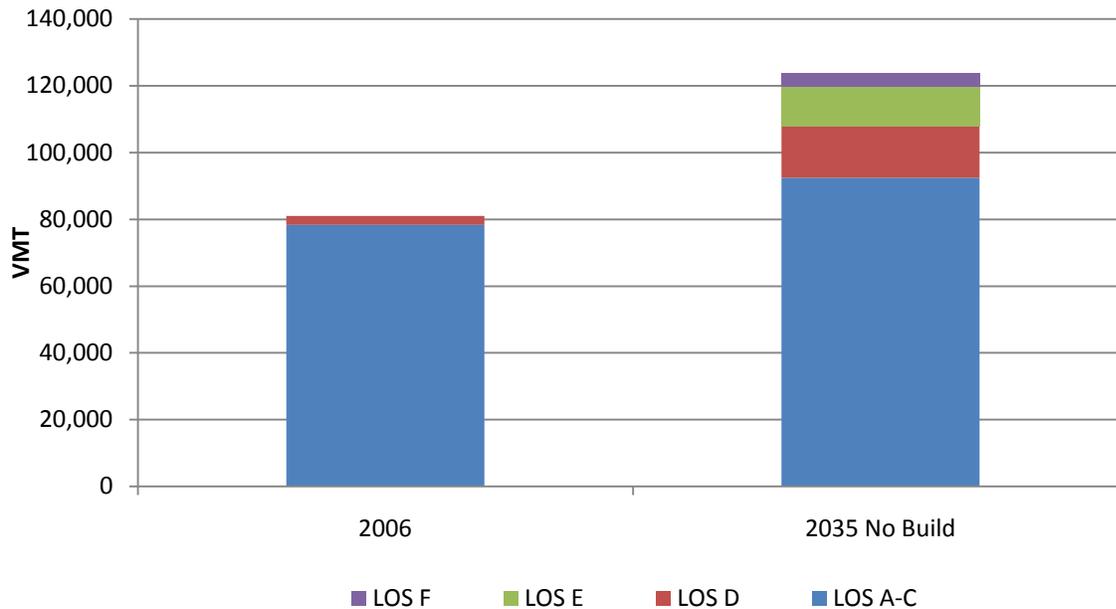
	LOS A, B & C	LOS D	LOS E	LOS F
Base Year	96.6%	3.4%	0.0%	0.0%
Future Year no build	74.7%	12.4%	9.8%	3.2%
Percent Change in VMT	18%	458%	~	~

Source: ARTS Travel Demand Model.





Figure 71: Edgefield County Base Year vs. No Build VMT by LOS



Source: ARTS Travel Demand Model.

5.1.4 Future Year Existing and Committed Conditions

The existing plus committed (E+C) network is a planning term used to describe the current roadway system (Existing Network) plus the funded capacity expansion projects (Committed Network). The committed capacity expansion projects (widening existing roadways, extending existing roadways, or constructing roadways on new alignment) are projects that have proceeded beyond the planning phase and are currently in the preliminary engineering (PE) and/or right-of-way (ROW) phases and have a specific committed federal, state, or local funding source identified to construct the project. The Committed Network also includes projects that have already moved into the construction phase, but have not yet been completed. The following provides a list of the E+C projects included in the ARTS travel demand model:

- Widen I-520 (Bobby Jones Expressway) between US 78/278/SR 10 (Gordon Highway) and US 1/SR 4 (Deans Bridge Road) to six lanes and reconfigure interchanges at US 78/278/SR 10 (Gordon Highway) and US 1/SR 4 (Deans Bridge Road) (PI# 210700).
- Phase 4-Widen CR 65 (Windsor Springs Road) between Willis Forman Road and Tobacco Road to 4 through lanes with turn lanes as needed (PI# 250610).





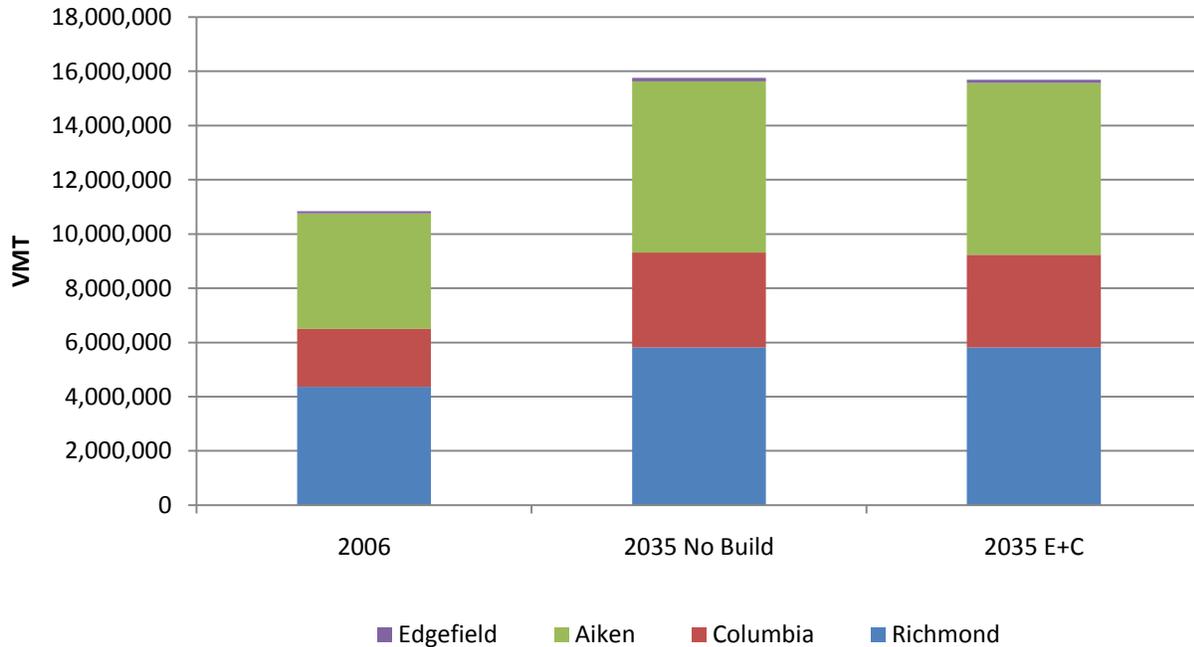
- Reconstruct and widen Windsor Spring Road Bridge over Spirit Creek to four lanes (PI# 250615).
- Widen Columbia Road (SR 232) between Crawford Creek and CR 223 to four lanes with turn lanes as needed (PI# 231440).
- Widen and add center turn lane on SR 56/Mike Padgett Highway between Old Waynesboro Road and Bennock Mill Road, includes bridges (PI# 0006431).
- Widen SR 4 (15th Street) between Milledgeville Road and Government Street to four through lanes with turn lanes as needed (PI# 220680).
- Widen Washington Road with turn lanes as needed between Kiokee Creek and SR 383/Belair Road (PI# 262080).
- Extend William Few Parkway between SR 104/Washington Road and Hardy-McManus Road (PI# 250620).
- Widen Old Petersburg Road/Old Evans Road to four lanes with turn lanes as needed between Baston Road and SR 104/Washington Road, and extend Old Evans Road on new alignment to Washington Road (PI# 250470).
- Phase 1- Widen SR 118/Hitchcock Parkway between US 1/78 and SR 302/Silver Bluff Road.
- Widen US 25 to seven lanes between I-520 and Walnut Lane.
- Widen East Buena Vista to three lanes between Brookside Drive and Atomic Road, and widen Atomic Road to five lanes between Martintown Road and Old Edgefield Road.





Figure 72 summarizes the changes in VMT between 2006, 2035 (no-build), and 2035 E+C model networks. As noted earlier, the total 2006 and 2035 no-build VMT is 10.9 million and 15.9 million, respectively. When committed expansion projects in the ARTS area are analyzed in the travel demand model VMT totals 15.8 million, which is approximately 91,165 VMT per day lower than the 2035 no build model results.

Figure 72: Base Year vs. No Build vs. E+C Daily VMT by County



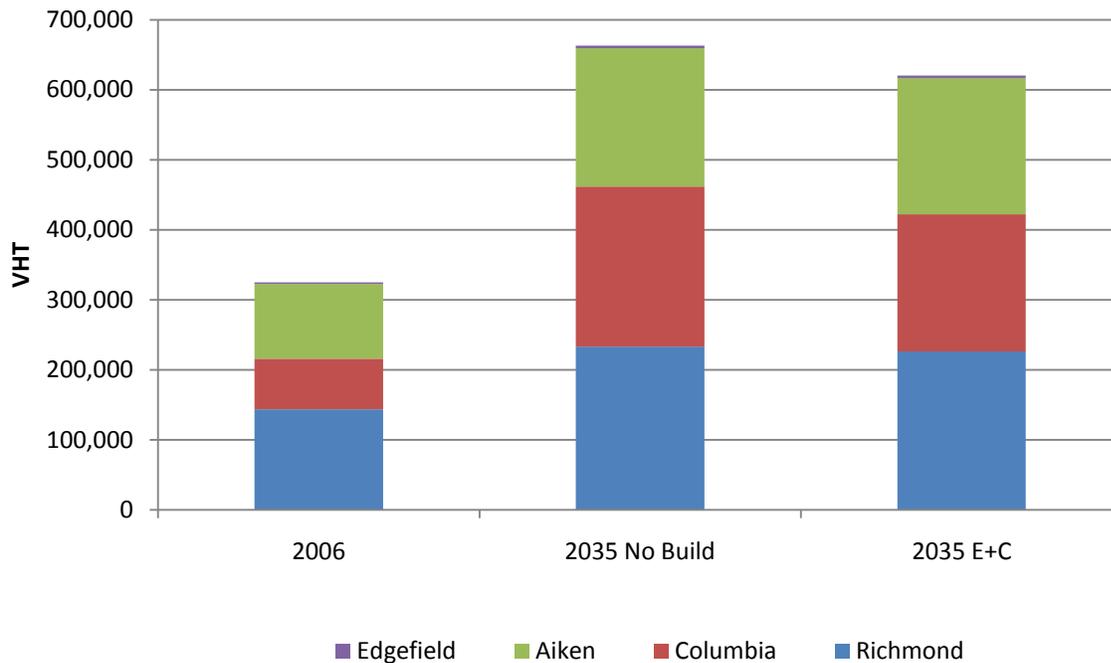
Source: ARTS Travel Demand Model.

Figure 73 shows the hours that vehicles spend traveling on roadways in the four counties in the ARTS area. As noted earlier, the daily VHT is projected to increase from 324,671 hours in 2006 to 679,755 hours in 2035 (no-build), which is a 109 percent increase. Based on the E+C capacity improvements, VHT is projected to decrease to 616,596 hours or a decrease of 63,159 hours compared to the 2035 no build conditions, which is a 9.3 percent decrease. Overall, the projects included in the E+C network will improve connectivity and travel times throughout the ARTS area and in turn should produce less greenhouse gas emissions and improve air quality.





Figure 73: Base Year vs. No Build vs. E+C VHT by County



Source: ARTS Travel Demand Model.

Figure 74 shows the VMT by LOS for the base year, future no-build, and the E+C networks. Based on the improvements included in the E+C network, VMT experiencing LOS D, E, and F is forecasted to decrease nearly 5 percent, or 399,626 VMT per day, compared to the 2035 no-build network. Figures 75 to 78 show the VMT by LOS for the base year, future no-build, and the E+C networks for each of the four counties in the ARTS area. The following provides a summary and as noted each of the four counties in the ARTS area is projected to experience a reduction in VMT under the 2035 E+C network.

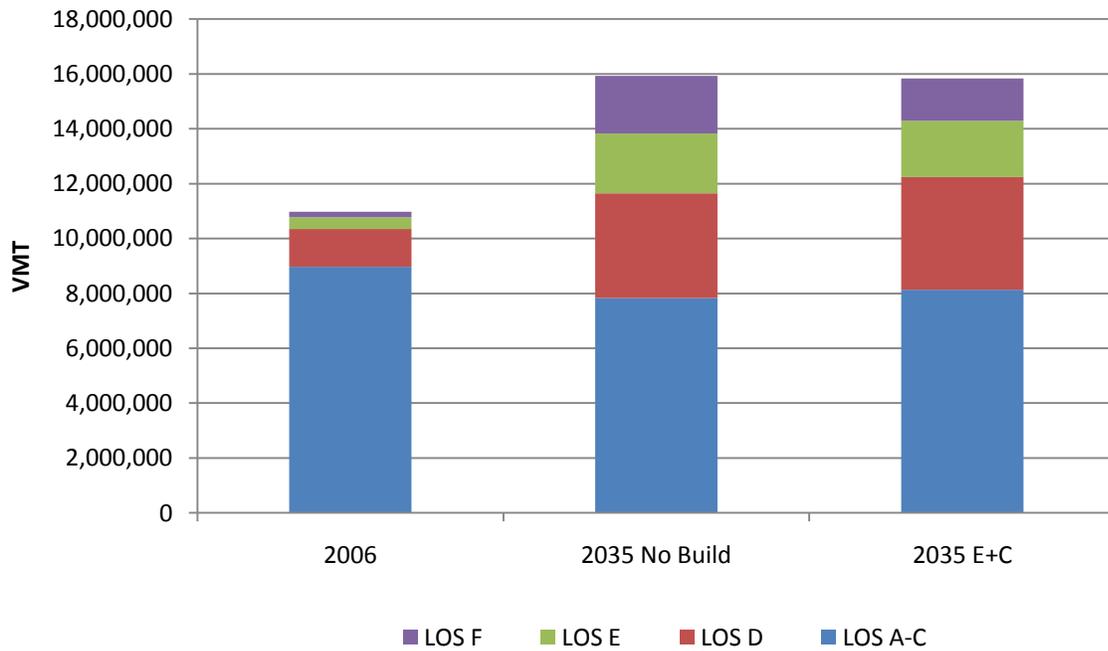
- Based on the improvements included in the E+C network, VMT under LOS D, E, and F **decreases nearly 2 percent**, or 41,877 VMT per day, in Richmond County compared to the 2035 no build network.
- Based on the improvements included in the E+C network, VMT under LOS D, E, and F categories **decreases by 3.4 percent**, or 93,272 VMT per day, in Columbia County compared to the 2035 no build network.
- Based on the improvements included in the E+C network, VMT under LOS D, E, and F categories **decreases by 10 percent**, or 262,663 VMT per day, in Aiken County compared to the 2035 no build network.





- Based on the improvements included in the E+C network, VMT under LOS D, E, and F categories **decreases by nearly 6 percent**, or 1,813 VMT per day, in Edgefield County compared to the 2035 no build network.

Figure 74: Base Year vs. No Build vs. E+C Daily Vehicle Miles Traveled by Level of Service

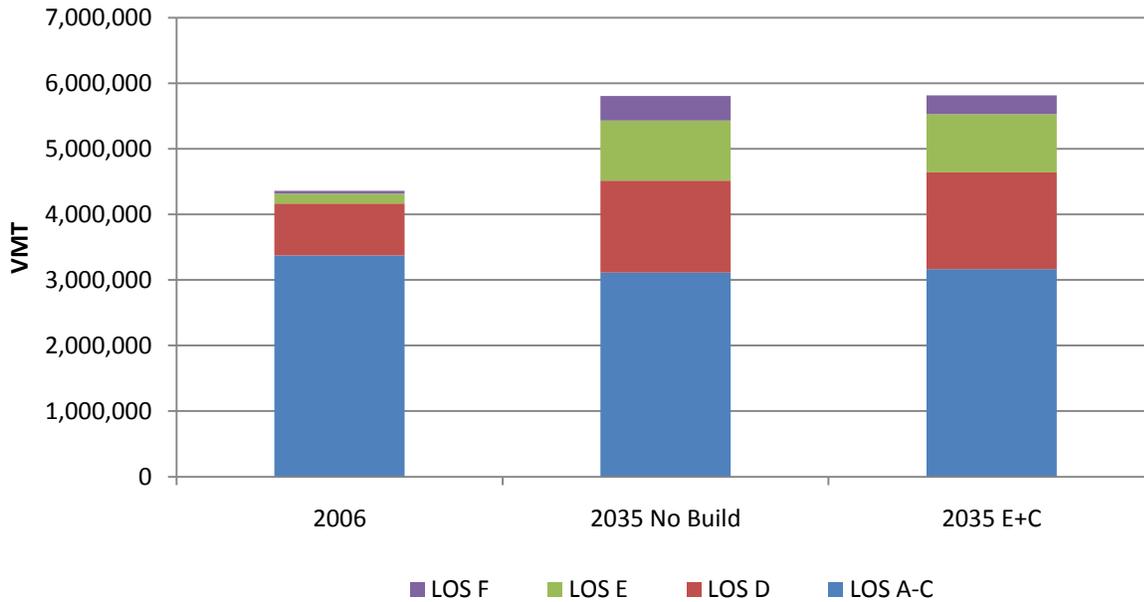


Source: ARTS Travel Demand Model.



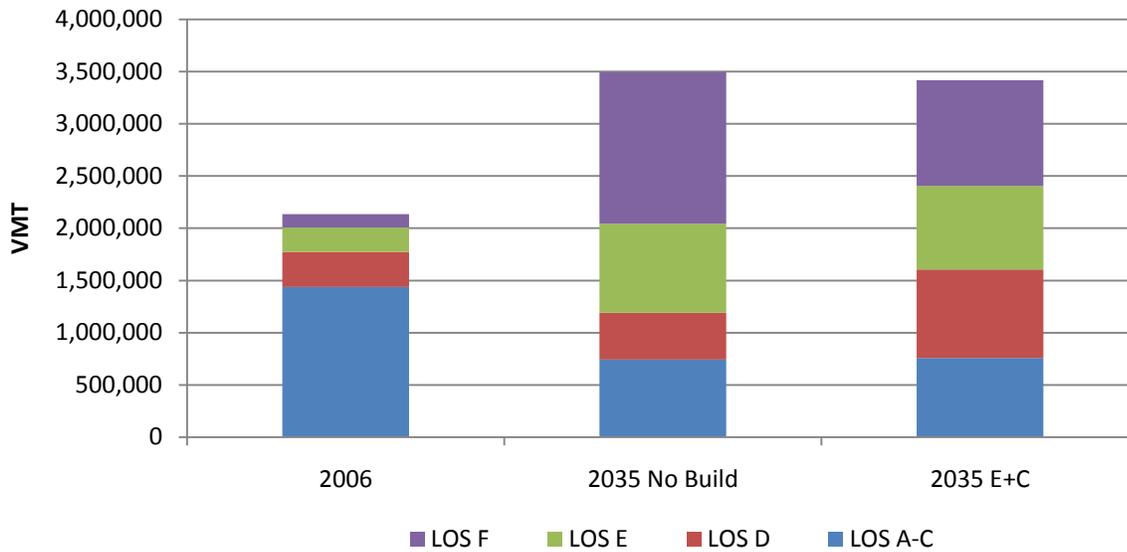


Figure 75: Richmond County Base Year vs. No Build vs. E+C VMT by LOS



Source: ARTS Travel Demand Model.

Figure 76: Columbia County Base Year vs. No Build vs. E+C VMT by LOS

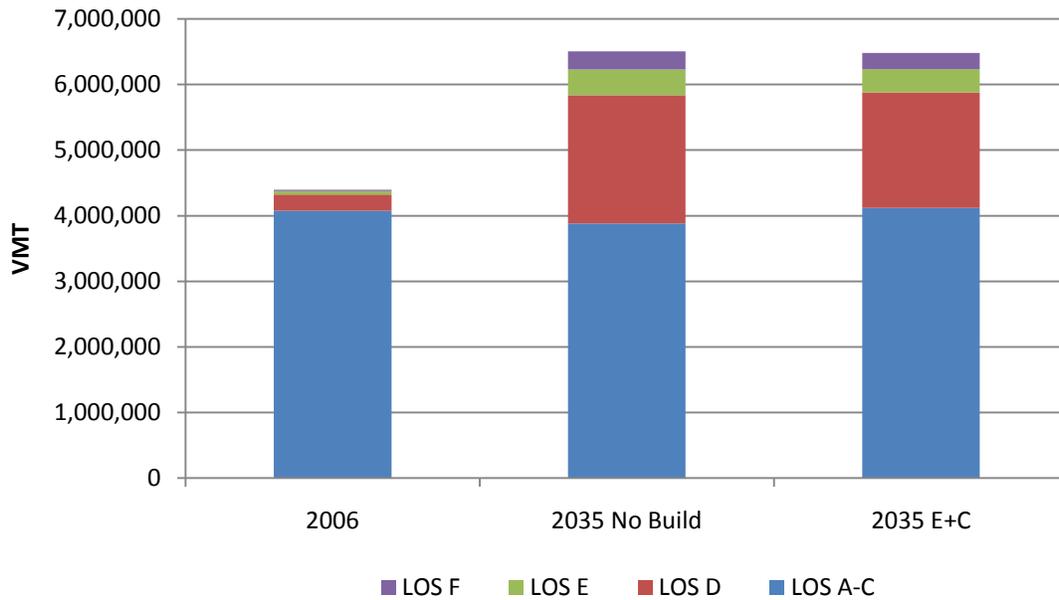


Source: ARTS Travel Demand Model.



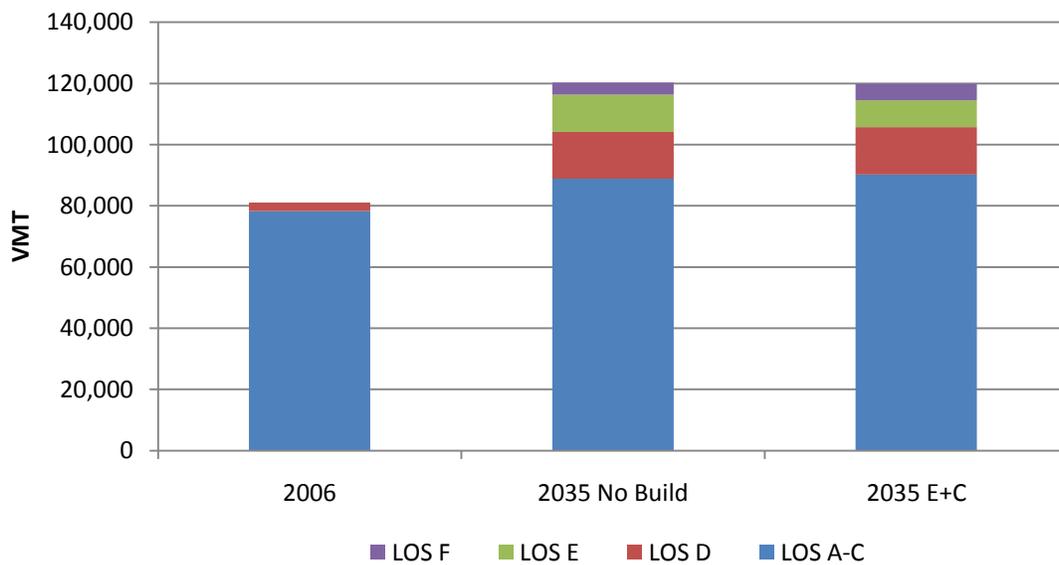


Figure 77: Aiken County Base Year vs. No Build vs. E+C VMT by LOS



Source: ARTS Travel Demand Model.

Figure 78: Edgefield County Base Year vs. No Build vs. E+C VMT by LOS



Source: ARTS Travel Demand Model.





5.2 Bike and Pedestrian Needs

Recently the nation has seen a shift toward people considering walking and biking as a viable form of transportation and not just a recreational activity. Many factors have contributed to this movement: higher and more volatile fuel prices; the beginning of the economic downturn of 2008; and a social awareness of the importance of sustainability and health. All of these factors have contributed to a resurgence of sorts in people seeking alternative forms of transportation to achieve daily mobility tasks and not simply as recreational activities. For these reasons, it is imperative that the ARTS 2035 LRTP update consider non-motorized mobility facilities as “real” mobility alternatives to cars and transit. The ARTS area has constructed a significant amount of off-road greenway and trail systems; however, there are still many destinations to be served and some service gaps to be addressed. These efforts are the focus of the needs and initiatives presented within this Plan.

5.2.1 Federal Requirements

With SAFETEA-LU’s signature into law in 2005 and its recent reauthorization through December 31, 2010, the Federal Government set a goal that 15 percent or more of all travel be accomplished by non-motorized transportation, while reducing the number of users of this mode injured or killed by a simultaneous 10 percent. The goal is to balance the ability of the system to provide a true travel alternative to the personal motor vehicle while implementing a system that is safe as well as convenient. SAFETEA-LU requires that all LRTPs and updates, such as this effort, provide consideration of biking and walking as viable, equal mobility alternatives to driving and not simply as recreational activities. Given this backing, projects identified within this effort are eligible for several avenues of Federal funding, in the range of an 80 percent to 95 percent match to local contributions. The most likely funding sources include sources such as Surface Transportation Program (STP), Safe Routes to School (SRTS, detailed later in this document), Congestion Mitigation and Air Quality (CMAQ), and Transportation Enhancement Activities (TEA), although a multitude of other sources exist. The needs outlined herein all qualify for one or more of these avenues of funding.

In addition, the timing of the ARTS 2035 LRTP is likely to result in initiatives that will not be covered by SAFETEA-LU, but will be administered under the new surface transportation act. Currently under review by Congressional committee, STAA 2009 reflects a significant change in the Federal policies regarding surface transportation with an increased emphasis on modal choice and the relationship between land uses and mobility. Federal funding allocation under the draft would tend to favor projects that not only contribute to mobility, but also to the overall sustainability of a





community whether through measurable reductions in greenhouse gas emissions (GHG) or vehicle miles traveled (VMT). Well-connected pedestrian and bicycle networks all have the ability to excel at these measures, and mobility systems and frameworks that pay more than lip service to these modes will have an advantage in funding allocation and prioritization under the new guidelines as proposed. It is anticipated that Congress will fully consider a new surface transportation bill sometime in 2010 with adoption likely in early 2011. In addition to this pending legislation, evidence of the Administration's commitment to sustainability and alternative modes of travel can be found in the Complete Streets Act of 2009 (passed in June 2009) and in the Interagency Partnership for Sustainable Communities formed by the Environmental Protection Agency (EPA), U.S. Department of Transportation (U.S. DOT), and Housing and Urban Development (HUD). This interagency partnership is committed to provide travel choices that minimize the impact on both the built and natural environments through thoughtful community design and provision of non-motorized mobility networks. The partnership set forth a set of guiding principles to ensure more sustainable communities as listed below:

- Provide more transportation choices. Develop safe, reliable, and economical transportation choices to decrease household transportation costs, reduce our nation's dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health.
- Promote equitable, affordable housing. Expand location- and energy-efficient housing choices for people of all ages, incomes, races, and ethnicities to increase mobility and lower the combined cost of housing and transportation.
- Enhance economic competitiveness. Improve economic competitiveness through reliable and timely access to employment centers, educational opportunities, services and other basic needs by workers, as well as expanded business access to markets.
- Support existing communities. Target federal funding toward existing communities—through strategies like transit oriented, mixed-use development, and land recycling—to increase community revitalization and the efficiency of public works investments and safeguard rural landscapes.
- Coordinate and leverage federal policies and investment. Align federal policies and funding to remove barriers to collaboration, leverage funding, and increase the accountability and effectiveness of all levels of government to plan for future growth, including making smart energy choices such as locally generated renewable energy.





- Value communities and neighborhoods. Enhance the unique characteristics of all communities by investing in healthy, safe, and walkable neighborhoods—rural, urban, or suburban.

The ARTS region is uniquely positioned through this update to take advantage of this new wave of thinking on the Federal level. The ARTS 2035 LRTP not only meets the Federal requirements as outlined under SAFETEA-LU, but helps the region take advantage of potential new policies and funding opportunities.

5.2.2 ARTS 2003 Bicycle and Pedestrian Plan

In January 2003, ARTS adopted a Bicycle and Pedestrian Plan that studied bicycle and pedestrian facilities and needs on a region-wide basis, focusing on facilities in place and future needs while identifying and prioritizing a series of initiatives geared toward improving the overall non-motorized transportation network for the region. The study evaluated existing conditions, including a documentation of pedestrian and bicycle facilities in place and in use; incorporated a significant public outreach effort to determine the communities' desires for an integrated bicycle and pedestrian system; established design guidelines for sidewalks, bicycle lanes and on-road provisions, and multi-use trails; established funding sources and strategies for implementation; and developed a list of initiatives for Richmond and Columbia Counties in Georgia and Aiken County in South Carolina to facilitate seamless non-motorized mobility within the region. Results of this planning effort included provisions for multi-use trails as well as retrofits to many area roadways to accommodate cyclists as part of resurfacing projects. The range of retrofit measures included "Share the Road" signage; re-striping to accommodate dedicated bike lanes; and widening to accommodate full width bicycle lanes. Both urban and rural roadways in Richmond, Columbia, and Aiken Counties are included in the project list, and the program presented priorities by available funding over a twenty-year period.

5.2.3 Summary of the Existing System

The ARTS region is unusually well-served by off-road trail systems that accommodate both pedestrians and cyclists, one of the most notable being the Augusta Canal Multi-Use Trail that serves the City of Augusta. Additional multi-use off-road facilities in existence today are as follows:

- Augusta Riverwalk (Downtown Augusta, GA).
- Bartram Trail (Columbia County, GA).
- North Augusta Greenway (North Augusta, SC).
- Euchee Creek Greenway and Trails (Grovetown, GA).





- Lake Olmstead Multi-Use Facility (Augusta, GA).
- Evans to Locks Multi-Use Facility (Columbia County, GA).
- Palmetto Parkway Phase II Greenway (Aiken County, SC).

In addition to these off-road facilities, the area is also proximate to and feeds two Georgia State Bicycle Routes. Route 85 roughly parallels the Savannah River from the North Carolina State Line to Savannah, and Route 50 connects from Augusta west to the intersection with Route 85. These routes are geared toward longer distance riders, but it is important for the more localized facilities to provide seamless connections to these routes.

Each of these facilities has traditionally been conceived and utilized as a recreational trail system; however, one of the stated goals of this study is to enhance the usage of all non-motorized facilities for commute use in addition to their recreational aspects. To accomplish this goal, it is imperative to understand the “gaps” that exist within the system and develop a program by which those gaps can be closed.

The ARTS Bicycle and Pedestrian Study identified a need to incorporate bicycle facilities on roadways within the study area through a series of “Share the Road” signage initiatives and implementation of striped bicycle lanes or wide outside lanes or shoulders when roadways were resurfaced or reconstructed. A tour of the study area found the use of “Share the Road” signs but little to no evidence of striped bicycle lanes. Shoulder widths for both curb and gutter sections as well as rural swale roadways appeared to be at minimum for cycling on most facilities toured.

Dedicated sidewalks throughout the study area are incorporated by and large within the more urbanized areas, but are severely lacking in the more suburban and rural areas, even in newer residential subdivisions. As evidenced by the sidewalk analysis conducted as part of the Safe Routes to School evaluation (following section of this report), many residential areas lack basic sidewalk infrastructure. In the more built-up and older developed areas, sidewalks are often not maintained to the degree needed, and interface facilities such as crosswalks are in need of attention if they exist at all.

5.2.4 Safe Routes to School

At one point, most school children walked or biked to school; however, with the continued expansion of suburban development and subsequent school construction, most children arrive at school via motor vehicle, whether by car or bus. Parents often cite concerns over safety as a major reason they would not let their children walk or bike to school, and a quick site review of most elementary or middle schools confirms





those concerns, as many schools do not have sidewalks or even crosswalks in proximity to the school. Furthermore, many schools do not even connect via sidewalk or trail facilities to nearby residential neighborhoods. To address this lack of consideration of walking and biking as viable school access modes, the Federal Safe Routes to School (SRTS) program was developed.

The program was established by SAFETEA-LU and is funded by the Federal Highway Administration. Each state administers its own program, but the overall program provides funds to the States to substantially improve the ability of elementary and middle school students to walk and bicycle to school safely. The purposes and goals of the program are as follows:

- To enable and encourage children, including those with disabilities, to walk and bicycle to school;
- To make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age; and
- To facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity (approximately 2 miles) of primary and middle schools (Grades K-8).

Differences occur in the programs between states; for example, the radius of eligibility for initiatives in the state of Georgia is 2 miles from an eligible school, whereas in South Carolina, that radius is only 1.5 miles. Funding allocations also vary by state.

Within the ARTS Study Area there are 24 middle schools and 69 elementary schools, making a total of 93 schools eligible for infrastructure funding through the SRTS program. Each of these schools was contacted to offer an opportunity to share issues or concerns that they had with regard to student pedestrian or bicycle access; only one school district had responded to the inquiry at the time of this publication. In addition, a virtual “tour” of each school was conducted using aerial photography to determine the level of sidewalk accessibility available both directly on the school site as well as within the surrounding neighborhood context. The level of existing sidewalk connections to schools located within the study area is shown in **Table 24**. Direct sidewalk access means that sidewalk facilities connect the school campus to adjacent residential or mixed-use developments. The levels of sidewalk access refer to the provision of facilities in the vicinity of the school site and are measured as follows:

- None – no sidewalk connectivity.





- Poor – one or more sidewalk facility within a half mile of the school.
- Fair – more than one sidewalk facility within a quarter mile of the school.
- Good – direct sidewalk connectivity to neighborhoods.





Table 24: Sidewalk Access to Elementary and Middle Schools

School	County	State	Direct Sidewalk Access?	Level of Sidewalk Access
Aiken Elementary	Aiken	SC	No	None
Chukker Creek Elementary	Aiken	SC	No	None
East Aiken Elementary	Aiken	SC	No	None
J. D. Lever Elementary	Aiken	SC	Yes	Poor
Millbrook Elementary	Aiken	SC	Yes	Fair
North Aiken Elementary	Aiken	SC	No	None
Aiken Middle School	Aiken	SC	No	None
Kennedy Middle School	Aiken	SC	Yes	Fair
Schofield Middle School	Aiken	SC	Yes	Fair
Belvedere Elementary	Aiken	SC	Yes	Fair
Hammond Hill Elementary	Aiken	SC	Yes	Fair
North Augusta Elementary	Aiken	SC	Yes	Fair
North Augusta Middle School	Aiken	SC	No	Poor
Paul Knox Middle School	Aiken	SC	Yes	Fair
Mossy Creek Elementary	Aiken	SC	No	None
Byrd Elementary	Aiken	SC	No	Poor
Clearwater Elementary	Aiken	SC	No	None
Gloverville Elementary	Aiken	SC	No	None
Jefferson Elementary	Aiken	SC	No	None
Warrenville Elementary	Aiken	SC	No	None
LBC Middle School	Aiken	SC	Yes	Poor
Leavelle McCampbell Middle School	Aiken	SC	Yes	Fair
Busbee Elementary	Aiken	SC	No	Poor
Ridge Spring-Monetta Elem./Middle	Aiken	SC	No	Poor
A. L. Corbett Middle School	Aiken	SC	No	Poor
Belair Elementary	Columbia	GA	No	Poor
Blue Ridge Elementary	Columbia	GA	No	Poor
Brookwood Elementary	Columbia	GA	No	None
Evans Elementary	Columbia	GA	No	None
Greenbrier Elementary	Columbia	GA	No	Fair
Grovetown Elementary	Columbia	GA	No	None
Lewiston Elementary	Columbia	GA	No	Poor





Table 24: Sidewalk Access to Elementary and Middle Schools (Continued)

School	County	State	Direct Sidewalk Access?	Level of Sidewalk Access
Martinez Elementary	Columbia	GA	No	Poor
River Ridge Elementary	Columbia	GA	No	None
Riverside Elementary	Columbia	GA	No	None
South Columbia Elementary	Columbia	GA	No	None
Stevens Creek Elementary	Columbia	GA	No	None
Westmont Elementary	Columbia	GA	Yes	Poor
Greenbrier Middle	Columbia	GA	No	Fair
Grovetown Middle	Columbia	GA	No	Fair
Riverside Middle	Columbia	GA	No	None
Evans Middle	Columbia	GA	No	None
Stallings Island Middle	Columbia	GA	No	None
Cedar Ridge Elementary	Columbia	GA	Yes	Fair
Lakeside Middle	Columbia	GA	Yes	Poor
Tutt Middle School	Richmond	GA	Yes	Poor
Lamar-Milledge Elem School	Richmond	GA	Yes	Fair
Murphey Middle School	Richmond	GA	Yes	Fair
Wilkinson Gardens Elem School	Richmond	GA	Yes	Poor
John S. Davidson Magnet School	Richmond	GA	Yes	Fair
W. S. Hornsby Elem School	Richmond	GA	Yes	Fair
A. R. Johnson Magnet School	Richmond	GA	Yes	Good
Goshen Elem School	Richmond	GA	Yes	Poor
Gracewood Elem School	Richmond	GA	Yes	Fair
Southside Elem School	Richmond	GA	Yes	Poor
Sego Middle School	Richmond	GA	No	Poor
Rollins Elem School	Richmond	GA	Yes	Poor
Glenn Hills Elem School	Richmond	GA	No	None
Willis Foreman Elem	Richmond	GA	Yes	Poor
Spirit Creek Middle School	Richmond	GA	Yes	Poor
Collins Elem School	Richmond	GA	Yes	Fair
Glenn Hills Middle School	Richmond	GA	No	None
Jamestown Elem School	Richmond	GA	Yes	Poor
Morgan Rd Middle School	Richmond	GA	Yes	Poor
Barton Chapel Elem School	Richmond	GA	No	None
Bayvale Elem School	Richmond	GA	Yes	Fair
Hains Elem School	Richmond	GA	Yes	Fair
Lake Forest Hills Elem School	Richmond	GA	Yes	Fair
Wheless Rd. Elem School	Richmond	GA	Yes	Fair





School	County	State	Direct Sidewalk Access?	Level of Sidewalk Access
Windsor Spring Elem School	Richmond	GA	Yes	Poor
Tobacco Rd. Elem School	Richmond	GA	Yes	None
National Hills Elem School	Richmond	GA	Yes	Poor
Terrace Manor Elem School	Richmond	GA	Yes	Good
C. T. Walker Traditional Elem School	Richmond	GA	Yes	Good
Blythe Elem School	Richmond	GA	No	Poor
Hephzibah Middle School	Richmond	GA	Yes	Poor
Hephzibah Elem School	Richmond	GA	Yes	Fair
Langford Middle School	Richmond	GA	Yes	Fair
Academy of Richmond County	Richmond	GA	No	Fair
Copeland Elem School	Richmond	GA	Yes	Fair
Garrett Elem School	Richmond	GA	Yes	Poor
Monte Sano Elem School	Richmond	GA	Yes	Good
Reynolds Elem School	Richmond	GA	Yes	Poor
Jenkins-White Elem School	Richmond	GA	Yes	Good
Craig-Houghton Elem School	Richmond	GA	Yes	Fair
McBean Elem School	Richmond	GA	Yes	Poor
Merry Elem School	Richmond	GA	Yes	Fair
Warren Rd. Elem School	Richmond	GA	Yes	Fair
Freedom Park Elem School	Richmond	GA	Yes	Good
Deer Chase Elem	Richmond	GA	Yes	Poor
Diamond Lakes Elem	Richmond	GA	Yes	Poor
Pine Hill Middle School	Richmond	GA	Yes	Fair

It is evident from the results of the sidewalk access analysis that most schools do not provide adequate accessibility from a sidewalk and neighborhood connectivity standpoint, and provision of facilities in the vicinity of the schools that are within walking distance of residential neighborhoods should be a priority. As expected, schools that do score well are those that are located in older, more established neighborhoods in the urban areas. In addition, any infrastructure initiatives within a two-mile (Georgia) or 1.5-mile (South Carolina) radius of one of the eligible schools would qualify for SRTS funding if the initiative made a positive contribution to the overall pedestrian or bicycle accessibility to the school. Identified initiatives through this plan update can be considered for SRTS funding if they are located within these radii and contribute to the safety of children who walk or bike to school.





5.2.5 Americans with Disabilities (ADA) Compliance

The Americans with Disabilities Act (ADA) is a federal law that prohibits discrimination on the basis of disability in all services, programs, and activities provided to the public by state and local governments. The Act dictates a minimum sidewalk width of five feet; and thus five feet has become the recommended design standard for sidewalks throughout the United States, including Georgia and South Carolina. Most sidewalks in the ARTS area are built to this standard; however, there are many areas where sidewalks are not constructed or gaps exist in the sidewalk network. The ARTS Bicycle and Pedestrian Plan set forth a goal to close those gaps, and the continuation of that effort is recognized in this Plan Update as well.

In addition to sidewalk width, ADA provides guidance on the design of accessible routes including curb ramps. Ramps should be located so that they do not extend into vehicular traffic lanes. Other measures such as audible pedestrian signal heads and the use of truncated domes on the curb ramps may be considered in higher traffic (combined vehicle and pedestrian) locations, such as Downtown Augusta and Aiken and on major commercial thoroughfares such as Whiskey Road in Aiken and Washington Road in Augusta.

5.3 Needs Identified in Bicycle and Pedestrian Plan

The ARTS Bicycle and Pedestrian Plan identified a program of general needs and specific bicycle projects. General needs are as follows:

- Development and implementation of a bicycle and pedestrian program, including an education program, a safety program, and an enforcement program.
- Development of a comprehensive and bicycle-friendly maintenance program.
- Installation of bicycle racks on transit vehicles and consideration of additional bus shelters for stops as well as provision of bicycle lockers for stations.
- Linking the land use and transportation planning processes to comprehensively integrate bicycle and pedestrian facilities into new and redevelopment as well as the overall regional land use planning processes such as comprehensive and long-range planning.
- Identifying and capitalizing on avenues for funding of facilities by coordinating with other funded improvements and incorporating bicycle and pedestrian facilities into those projects.
- Increasing interagency coordination through the creation of a Regional Bicycle and Pedestrian Steering Committee among the various jurisdictions within ARTS





to capitalize on a cohesive, consensus-driven area-wide support for facility development and implementation.

- Establish a system of performance measures to evaluate the performance of the existing system as well as the success of the program over the next 20 years.

As stated previously, the focus of the ARTS 2035 LRTP is to identify areas that contribute to the ability of the non-motorized system to accommodate non-recreational traffic in a seamless manner. A total of 160 bicycle projects were identified in the 2003 ARTS Bicycle and Pedestrian Plan. The project list includes the following types of projects:

- Bike Lanes (BL).
- Bike Route (BR).
- Multi-Use Trails (MU).

The list includes a significant amount of additional multiuse trail initiatives (41 of 162 total projects), many geared toward expanding and connecting the already existing trail system into a truly connected regional system. In addition to the needs outlined in the Bicycle and Pedestrian Plan, some additional needs from a policy standpoint are presented as follows:

- A comprehensive inventory of sidewalk facilities should be conducted to prioritize enhancements necessary to bring the system to a standard by which all pedestrians could consider using the system as a cohesive, integrated, and seamless travel option.
- The jurisdictions may wish to consider development and adoption of a Complete Streets Policy to address new roadway construction and retrofits of existing roadways. Considerations for motor vehicles should be balanced with the provision of facilities for transit riders, cyclists, and pedestrians to create a seamless mobility system in which choices between modes are feasible for all users. SCDOT has such a policy in place, and the jurisdictions may wish to consider refining and adopting a similar policy to insure that all new construction as well as resurfacing and enhancement projects adequately consider the creation of Complete Streets within the ARTS region.
- Consider installation of bicycle racks on all buses in service by both Augusta Public Transit (APT) and Aiken County Transit/Best Friend Express.
- Establish a series of major thoroughfares to be comprehensively studied from a walkability perspective to identify opportunities to increase pedestrian safety and viability of walking and cycling along these corridors. Subject corridors





should include Washington Road (Augusta and Columbia County), US 1/US 78 (Augusta and Aiken County), as well as others identified in the highway needs portion of this effort.

- Incorporate walkability and bikeability initiatives in any enhancement or retrofit project; specifically opportunities to repair or widen deficient or nonexistent sidewalks; establish dedicated bicycle facilities; and close modal gaps between motorized and non-motorized modes.
- Coordinate with the area school systems to comprehensively integrate SRTS initiatives and funding opportunities into developed initiatives. Educate the school systems as to the opportunities available through the SRTS program.

5.4 Agency Coordination Strategy

In an area such as ARTS where not only multiple local jurisdictions but two states govern the MPO area, it is often a challenge to develop consensus for initiatives or programs. From a bicycle and pedestrian system perspective, the coordination should commence at the MPO level, as an increased role and presence by the Regional Bicycle and Pedestrian Steering Committee established as part of the Bicycle and Pedestrian Study. Agencies and local governments that should be coordinated with on a timely basis for all initiatives area as follows:

- City of Augusta
- City of North Augusta
- City of Aiken
- City of Blythe
- City of Hephzibah
- City of Grovetown
- Town of Burnetown
- Richmond County
- Columbia County
- Aiken County
- GDOT
- SCDOT
- Transit Agencies

From a state DOT perspective, each DOT has a designated Bicycle and Pedestrian Coordinator. These contacts should be informed and briefed as much as practical to be kept abreast of issues and opportunities as the ARTS area takes advantage of its existing system and grows into a true, interconnected multimodal region.





5.5 Public Transportation Needs

5.5.1 Regional Coordination of Public Transportation Services

During the APT Transit Development Process, many stakeholders indicated an interest in public transportation both as sponsors of the concepts and also as potential users of the system. That perspective has also been registered as part of the survey work for this study, where two of the top three rated responses to methods to reduce congestion question were expanding and coordinating transit and adequate and dedicated transit funding.

As indicated previously, there are three service providers in the region. APT provides 10 fixed route services, complementary ADA paratransit and rural demand responsive operations. Best Friends Express offers three fixed route services, including a connection at the APT Transfer Center, plus ADA paratransit. Columbia County Transit supplies demand responsive transit services throughout the county but does not connect to APT or Best Friends Express fixed route system. With regard to potential expanded service collaboration and coordination, there were several alternatives discussed in the APT TDP, as well as preliminary route recommendations contained in the Augusta Streetcar Feasibility Study.

The potential for increased collaboration and coordination is based on a number of factors. First, as can be seen in the 2035 population density map (**Figure 5**), the main growth is anticipated to extend outward to the west into Columbia County, although southern Richmond County and areas of Aiken County are also anticipated to grow over the next 25 years. Much of the economic activity, however, will continue to be concentrated in the Cities of Augusta, North Augusta, and Aiken. Thus, there will be increased opportunities for public transportation connections from the areas to the west, east, and south into these core economic activity centers. The APT TDP began to address these opportunities by suggesting an initial direct route from the southern part of Augusta to downtown, which would be enhanced by a park-and-ride lot and rural service connections from south Augusta. In addition, an extension of the Washington Road service into Columbia County was also noted as a logical continuation of a well-served corridor. Finally, in addition to the Streetcar Study report, it was noted that more frequent connections to Best Friend Express Service and North Augusta, with continued service to Aiken, would provide more mobility options to local residents in the ARTS area.

Thus, there is a need for an improved transit vision for the region. In the near future the MPO should coordinate with Augusta Public Transit, Best Friends Express, and





Columbia County Area Transit, and all other relevant agencies in order to develop a comprehensive transit vision. It is hoped that a combined effort with all transit providers will result in a vision that outlines necessary expansions in transit services throughout the ARTS area. Once these new service opportunities are identified, a region wide analysis should occur that identify short term plans allocating funding according to the greatest rider benefits and improvements in air quality.

5.5.2 Paratransit Coordination

Based on time and resource allocation constraints, the APT TDP did not contain an in-depth analysis of paratransit services, including the potential for increased coordination and collaboration. Although all three counties provide these services, some dedicated to those eligible for ADA paratransit and some that are not, there would appear to also be potential to consider resource sharing and other concepts.

For example, the Mobility Services for All Americans grant received by the Lower Savannah Council of Governments is based on the premise that improved technology can be the foundation for creating a Travel Management Coordination Center. That Center could act in a number of different ways to accept calls, schedule and dispatch services, create billing and use records, etc. These activities could arguably be performed at a larger regional scale, which could then influence other capital and operating options and alternatives for the ARTS region. Although commingling activities with multiple programs and jurisdictions, including two states, contains a number of anticipated infrastructural issues, the reinforced attention to livability includes the fact that residents do not live their lives based on jurisdictional boundaries. Thus, coordinating or providing paratransit services is a logical means to improve mobility in rural areas and for those persons that cannot access the fixed route system.

The MSAA program in reality is an outgrowth of the United We Ride process which began in the prior administration as the latest effort to address coordination of public transit and human service transportation. In many areas around the country, which would be true for the ARTS area as well, agencies indicated that coordination could not be accomplished because it would require additional staff resources and existing staffing had been allocated to critical core activities. To address this situation, the FTA approved up to 85% federal funding for a Mobility Manager position, which could address these additional coordination activities. That funding opportunity has been used in many locales where various federal fund sources could not be used. Since there are a number of regional health and social service agencies located in the greater Augusta area, there is a need to better coordinate availability of services for potential users. This is not to say that an agency such as APT would need to operate





those services, but rather that all those services would be contained in a roster of services that could be accessed through a single phone line coordinated by the Travel Management Coordination Center. These concepts have worked well in other areas of the country and could also be considered in the ARTS region.

5.6 Preparing for Change

The ARTS area is the largest population and employment center between Atlanta, GA and Columbia, SC, and this region serves as the center for work, healthcare, shopping, and recreation for many area residents. The ARTS area continues to grow and an intrinsic characteristic of a growing area is the need to improve the multimodal transportation system. Over the last decade, this growth has been mostly concentrated in Columbia County, while the other three counties have grown modestly.

By 2035, the ARTS area will be approaching a population of 550,000, and one of the reasons is that the region is supported by vibrant health care institutions, Fort Gordon, Savannah River Site, Plant Vogtle, and Fortune 500 companies. With these large employers, the ARTS area is projected to grow significantly over the next 20 years. It is anticipated that over the next eight years, more than \$14 billion (most of it not federal stimulus money) will be poured into projects at Fort Gordon, Plant Vogtle, and Savannah River Site, creating thousands of temporary construction jobs and permanent high-tech jobs in the ARTS area. Mark Thompson, the Cree-Walker Chair of Business Administration at Augusta State University noted in April 2009 that this will “. . . almost double the size of the region’s economy.” This new growth requires identifying feasible multimodal transportation improvements to ensure the ARTS area transportation network is developed to address and accommodate the new growth, as well as address the system’s existing needs. Viable mobility options, such as public transportation, carpooling, etc., need to be explored because the ARTS area cannot build its way out of the projected growth, due to financial and environmental constraints. The roadway improvements identified need to be grounded in context-sensitive solutions that exercise flexibility and creativity to shape effective transportation solutions. Improving roadway connectivity from local and collector roads to arterials and freeways is crucial, as this will open the transportation system and make it more efficient.

The existing ARTS roadway network and the recent transportation improvements, such as the widening of I-20 to six lanes and the opening of I-520, the Palmetto Parkway, in Aiken County, provide a sustainable foundation to build upon. The 2035 E+C network shows slight VMT reductions, encouraging reductions in VHD, and improvements in LOS throughout the ARTS area.





In order to address the large increases in VMT, VHT and VHD and subsequent unacceptable level of service between 2006 and 2035, the ARTS 2035 LRTP must collaborate with partnering agencies to ensure the projects, programs, and policies support, promote, and sustain a balanced and superior twenty-first century multimodal transportation system. The next section of the LRTP introduces the multimodal transportation improvements that are needed to prepare the ARTS area for the projected change. The multimodal improvements identified address each of the seven LRTP goals and the eight federal planning factors. Combined, these identified improvements improve safety, modal connectivity, livability, and traffic operations throughout the ARTS area.





6. Multimodal Transportation Improvements

The ARTS 2035 LRTP is a bold and ambitious multimodal vision that meets the eight planning factors identified in SAFETEA-LU, Title VI of the Civil Rights Act, the Americans with Disabilities Act, Executive Order 12898 on Environmental Justice, and the seven ARTS goals. Long-term growth and development will be sustained and created by implementing the multimodal transportation investments contained in the ARTS 2035 LRTP.

The development patterns projected in the ARTS area in 2035, in coordination with the multimodal transportation improvements, set the stage for a well-connected multimodal transportation network that provides enhanced mobility and accessibility for all travelers. As noted earlier, the ARTS area population is projected to grow 36 percent and employment 29 percent over the next 25 years and the multimodal transportation investments will support existing businesses and encourage new industries and freight providers to locate in the ARTS area.

Streetscape and operational improvements along developing corridors and gateways will improve mobility and in turn provide the opportunity to stimulate economic and community development investments throughout the ARTS area. Coordinating regional transit routes and providing park-and-ride lots at key locations will provide additional mobility options to local residents. Connecting major gaps in the bicycle and pedestrian networks will improve multimodal mobility by providing convenient, seamless alternative choices for people who cannot, or do not wish to, use an automobile for every trip. Key transportation investments that will make the ARTS 2035 LRTP a reality include the following projects:

- Improve regional mobility and accessibility around the ARTS area with investments such as:
 - Coordinating regional transit services and extending transit service to growing areas.
 - Connecting the regional bicycle and pedestrian network to the four counties and to both states to enhance local bicycle and pedestrian system mobility.
 - Construct a bicycle and pedestrian bridge over the Savannah River adjacent to the 5th Street bridge or use the existing 5th Street bridge.
- Improve interstate mobility and accessibility by:





- Widening I-20 from four to six lanes between the Savannah River and Bettis Academy Road (Exit 11) in Aiken County South Carolina.
- Widening I-20 from four to six lanes between the McDuffie/Columbia County line and Belair Road (SR 383) in Columbia County Georgia.
- Upgrading the I-20 and Martintown Road interchange (Exit 1) in Aiken County South Carolina.
- Distribute traffic to reduce growth impacts on main travel corridors by:
 - Limiting access points to a few well-designed intersections and interchanges.
 - Extending existing roads and constructing strategic connections to promote economic development.
- Expand transit and ridesharing choices by:
 - Establishing regional transit hubs to coordinate the three transit systems in the ARTS area.
 - Constructing a park-and-ride facility adjacent to I-20 in Columbia County at Exit 190 (Lewiston Road/Horizon South Pkwy) in SW or NE Quad.
 - Constructing a park-and-ride facility in the vicinity of US 78 (Gordon HWY) and Jimmie Dyess Parkway in Richmond County.
 - Constructing a park-and-ride facility in the vicinity of US 1 (Deans Bridge RD) and Tobacco Road in Richmond County.
 - Constructing a park-and-ride facility in the vicinity of US 25 (Peach Orchard RD) and Tobacco Road in Richmond County.
 - Constructing a park-and-ride facility adjacent to I-20 in Aiken County in the northwest quadrant at the Edgefield Highway/US 25 interchange at Exit 5 (this project is scheduled for construction in FY 2010).
 - Constructing park-and-ride facility along US 1 near I-20 Exit 22 in Aiken County.
- Enhance regional gateways from I-20 and I-520 into downtown areas and emphasize the transition into vibrant city centers with pedestrian friendly, attractive streetscape improvements.
- Improve overall system efficiency by developing a regional/bi-state transportation management and operations center.





6.1 Setting Priorities

Given the likelihood of continued restrictions on state and federal transportation funds during the coming decades, the MPO has chosen a conservative approach to evaluating and designating selected projects for funding in its “fiscally constrained” LRTP. The following sections provide information about the projects, programs, and policies that guided the development of the ARTS multimodal transportation system over the next 25 years, culminating with a list of the specific infrastructure investments, programs and policies the MPO will pursue. The next section focuses on overarching policies and guidelines the MPO will use to help set priorities and evaluate potential strategies for making these investments, and closes with some “next steps” the MPO can take to advance the 2035 LRTP by fostering collaboration and providing support to local governments and agencies throughout the region.

6.2 Policies for Balancing Regional Transportation Investments

Investments in the ARTS transportation system can come in a variety of forms, from new roads and transit services to greenways and gateway corridor enhancements. The ARTS 2035 LRTP planning process that the MPO used to develop this Plan resulted in a variety of specific multimodal transportation projects. Some of these projects are major investments that will require significant investment, such as the widening of I-20. Some are low cost “quick fixes” that could be implemented quickly, such as the intersection improvements.

Over the last 50 years, roadway capacity investments have dominated federal and regional transportation programs across the nation. However, during the course of the public outreach and public participation meetings conducted during the ARTS 2035 LRTP, the message was consistent that in order to advance the quality of life in the ARTS area, it is time to strengthen regional and local connections of all kinds, from streets and sidewalks to bicycle routes and transit services.

6.2.1 Modal, Geographic, and Project Policies

Concurrent with recent shifts in federal guidance and regulations, local residents and businesses in the ARTS area desire a balanced approach to identifying and implementing transportation investments in the twenty-first century. This need for balance is multi-faceted, applying to more than the need to invest in a broader array of transportation modes. In addition to investing in all modes of transportation, the ARTS 2035 LRTP identifies multimodal projects across the entire region that will improve mobility, reduce extreme congested corridors, and in turn will improve air quality in the ARTS area. These concepts are summarized by the following policy statements:





- **Modal Policy:** While the MPO recognizes that the automobile is the dominant mode of transportation in the ARTS area, promoting all modes of transportation in the LRTP, including bicycle, pedestrian, and transit, is essential to address the LRTP goals and exceed local expectations.
- **Geographic Policy:** While the MPO plans at a regional level, striving to develop an equitable balance of funding across the region, understanding that the Georgia and South Carolina portions of the region have separate and dedicated funding streams is critical to supporting and sustaining growth through the ARTS area.
- **Project Type Policy:** While the MPO understands the importance of major system expansion efforts, investing in projects that address the following will strengthen the ARTS multimodal transportation:
 - **System Preservation:** The MPO, in coordination with GDOT and SCDOT, will make the investments that are necessary to maintain its current assets in a state of good repair (e.g., roadway repair, resurfacing, and reconstruction).
 - **System Expansion:** The LRTP identifies projects that increase the capacity of the ARTS system in order to meet current and future demands and in turn will improve corridor safety and encourage additional economic development opportunities (e.g., new roadway and transit services).
 - **System Efficiency/Safety:** The LRTP invests in projects that make current transportation assets operate more effectively, efficiently, and safely (e.g., intersection improvements, ITS solutions).
 - **System Quality:** The LRTP invests in projects that offer additional transportation options and improve the appearance of existing facilities (e.g., pedestrian and bicycle facilities, transit passenger amenities, street/landscaping, and wayfinding).

6.2.2 Aiken County Multimodal Policies

In 2009, the South Carolina Subcommittee of the ARTS Policy Committee approved the following transportation policies to

- Provide vehicular connectivity.
- Include bike lanes, sidewalks, multi-purpose trails.
- Provide bike lane, sidewalk and trail connectivity.
- Provide for traffic calming where appropriate and necessary.
- Consider future transit needs.
- Apply other road diet and Complete Streets techniques where appropriate.





These policies are integrated into the ARTS 2035 LRTP project prioritization process to identify projects in the LRTP and the Transportation Improvement Program.

6.2.3 Complete Streets Policy

One of the objectives of the ARTS 2035 LRTP is to continue to implement and promote strategies and policies such as system preservation, access management, managed lanes, travel demand management, mass transit, Complete Streets, and alternative transportation to improve congestion conditions. Complete Streets refers to a concept by which streets are designed to accommodate all users in a balanced fashion, and not be geared simply toward moving as many cars as quickly as possible. Thus, Complete Streets are designed to accommodate autos, trucks, transit vehicles, pedestrian, and cyclists. The following requirements are documented in the Complete Streets Act of 2009:

- States and Metropolitan Planning Organizations (MPOs) must implement Complete Streets policies.
- Two years after enactment, States and MPOs have in effect a State law, State department of transportation policy, or MPO policy that accommodates the safety and convenience of all users of the transportation system in accordance with Complete Streets principles.
- This Complete Streets policy requirement applies to new road construction and road improvement projects, including design, planning, construction, reconstruction, rehabilitation, maintenance, and operations along the entire right-of-way.
- The Complete Streets policy requirement applies only to projects that receive federal transportation funding.
- Complete Streets–acceptable projects must fit within the local community context.
- New road construction or modification projects that are at least 30 percent of the way through the design phase on the day that a Complete Streets law or policy goes into effect are exempt.
- There is a clear procedure by which individual projects may be exempted from compliance with Complete Streets principles, including in cases where
 - Affected roadways prohibit specified users, such as on freeways.
 - The cost of applying Complete Streets principles would be excessively disproportionate to the need or probable use of a given complete street.





- The number of people who live and work (or who will likely live and work) in a particular area is low enough that there is a documented absence of need for Complete Streets.
- State departments of transportation and MPOs that are implementing Complete Streets policies must do so throughout the project development, planning, and delivery process.
- Each State department of transportation is to submit a report to the Secretary of Transportation describing the implementation of Complete Streets policies within that State, and gives the Secretary the authority to determine whether a State is in compliance with Complete Streets requirements.

Complete Streets policies encourage modal integration and one of the benefits of providing mobility choices is a healthier community. A 2003 study found that 43 percent of people with safe places to walk within 10 minutes of their home met recommended activity levels compared to just 27 percent of people without safe places to walk.²⁹ Also, people are 65 percent more likely to walk in neighborhoods with sidewalks.³⁰ Complete Streets enhances mobility and pedestrian safety, and it also has the potential to improve air quality in the ARTS area. Including Complete Streets concepts at the planning and design levels is fiscally responsible, since it spares the expense of retrofitting facilities to accommodate bicycle, pedestrian, and transit improvements.

6.2.4 Performance Measure Policy

Currently there are no requirements to attain explicit performance thresholds, such as reducing congestion or improving highway safety, built into the federal planning requirements for MPOs.³¹ However, performance-based planning is being discussed at the national level and it is anticipated that the next surface transportation act will require MPOs to develop a performance-based planning process during the development of their LRTP. To the extent possible, the ARTS 2035 LRTP is the first attempt by the MPO to develop a performance-based LRTP.

The key to developing a performance-based LRTP requires sufficient data to develop baseline measures and the time involved in monitoring the measures. At this time, the

²⁹ Powell, et al., *Places to walk: Convenience and Regular Physical Activity*. American Journal of Public Health 93.0 (2003): 1519-1521.

³⁰ Giles-Corti, *The Relative Influence of Individual, Social, and Physical Environmental Determinants of Physical Activity*, Social Science & Medicine 54.12 (2002): 1973-1812.

³¹ GAO-09-868 Metropolitan Planning Organizations. September 2009.





ARTS travel demand model provides useful measures that can be benchmarked and monitored to evaluate actual and planned improvements in the ARTS area. Also, GDOT and SCDOT collect data associated with pavement condition and safety measures. The following provides some general highway, public transportation, bicycle and pedestrian measures, and safety measures reviewed during the LRTP planning process. Even though federal performance measure requirements and rules are not currently established, this effort begins the process of developing a performance-based LRTP in the ARTS area that is directly linked to the goals.

Highway Measures:

- **Vehicle Miles of Travel (VMT):** The sum vehicle miles of travel on the major roadway network computed from the annually counted traffic volumes on the major roadway system.
- **Percent VMT at Volume to Capacity (v/c) less than 0.70:** The percentage of VMT on roads where traffic volumes are less than 70 percent of the road's capacity level. Typically, these roads are operating under efficient conditions and don't require capacity improvements.
- **Percent VMT at Volume to Capacity (v/c) 0.70 or worse:** The percentage of VMT on roads where traffic volumes are at 70 percent, or worse, of the road's capacity level. Typically, roads that have a v/c ratio between 0.70 and 0.85 are defined as roads that are beginning to experience slightly congested conditions, especially during the peak travel times.
- **Percent VMT at Volume to Capacity (v/c) 0.85 or worse:** The percentage of VMT on roads where traffic volumes are at 85 percent, or worse, of the road's capacity level. Typically, roads that have a v/c ratio between 0.85 and 1.00 are defined as roads that are nearing complete congestion.
- **Percent VMT at Volume to Capacity (v/c) 1.00 or worse:** The percentage of VMT on roads where traffic volumes are at 100 percent, or worse, of the road's capacity level. Typically, roads that have a v/c ratio greater than 1.00 are defined as roads that are severely congested and require capacity improvements or other mobility option improvements, such as public transportation improvements, to reduce vehicles on the roadway.





Public Transportation Measures:

- **Revenue Miles:** The total number of miles driven on the fix-route bus system to generate passenger revenue.
- **Passenger Trips:** The total number of trips (people boarding buses) on all fixed routes throughout the entire system.

Bicycle and Pedestrian Measures:

- **Connectivity of Segments:** The network of bike paths and pedestrian facilities must provide a continuous connection between trip origins and destinations. This measure evaluates the potential for a segment to enhance the continuity of the overall network.
- **Proximity to Attractions:** This measure determines demand by identifying the facilities that generally attract bicycle and pedestrian demand. Attractions such as schools, parks, shopping centers, libraries, and other government buildings attract higher levels of bicycle and pedestrian activity.
- **Proximity to Transit:** This measure evaluates the bicycle and pedestrian system direct connectivity to public transportation fixed route service.

Pavement Measures:

- **Present Serviceability Rating (PSR)** – PSR is a subjective rating based primarily on ride quality. PSR is estimated using the judgment of an observer as to the current ability of a pavement to serve the traffic it is meant to serve.³² PSR rankings are from zero to five, with five being the smoothest condition.

Safety Measures:

- Fatalities per million VMT.
- Roadways higher than the statewide crash average by functional classification.
-

6.2.5 Land Use and Transportation Coordination Policy

One of the goals of the ARTS 2035 LRTP is to promote efficient land use and development patterns (Goal 5). During the development of an LRTP, the identified

³² Washington State Department of Transportation Pavement Guide.





projects, programs, and policies can foster meaningful opportunities to integrate land use and transportation planning opportunities. Ensuring that multimodal transportation improvement support local existing and future land uses will provide improved traffic operations, mobility, and safety and in turn can save future transportation dollars to be used on other critical improvements in the ARTS area. The MPO does not have control of land use policy in the ARTS area, and it is critical that as land use patterns change coordination between the MPO and the local jurisdiction is established or maintained to ensure the ARTS projects, programs, and policies continue to support land development. Another crucial aspect in ensuring the multimodal projects identified in the LRTP can be implemented is for local jurisdiction to protect right-of-way along planned capacity adding corridors. While this is difficult to enforce at the local level, local jurisdictions should strongly encourage right-of-way preservation during the permit process.

6.2.6 Consistency and Coordination Plan Policy

One of the goals of the ARTS 2035 LRTP is to develop a transportation system that is integrated with local land use plans (Goal #1). It is particularly important that the projects, programs, and policies identified in the ARTS 2035 LRTP be consistent with and coordinate with local county comprehensive plans in the study area. Ensuring the regional vision matches local values was a key determinant in developing the ARTS 2035 LRTP. For instance, all projects must be consistent with the county comprehensive plans for inclusion in the LRTP.

6.2.7 Environmental Policy

One of the objectives of the ARTS 2035 LRTP is to avoid historic areas and structures and other environmentally sensitive areas (Goal 3, Objective 4). SAFETEA-LU requires that MPOs examine, at a program level, possible impacts to resources in the ARTS area by proposed transportation improvements. Resources include green spaces, historic resources, and bodies of water. Mitigating encroachments to these projected areas at the planning level is crucial to ensure the plan can feasibly implemented. There are numerous green spaces, historic resources, and bodies of water in the ARTS area, but the multimodal projects identified in the LRTP do not appear to negatively impact these areas in a detrimental way from a planning perspective.

6.2.8 Context Sensitive Solution Policy

One of the goals of the ARTS 2035 LRTP is to preserve and enhance the natural and built environments through context sensitive solutions that exercise flexibility and creativity to shape effective transportation solutions (Goal 5, Objective 4). One of the advantages of developing a project using CSS is that the process can speed up and ease the review and approval processes. Rather than waiting until the end of the project for





review and approvals by state and local agencies, these entities are involved as stakeholders in the process from the very beginning.³³ CSS identifies community concerns early in the design phase and in the end it helps avoid conflict and community opposition at the approvals stage of a project. While most of the widening projects identified in the ART 2035 LRTP would benefit by incorporating CSS, the following projects are well suited for CSS:

- Widening Five Notch Road (S-45) between Georgia Avenue (US 25 Business) and Walnut Lane in Aiken County.
- Widening of Edgefield Highway (SC 19) between I-20 and University Parkway (SC 118) in Aiken County.
- Widening Pine Log Road (S-65) between US 278 (Williston Road) to S-66 (Huber Clay Road).
- Widening Wrightsboro Road (CR 1501) between Jimmie Dyess Parkway and I-520 in Richmond County.
- Widening Windsor Spring Road.
- Widening 15th Street.

6.2.9 Intelligent Transportation System Policy

One of the goals of the LRTP is to develop a transportation system that will allow effective mobility throughout the region and provide efficient movement of persons and goods. One of the ways to accomplish this goal is to have an integrated regional ITS system that brings together all jurisdictions at the MPO level to coordinate, plan, and design an ITS system that will improve congestion, safety, security, and air quality. The coordination should occur at the regular MPO committee meetings and special meetings should be scheduled to thoroughly plan and design the regional system.

6.3 Highway Improvements

6.3.1 Addressing Congestion under Numerous Constraints

As described in **Section 5.1**, the ARTS area will experience severe congestion on many critical roadways based upon the projected regional growth. A region's roadway network is the most critical and substantial element of the transportation system. The roadway system provides the primary foundation for a comprehensive, multimodal transportation environment. Roadways and their additional components, such as sidewalks, bike lanes, and transit stops are used by nearly everyone in the region and

³³ Context Sensitive Solutions.Org





facilitate movement for a variety of modes of travel, including walking, bicycling, driving, and transit, as well as the movement of freight by commercial vehicles. As noted earlier, driving a personal vehicle is clearly the dominant form of travel in the United States today, a fact even more evident in the ARTS area. Although it is somewhat unrealistic and naïve to expect that personal vehicles will not continue to be the primary mode of transportation in our long-term future, ARTS residents can be optimistic about opportunities to add capacity to critical corridors and at the same time nurture the growth of alternative transportation modes based on the improvements identified in this LRTP.

As the ARTS area plans for and evaluates the transportation infrastructure needs over the next 25 years, it is clear that continued growth and development pressures and increasing travel demands will be placed on the existing ARTS roadway system. Roadway construction and other improvements are therefore needed in order to address critical congested corridors and regional mobility. Even with implementing transit, bicycle, and pedestrian improvements, an increased usage of transit, bicycling, and walking would not substantially eliminate the need for additional roadway capacity improvements or new roadway facilities because even the very worst roadways would still remain congested or new connections will need to be constructed to improve connectivity.

However, there are limitations to constructing new facilities and adding capacity to existing ARTS roadway system. Natural and man-made barriers exist that hinder roadway improvements. Additionally, traditional methods of building new roadways or adding capacity to existing roadways typically cannot be done fast enough to meet the future transportation and mobility needs of a region. Further, adequate federal, state, and local funding resources are simply not available to implement expensive solutions to resolve all existing and future congestion in the ARTS roadway system. Most importantly, new air quality regulations that will be announced on August 30, 2010 may designate the ARTS area as a nonattainment area, which will impose greater scrutiny on all capacity adding and new facility projects contained in the 2035 LRTP.

Therefore, apart from enhancing infrastructure for alternative modes of transportation, promoting a variety of traveling options, and strategically adding capacity to critical roadway corridors, other strategies must be implemented to address future transportation needs and congestion rather than just adding capacity or new facilities to address all congested corridors. While the 2035 LRTP identifies critical roadway capacity and new facilities projects, the additional strategies to address congestion and air quality include maintenance and system preservation, travel demand management,





transportation system management, considerations for land use and urban design, and access management all of which are included in the ARTS 2035 financially constrained LRTP.

The ARTS area must succeed at preserving, maintaining, and improving the operational efficiency of the regional transportation system. The most effective use of limited transportation resources and addressing the impending air quality non-attainment designation is to effectively direct future efforts toward the following:

- Preserving and maintaining existing facilities.
- Promoting alternative programs and modes of transportation through travel demand management.
- Utilizing transportation system management strategies to improve mobility, accessibility, and operational efficiency.
- Adopting land use and urban design elements that are more appropriate for a multimodal transportation environment.
- Implementing access management strategies along congested corridors.

6.3.2 Strategic Roadway Capacity Improvements

As stated earlier, enhancements to non-automobile modes will not prevent the need for additional roadway capacity improvements. However, as also mentioned earlier, the ARTS LRTP is committed to investing in a variety of projects that preserve the existing system, expand the system's capacity, enhance its efficiency and safety, and improve its overall quality. Based on the existing and future conditions, expanded roadways and new facilities are still required in the ARTS area to address congestion and safety, which will in turn improve regional mobility and promote economic development. Roadway improvements in the ARTS 2035 LRTP add capacity to critical corridors, improve traffic flow and system efficiency, increase safety, and enhance regional gateways, all of which will assist in spurring the regional economy. Based on the 2035 E+C model results and input from the public and the Advisory Committee, the following provides some of the strategic roadways in the ARTS area that will most likely require capacity improvements along portions of these roadways over the next 25 years:

- Georgia:
 - I-20
 - I-520
 - Old Petersburg/Old Evans Road
 - Washington Road (SR 104)





- Flowing Wells Road (SR 1017)
- Mike Padgett Highway (SR 56)
- Windsor Spring Road
- Gordon Highway (US 78/SR 10)
- Deans Bridge Road (US 1)
- Wrightsboro Road
- Stevens Creek Road
- South Carolina:
 - I-20
 - Edgefield Highway (SC 19)
 - Five Notch Road
 - Charleston Highway (US 78)
 - Pine Log Road (CR 65)
 - Martintown Road (SC 230)
 - University Parkway (SC 118)
 - Robert M. Bell Parkway (SC 118)
 - Rudy Mason Parkway (SC 118)

6.3.3 Strategic New Facility Improvements

In order to improve roadway connectivity in the ARTS area, new roadway facilities will need to be constructed. Due to funding and potential air quality constraints, the new facility improvements are strategic connections that improve safety, reduce congestion, and enhance connectivity, thereby reducing VMT and GHG emissions. Based on input from city and county staff, following are the strategic new facilities improvements in the ARTS area over the next 25 years:

- Georgia:
 - William Few Parkway Extension.
- South Carolina:
 - Whiskey/Centennial Parkway Connection.
 - Whiskey Road/Powderhouse Road Connection.
 - East Gate Road/Centennial Extension.





- I-20 Frontage Road US 25.
- Bergen Road and Five Notch Road Connector.

The new facilities in South Carolina are unfunded LRTP priority projects and if additional funding sources are identified, these projects will be amended into the financially constrained plan through the MPO planning process.

6.3.4 Intersection Improvements

Intersection improvements are a key piece to improving the existing ARTS transportation system. Addressing key intersections improves safety, traffic operations, freight movements, and air quality. Intersection improvements can typically be completed in the short-term and the costs are much lower than traditional capacity improvements.

The ARTS 2035 LRTP identifies several intersection improvements, which were coordinated with ARTS and county staff or derived from recent ARTS studies, such as the Regional Freight Study. The following provides a list of recommended intersection improvements:

- Georgia:
 - Deans Bridge Road (US 1/SR 4) and Morgan Road.
 - Deans Bridge Road (US 1/SR 4) and Meadowbrook Drive.
 - Deans Bridge Road (US 1/SR 4) and Georgetown Road.
 - 15th Street (US 1/SR 4) and Walton Way.
 - Mike Padgett Highway (SR 56) and Dixon Airline Road.
 - Mike Padgett Highway (SR 56) and Marvin Griffin Road.
 - Mike Padgett Highway (SR 56) and Apple Valley Drive.
 - Mike Padgett Highway (SR 56) and Old Waynesboro Road.
 - Mike Padgett Highway (SR 56) and Hephzibah-McBean Road.
 - SR 88 and Bath-Edie Road (CR 58).
- South Carolina:
 - Edgefield Road (US 25) and Walnut Lane.
 - Georgia Avenue (US 25)/Knox Avenue (US 25/SC 121) and Five Notch Road/Bradleyville Road.





- I-20 and Martintown Road (SC 230) interchange ramps.
- Silver Bluff Road (SC 302) and Hitchcock Parkway (SC 118).
- Five Notch Road (SC 45) and Pisgah Road.
- Knox Avenue (US 25/SC 121) and East Martintown Road (SC 230).
- Richland Avenue West (US 1/US78) and University Parkway (S-2131).
- York Street/Columbia Highway (US 1) and Rutland Avenue (SC 118) and Aldrich Street.
- Five Notch Road (SC 45) and Walnut Lane.
- Pine Log Road (SC 302) and Collier Street.

6.3.5 Park-and-Ride Facility Improvements

There are currently no park-and-ride facilities in the ARTS area. However, SCDOT will be constructing a park-and-ride lot in Aiken County at I-20 at US 25 (Exit 5) in FY 2010. Furthermore, the 2035 LRTP identifies potential locations for park-and-ride facility across the ARTS area. Park-and-ride facilities provide commuters a central location to meet at in order to carpool or vanpool to and from work. The initial design of the park-and-ride facilities is to encourage and support carpooling. However, as funding becomes available connecting express bus service or fixed route public transportation services to the park-and-ride lot, these facilities would provide additional mobility sources and in total would reduce the overall VMT in the ARTS area. The twofold key to making park-and-ride facilities a viable option for commuters is to ensure that the public is supportive and to locate the facilities in a suburban area along a main commuter roadway. The transportation survey conducted during the ARTS 2035 LRTP provided supportive feedback from local residents on using park-and-ride facilities for commuting purposes. Based on the responses, 46 percent would use park-and-ride facilities to carpool or vanpool to and from work, and more importantly, 61 percent would use park-and-ride facilities if they provided public transportation services.

The following park-and-ride facilities are included in the ARTS 2035 LRTP:

- Georgia:
 - I-20 park-and-ride facility in Columbia County.
 - US 78 (Gordon Highway) in Richmond County in the vicinity of Jimmie Dyess Parkway.
 - US 1 (Deans Bridge Road) in Richmond County in the vicinity of Tobacco Road.





- US 25 (Peach Orchard RD) in Richmond County in the vicinity of Tobacco Road.
- South Carolina:
 - I-20 park-and-ride facility at US 25, Exit 5 (under construction in FY 2010).
 - US 1 (Columbia Highway) north park-and-ride facility in Aiken County at Exit 22 along I-20.

6.3.6 Intelligent Transportation System Improvements

GDOT has deployed ITS improvements throughout the ARTS area over the past few years. ITS improvements were included in the I-20 and I-520 improvements recently completed, which included laying fiber optic cables along the interstate and erecting Dynamic Message Signs on I-20. All of these improvements are identified in the GDOT's ITS Strategic Deployment Plan. Columbia County has deployed numerous ITS technologies throughout the county over the past few years. Using motion-sensitive cameras, computers and fiber optics, Columbia County officials are linking traffic signals along high traffic corridors to create a county traffic control system, which will improve traffic operations throughout the county.

Columbia County is also installing over 220 miles of fiber optic cable as part of a Broad Band Fiber project (funding in part through American Recovery and Reinvestment Act) which all traffic signal devices including, stop and go signals, school flashers, warning beacons (120 and growing) will be connected to and facilitate communication back to the county's Traffic Management Center.

The following is a list of planned features of the Columbia County ITS program:

- Traffic Management Center office area for video display wall and computer consoles and additional personnel.
- 60 PTZ cameras at key intersection locations.
- 30 Emergency Priority control intersections/system for emergency vehicles.
- 50 Traffic Signal intersections – Utilizing Rhythm Adaptive traffic signal system for main corridors.
- 18 DMS installations to provide information to the traveling public.
- Coordination with GDOT to incorporate the Columbia County ITS into the new Navigator system is scheduled for the fall of 2010.

Future ITS improvements that will be deployed by GDOT, SCDOT, Augusta-Richmond County, Columbia County, and Aiken County should be coordinated as a region to





ensure the new technologies have a regional impact on improving congestion, safety, security, and air quality in the ARTS area. All jurisdictions in the ARTS area need to coordinate, plan, and design ITS improvements jointly and this coordination should begin at the MPO level since all jurisdictions deploying ITS infrastructure are part of the ARTS area. Once ITS infrastructure improvements are coordinated between Georgia and South Carolina, as well as between the three counties, the results will provide a seamless system that will assist in improving congestion, safety, security, and air quality throughout the ARTS area.

Local county engineers are working with GDOT to develop a local strategy for implementing additional ITS in the ARTS area. More specifically, the ARTS area has been exposed to the workings of Georgia's Intelligent Transportation System (ITS), called NAVIGATOR. GDOT developed this transportation management system to monitor vehicle crashes and incidents that cause prolonged rush hours, create traffic congestion, and generate poor air quality along the freeways in the Atlanta metropolitan area. GDOT's ITS Strategic Deployment Plan identifies constructing a Transportation Management Center (TMC) in Augusta and the 2035 LRTP includes funding to implement this needed ITS improvement.

The following ITS improvements are included in the ARTS 2035 LRTP:

- Augusta Richmond County/GDOT Regional Traffic Control Center.
- I-20 ATMS Communications/Surveillance.
- ATMS/Augusta Slo Scan/CMS/Radar.

6.3.7 Bridge Improvements

Like roadways, bridges require scheduled maintenance and inspection to ensure they can continue to safely carry increasing traffic volumes and higher numbers of loaded trucks. The SAFETEA-LU Technical Corrections Act, enacted June 6, 2008, changed the Federal Highway Bridge Replacement and Rehabilitation Program to the Highway Bridge Program and placed greater emphasis on the importance of proper, timely bridge preservation. Highway Bridge Program funds can now be used for replacement, rehabilitation, painting, systematic preventive maintenance, seismic retrofitting, and applying anti-icing or deicing treatments to eligible highway bridge projects.

GDOT and SCDOT conduct structural assessments and determine condition ratings for bridges in the ARTS area. Bridges that are deemed in need of improvement fall into the following two categories:





- **Structurally deficient** – bridge load capacity is significantly decreased due to deterioration.
- **Functionally obsolete** – bridge, while not physically deficient, no longer meets current design standards.

For example, a bridge with no sidewalks on a section of roadway with sidewalks is categorized as functionally obsolete. A bridge sufficiency rating is another method of identifying bridge improvements. The sufficiency rating is a computed numerical value that is used to determine eligibility of a bridge for Federal funding. The sufficiency rating formula result varies from 0 to 100. The formula includes factors for structural condition, bridge geometry, and traffic considerations. A bridge with a sufficiency rating of 80 or less is eligible for Federal bridge rehabilitation funding. A bridge with a sufficiency rating of 50 or less is eligible for Federal bridge replacement funding.

These bridge condition ratings provide methods that enable GDOT and SCDOT to make decisions about where and how to spend federal bridge funds to replace or rehabilitate bridges, which are coordinated with ARTS staff and subsequently included in the ARTS TIP.

The ARTS 2035 LRTP identifies several roadway widening projects that impact an existing bridge or bridges. The impacted bridges will need to be either replaced to accommodate the added capacity on the roadway or an additional bridge may be constructed to accommodate one of the directions of travel while the old bridge is used for the other direction. If a roadway project requires a new bridge structure, the cost of the widening and bridge work is included in the planning level cost estimate.

The following bridge improvements are included in the ARTS 2035 LRTP:

- CR 65 (Windsor Spring Road) at Norfolk Southern railroad in Hephzibah.
- CR 65 (Windsor Spring Road) at Spirit Creek.
- I-20 Bridge over Augusta Canal and Savannah River (6 lanes).
- SR 232 (Columbia Road) at Walton Branch 4 miles northeast of Grovetown.
- The Washington Road widening project in Evans (Columbia County) includes bridge improvements.

6.3.8 Rail Crossing Improvements

A highway-railroad grade crossing is an intersection where a roadway crosses railroad tracks at the same level or at grade. Because a grade crossing is a point at which more than one mode of transportation meets, several entities, both public and private, have





jurisdiction over various aspects of modal intersections. Private railroad companies own and maintain the tracks, and generally own the property (rights-of-way) to either side of the tracks. At grade crossings, railroad companies typically install and maintain the tracks, the roadway surface between and around the rails, and traffic control devices on their rights-of-way. While the railroad owns the track, the roadway at a crossing in the ARTS area is owned by GDOT, SCDOT, or a local county or city jurisdiction.

FHWA is responsible for public grade crossing issues that affect highway safety. FHWA provides guidelines and standards for the correct design of grade crossings, the assessment of safety at a grade crossing, and appropriate placement of traffic control devices at and on the approach to a grade crossing. These traffic control devices include circular advance warning signs, crossbucks (the familiar *x*-shaped signs), pavement markings, and, in some locations, bells, gates, and flashing lights as described in the FHWA's Manual on Uniform Traffic Control Devices (MUTCD).

GDOT and SCDOT determine which public crossings are in need of improvements, and determine the type of improvement needed. In order to make highway-railroad grade crossing improvements, GDOT and SCDOT rely heavily on federally supplied funds authorized under the SAFETEA-LU program. This program allocates money to GDOT and SCDOT specifically for eliminating hazards at public highway-railroad grade crossings.

The Federal Railroad Administration (FRA) regulates the aspects of grade crossing safety pertaining specifically to the railroads: track safety, train-activated warning devices, and train safety and conspicuity. For example, FRA regulations specify the type of lighting to be placed on a locomotive, the audibility of the train horns, and the inspection, testing, and maintenance standards for active grade crossing signal system safety.

The following highway-railroad grade crossing improvements are included in the ARTS 2035 LRTP:

- Georgia:
 - Norfolk Southern at Doug Barnard Parkway – Rail crossing safety improvements.
 - CSX at Broad Street (US 1/US 25/SR 104/SR 28).
 - CSX at 15th Street – Rail crossing safety improvements.





- CSX at Walton Way (US1/SR 4)/12th Street – Rail crossing safety improvements.
- NS at Park Avenue/Williamsburg Lane/Staubes Lane – Rail crossing safety improvements.

6.4 Bicycle and Pedestrian Improvements

Presently, the ARTS area includes a system of bicycle and pedestrian facilities, which is described in more detail in **Section 2.16**. Additionally, the ARTS area possesses many qualities that contribute to its ability to attract bicyclists and pedestrians, including a favorable climate, downtown attractions, Savannah River, and the Augusta Canal, to name a few. However, as in most regions, automobiles are the dominant form of transportation, and bicycling and walking are not always considered viable alternatives for many residents and visitors in the ARTS area. This is further exacerbated by the presence of unsafe crossings, missing segments or gaps in bicycle facilities and sidewalks, design of arterials and major roadways, and a lack of dedicated lanes and buffer to give the sense of a visible division between automobiles and bicyclists or pedestrians.

Recently, cities and counties in the ARTS area have been more active in developing their own bicycle and pedestrian infrastructure. Augusta-Richmond County continues to develop the Riverwalk and trails along the Augusta Canal. Columbia County has made great improvements with the Evans to Lock Road multiuse path that connects neighborhoods to the Augusta Canal Trail system. The City of North Augusta completed construction on an extension of the Greenway into the North Augusta riverfront. The 1.5 mile extension forks off the existing trail near Crystal Lake, follows Crystal Creek through the woods to the Savannah River, travels along the riverbank to the Georgia Avenue Bridge and connects with the roundabout and sidewalk at Riverside Boulevard. SCDOT also constructed a new Greenway trail adjacent to the final phase of the new I-520 (Palmetto Parkway), which extends five miles from Atomic Road (S-125) to Ascauga Lake Road (S-33) in North Augusta. In 2010, North Augusta will extend the Greenway an additional mile from its current terminus at Pisgah Road to Bergen Road on the north side of I-20.

Building on local successes, the ARTS 2035 LRTP suggests pursuing bicycle and pedestrian improvements that focus on providing both local access and regional connectivity, coupled with enhancements to streetscapes that promote walking in the urban cores of the ARTS area and the following sections provide guidance on successfully implementing this strategy.





Also, the Bicycle and Pedestrian Needs Assessment (Section 5.2) identified areas where action and initiatives are needed to close the gaps or segments for non-motorized travel within the ARTS Study Area. Initiatives need not be simply “brick and mortar,” or in the case of transportation “asphalt and concrete;” rather, they include a combination of construction projects, planning projects, and policy modifications and developments to insure that the area can provide a multitude of viable travel choices for residents and visitors for both recreational and daily mobility. A summary of the major initiatives not included in the previous ARTS Bicycle and Pedestrian Study is presented in the following sections, and a work program of all initiatives are summarized into short-term, mid-term, and long-term project lists in Section 10.

6.4.1 Policy Improvements

Policy projects refer to initiatives that will guide the way that ARTS transportation and mobility projects are considered and designed. Given the expected funding parameters being considered for the Federal Surface Transportation Reauthorization, the development and implementation of these policy considerations will ensure that projects developed for the ARTS area are fully consistent with the new requirements and will score high in the funding priority evaluation.

- **Develop Complete Streets Policy** – Currently, SCDOT has an adopted Complete Streets Policy; GDOT has not yet developed or adopted such a policy. On the Federal level, Congress passed the National Complete Streets Act of 2009 in the fall of 2009, and Secretary of Transportation Ray LaHood has made it clear that consideration of all modes of travel in the next Surface Transportation Authorization Act will be a priority for funding consideration. With that in mind, the ARTS areas should develop and adopt a Complete Streets policy in line with both the National and SCDOT guidelines. Additional resources and peer jurisdiction policies can be found through the National Complete Streets Coalition (www.completestreets.org).
- **Develop Roadway Design Guidelines** – Subsequent to the development of a Complete Streets Policy, the local jurisdictions should review and modify their Roadway Design Guidelines to correspond with the design parameters set forth by Complete Streets. The Zoning and Subdivision Ordinances should be examined to determine consistency with the roadway cross sectional requirements articulated in the Complete Streets Policy, and any adjustments should be made to bring them in line with the new Policy. Coordination with the respective State DOTs will be required to insure that initiatives undertaken on State facilities comply with the intent of the Complete Streets Policy and Roadway Design Guidelines. One example of a jurisdiction that has completed





this effort is the City of Charlotte, North Carolina; the City's Urban Street Design Guidelines (USDGs) adhere to the principles of Complete Streets and set guidelines for all roadways within the City to accommodate all users.

- **Develop Connectivity Requirements** – In conjunction with the development of Roadway Design Guidelines, the jurisdictions should consider the implementation of a connectivity requirement to guide new development and redevelopment. By requiring connectivity between and among developments, a multimodal network of motorized and non-motorized facilities can be created; in this way, new and redevelopment is not reliant on a single roadway which can alleviate the need for widening arterial roadways. Virginia Department of Transportation (VDOT) has recently adopted a statewide policy on connectivity for new developments in their Secondary Street Acceptance Requirements (SSAR's) which would be a good peer program for the jurisdictions to consider regarding connectivity. North Augusta has amended its Development Code to require both internal and external connectivity in new subdivision and commercial site design.
- **Safe Routes to School (SRTS) Education and Implementation** – As shown in the Needs Assessment, most of the schools within the ARTS study area lack adequate facilities for students to walk or bike to school. Any infrastructure initiatives within a two-mile (Georgia) or 1.5-mile (South Carolina) radius of one of the eligible schools would qualify for SRTS funding if the initiative made a positive contribution to the overall pedestrian or bicycle accessibility to the school. All initiatives recommended in this plan update can be considered for SRTS funding if they are located within these radii and contribute to the safety of children who walk or bike to school. From a policy perspective, it was apparent in interviewing the school personnel that little is known about this program from the schools' side; a comprehensive education program to assist school personnel in identifying needs and funding opportunities should be developed and implemented by the respective School Boards in order to leverage additional funding opportunities for non-motorized mobility facilities that fall within the parameters of the SRTS program.
- **Facilitate Rails to Trails Implementation** – One item that came out of the public participation process was that there have been missed opportunities to acquire railroad rights-of-way when the railroad is abandoned and service ceases. Typically, the railroad entity allows the right of way to revert back to the previous property owner, making it extremely difficult if not impossible to convert many of these great corridors into non-motorized trails. The MPO should develop a program to identify and protect railroad right of ways, which may be abandoned at some point in the future. An example of a corridor would be the





rail line that parallels US 1/US 78 and SC 421 between Downtown Augusta and Downtown Aiken; an important link in the ARTS Regional Greenway system could be achieved by capitalizing on this corridor as a potential rail-with-trail corridor. Approximately six miles of the North Augusta Greenway System is a “Rails to Trails” project constructed on former Georgia-Florida/Norfolk Southern Railroad right of way.

6.4.2 Off Road Trail Improvements

The ARTS Bicycle and Pedestrian Study completed in 2003 contained a comprehensive list of off-road trail projects aimed at expanding the system of greenways in the ARTS area and making connections between those systems in place in Columbia County, Richmond County, and Aiken County. Several of those projects have been completed or are still ongoing: the North Augusta Greenway, the Augusta Canal Trail, and the Palmetto Parkway Greenway Trail. During the LRTP planning process, the project recommendations were reviewed and expanded, and recommended improvements were identified.

The City of North Augusta is also in the process of developing a Greenway Master Plan Update. In addition, the following off-road projects are recommended initiatives that will improve bicycle and pedestrian safety and connectivity in the ARTS area:

- Crossing of the Savannah River to connect the Augusta Riverwalk and the Canal trails with the North Augusta Greenway, using one or more of the existing 5th Street bridge; a new bridge on the existing pilings adjacent to the 5th Street bridge; or the 13th Street bridge.
- A connector between US 1/US 78 and the I-520/Palmetto Parkway Greenway, potentially using the existing railroad viaduct on the South Carolina side of the Savannah River as one segment. This initiative could provide a seamless connection and eliminate the gap between the Augusta Riverwalk, North Augusta Greenway, and Palmetto Parkway Greenway.
- An off-road US 1/US 78 Greenway Trail to connect Downtown Aiken to Downtown Augusta. This corridor could be configured as either a “Rail with Trail” along the existing railroad adjacent to SC 421 or as a dedicated off-road path within the US 1/US 78 corridor. An opportunity to develop a concept for this initiative will occur in conjunction with the US 1/US78 Corridor Study that Aiken County will be developing for this corridor in 2011.





6.4.3 On Road Bicycle Improvements

Opportunities exist to narrow travel lanes on existing facilities when they are resurfaced or improved in order to accommodate non-motorized travel. For instance, by narrowing an existing five-lane section from its current configuration of twelve-foot travel lanes and a sixteen-foot center turn lane median to eleven-foot outside lanes, ten-foot inside lanes, and an eleven-foot turn lane, full width bicycle lanes can be striped onto the existing roadway without requiring any reconstruction. Coordination with the respective Public Works and state DOT's within the realm of their maintenance program will allow these facilities to be proactively included where feasible whenever a candidate roadway is resurfaced. In addition, roadway improvements such as those articulated in the roadways section should include provisions for pedestrians and cyclists in their design and implementation, including evaluation of the provision of off-road facilities within the corridor. Example corridors where this approach could be used in the ARTS area are as follows:

- US 1/SC 19/Whiskey Road (Aiken County).
- Martintown Road/SC 230 (Aiken County).
- SC 302/Silver Bluff Road (Aiken County).
- SC 118/University Parkway/Rutland Drive (Aiken County).
- SC 421/Augusta Road (Aiken County).
- GA 28/Washington Road (Columbia & Richmond Counties).

Finally, in an effort to close modal gaps, all Augusta Public Transit vehicles are currently being retrofitted with bicycle racks. All Best Friend Express vehicles contain bike racks. It is also recommended that any proposed new multimodal center include both bike racks and lockers to facilitate “bike and ride” activities in the ARTS area.

6.4.4 Pedestrian Improvements

In order to make walking a reasonable modal option, the basic needs of pedestrians must be taken into consideration. Pedestrians are composed of all types of people walking for a variety of purposes. Environments that are more conducive to walking are those that encompass mixed and dense land uses and offer pedestrian-oriented activities. In addition, pedestrian facilities must be safe and ADA-compliant for individuals with disabilities. Furthermore, a quality pedestrian environment should provide direct paths, be continuous, have safe crossings, have visual interest and offer amenities, and be secure.





Pedestrian facilities along interconnected streets generally provide more direct travel to destinations than curvilinear and cul-de-sac streets. Pedestrian street crossings should be well-designed, visible, and contain crosswalks and provide signal activation devices as needed. Additionally, pedestrian street crossings that include raised medians or bulbouts, which are an extension of the pedestrian network into the roadway, make street crossings safer for pedestrians. Streets that provide amenities, such as street furniture and trees, encourage more people to walk. Also, a sense of pedestrian safety and security is achieved by providing street lighting, pedestrian signs, and other visibility-related design features.

Similar to the provisions for on-road improvements, a comprehensive program of sidewalk connections and additions should be accomplished. From a policy perspective, the adoption of a Complete Streets policy will in most cases make sidewalks a requirement on any new or reconstructed street segment.

The following are focus areas for sidewalk initiatives:

- All new subdivisions.
- Areas around schools consistent with SRTS directives.
- Concurrent with improvements of existing facilities.
- Pedestrian studies for Downtown Augusta, North Augusta, and Downtown Aiken.
- Programmatic additions of sidewalks in deficient areas (annual allocation).

6.5 Public Transportation Improvements

The potential for future public transportation expansion within the ARTS study area is at the same crossroads facing many other public transportation providers within the country. On the one hand, it is clear that based on the growing age of the population, increased emphasis on issues such as climate change, energy consumption and congestion and economic development that a vibrant public transportation program should be an important part of a growing area. However, in the short term with many similar programs competing for scarce resources, especially when no new sources of funding have been identified at the Federal and State levels, the current actions are to raise fares, reduce services, or in the case of Clayton County, GA, to eliminate services. The questions facing elected officials and the electorate are whether there can be a feasible commitment to sustaining a new and improved approach to public transportation or whether the industry be reduced to offering minimal services to those without alternatives.





In the ARTS area, the recent Transportation Development Plan for Augusta Public Transit created a framework for phased expansion and increased connectivity to new or expanded areas with new and expanded partnerships. As was stated in the conclusion of the Executive Summary:

“In our view, prior evaluations of the APT system provided an excellent array of data and analysis, but did not provide a future path for the system and the community it serves. Our intent has been to accentuate the policy, planning, service and financial opportunities to re-invigorate, re-create and re-establish the service as an integral part of the community that can be used by more people for more purposes. The proposal is to begin this transformation with one new service, described above, and to build on that service with a series of additions and modifications, that over the five-year time frame will achieve connections and attributes that people of Augusta-Richmond County have communicated to us during this study³⁴.”

There are three pertinent ideas contained in the above paragraph that have direct transferability to the ARTS 2035 LRTP:

- Public transportation should be viewed as an integral part of the community.
- A significant portion of the community would use public transportation if the system were improved.
- Building upon one new route or service can begin a transformation process for public transportation.

6.5.1 Federal Vision, Policies, and Funding

During the past six months, there has been a significant commitment to the ideals connected with “Livability and Sustainability” by the Obama administration. First, a three-agency Partnership for Sustainable Communities was formed between the Department of Transportation, the Department of Housing and Urban Development and the Environmental Protection Agency based on six principles:

- **Provide more transportation choices.** Develop safe, reliable, and economical transportation choices to decrease household transportation costs, reduce our nation’s dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health.

³⁴ Augusta Public Transit, Transit Development Plan. 2009.





- **Promote equitable, affordable housing.** Expand location- and energy-efficient housing choices for people of all ages, incomes, races, and ethnicities to increase mobility and lower the combined cost of housing and transportation.
- **Enhance economic competitiveness.** Improve economic competitiveness through reliable and timely access to employment centers, educational opportunities, services and other basic needs by workers, as well as expanded business access to markets.
- **Support existing communities.** Target federal funding toward existing communities—through strategies like transit oriented, mixed-use development, and land recycling—to increase community revitalization and the efficiency of public works investments and safeguard rural landscapes.
- **Coordinate and leverage federal policies and investment.** Align federal policies and funding to remove barriers to collaboration, leverage funding, and increase the accountability and effectiveness of all levels of government to plan for future growth, including making smart energy choices such as locally generated renewable energy.
- **Value communities and neighborhoods.** Enhance the unique characteristics of all communities by investing in healthy, safe, and walkable neighborhoods—rural, urban, or suburban.

Subsequently, these principles have been used to evaluate a number of discretionary grant programs offered by the FTA, and they have also been referenced in an upcoming HUD grant initiative. Thus, it appears clear that not only will these concepts be retained for new programs, but will also be recommended for ongoing program funding. For example, the Administration has recommended moving Job Access Reverse Commute funds under the newly proposed Office of Livability.

There would appear to be numerous opportunities for public transportation in the ARTS area to consider expanded partnerships with other agencies to position the area to receive additional funding. For example, APT works extensively with public housing agencies to connect their participants with transit services. The Lower Savannah Council of Governments, the manager of the Best Friends Express service, has previously received a Mobility Services for All Americans grant from U.S. DOT and thus has a proven record working to improve mobility options and coordination with partnering agencies.

It should be noted in many instances that the sources for these discretionary grants are funds that have temporarily been redirected from other program sources and are not sufficient to fully sustain an ongoing shift to new program systems. However, they





foreshadow a potential significant change in federal policy direction. This direction may be further reinforced in upcoming recommendations from the Administration regarding reauthorization of the Surface Transportation Act.

With regard to sustainability, there are those who argue that this term should include two areas of emphasis – financial and environmental. Although there have been project specific grants available, with examples as noted above, no specific ongoing funding sources have as yet been identified for these programs. For example, from a U.S. DOT Surface Transportation Act perspective, the current reauthorization legislation, SAFETEA-LU, ended in September 2009, although recent legislation passed by Congress (HIRE) and signed into law by the President in March 2010 will extend the current program until the end of the 2010 calendar year. Although there have been numerous studies conducted that indicate the transportation infrastructure is significantly underfunded, there has been no consensus developed regarding how to fund the next bill, with many expressing the view that the current source, the federal fuel tax, is no longer viable. That 18.4 cents per gallon tax has not been raised since 1993 and, due to the effects of inflation, its buying power has been reduced by almost 80 percent.

Thus, we are at a significant crossroads that will impact all the country, including the ARTS area, since whatever policies are ultimately approved in Washington D.C. will cascade to the states, the regions, the counties and the locales. In that regard, it would be also beneficial to mention two other emerging trends from the Administration's 2011 budget, which include asset management and state of good repair.

6.5.2 Asset Management and State of Good Repair

The Administration, as a part of the potential conversation regarding system expansion related to livability and sustainability, metropolitan mobility, etc. has indicated the importance of understanding the existing system. To further elaborate this issue, the FTA noted the following:

“Maintaining the nation's bus and rail systems in a State of Good Repair (SGR) is essential if public transportation systems are to provide safe and reliable service to millions of daily riders. State of Good Repair includes sharing ideas on recapitalization and maintenance issues, asset management practices, and innovative financing strategies. It also includes issues related to measuring the condition of transit capital assets, prioritizing local transit re-investment decisions and preventive maintenance practices. Finally, research and the identification of the tools needed to address this problem are vital. The FTA will lead the nation's effort to address the State of Good





Repair by collaborating with industry to bring the nation’s transit infrastructure into the twenty-first century.”

To initiate this concept, the FTA has recommended combining the 5309 Discretionary Bus Program with the Rail Modernization Program. This combining of programs represents a significant change and also represents a significant challenge for the industry, since the Rail Modernization program was an intricate formula of consensus formed equations for rail operators while the Bus Program had historically been earmark driven.

There was particular concern noted by bus operators since the only communications that have been previously employed by the FTA with regard to bus vehicles and facilities were guidelines regarding useful lives and depreciation of the federal funds that pertained to those vehicles and facilities. Even those larger properties with rail services have usually viewed asset management and state of good repair peripherally, not as the main criteria for funding. Thus, we would expect that there will be considerable debate and discussion from a transit perspective in this area, with potential comparisons with the longer history and more consistent applications developed on the highway side. Future federal bus planning activities in the ARTS area will therefore need to comply with any program changes approved as part of the State of Good Repair initiative.

6.5.3 Transit ITS Improvements

Lower Savannah Council of Governments (LSCOG), which represents Aiken and Edgefield Counties in the ARTS area, is one of three national recipients of funding under this initiative, through the Office of Joint Programs in U.S. DOT. The grant is for implementation of a design developed during an earlier technology planning grant from the U.S. DOT, which will provide a Travel Management and Coordination Center project located in Aiken. This center will utilize ITS technology to help transit services operate more efficiently and provide better customer service. Mobility Management services will be provided from the center to local citizens to learn about transit resources, to access transit and to address problems and issues with transit service. Travel training and coordination services will be a part of the Mobility Management services provided in the center. A federal grant of \$680,000, matched with \$170,000 in non-FTA funding from the Centers for Medicare and Medicaid Services will help in the implementation of this project. Additional funding from other FTA sources will





contribute to the implementation of the project, also, as evidenced in earlier sections of this plan.³⁵

6.5.4 Bus Replacements

All three transit agencies in the ARTS area have bus replacement schedules and these new capital improvements are included in the ARTS 2035 LRTP.

6.5.5 Facility Expansion and Improvements

The expansion plans of Augusta Public Transit, Best Friends Express, and Columbia County Area Transit are supported by the ARTS. The MPO supports the funding of these projects, as funds become available; to facilitate the necessary expansions and improvements as outlined in each agencies five year plans. ART plans for minor expansions in routes and vehicles; in addition there will be increased coordination between the APT and BFE resulting in route modifications that will better serve the public.

Using ARRA funds directed to the Aiken County urbanized area, the Lower Savannah COG plans to expand its facilities to provide space to accommodate the Travel Management and Coordination Center and to serve as a transfer point for travelers from outlying areas to access the Best Friend Express and, if desired, the Augusta Public Transit System. There is currently not a transfer point which provides safety or any amenities for passengers, and the need for such a facility is growing as ridership increases. ARRA funds to provide these improvements will be used in conjunction with grants from the Centers for Medicare and Medicaid Services, through the Office of the Lt. Governor of SC; Sections 5316 and 5317 funds through SCDOT and a United We Ride/Mobility Services for All Americans Implementation grant through the U.S. DOT.³⁶

Augusta Public Transit will invest \$1.5 million to develop a new South Augusta Transfer Facility. This facility will provide a hub for APT buses and will improve transit connectivity from a central point in a needed area of Richmond County.

6.5.6 Funding Potentials for Operations

In the above section, we discussed a number of federal initiatives. Those funds are usually limited to capital activities, although the ARRA program was modified to include up to 10% for operations. That modification was based on the current operations shortfall that has affected the industry based on the ongoing effects of the

³⁵ ARTS FY 2010-2013 Transportation Improvement Program. November 2009

³⁶ ARTS FY 2010-2013 Transportation Improvement Program. November 2009





economic downturn. APT has historically supported the 100 Bus Coalition which consists of regions that are defined as urbanized areas, and thus cannot use federal funds for operations, but operate less than 100 vehicles. These regions argue they should have the flexibility to use federal funds for up to 50 percent of their operating costs, since federal capital funds often are unused. The potential for the use of federal funds for operations has now been endorsed by many groups and associations, including APTA, which sees a need for the immediate infusion of operating dollars based on industry surveys regarding ongoing service cuts and fare increases. It remains to be determined whether there will be a short or longer term policy shift to allow the use of federal funds, but in smaller transit agencies, like APT, having the potential to use federal funds based on current conditions is certainly logical.

As has been noted in numerous articles regarding the funding of MARTA in Atlanta, Georgia is one of the few states in the country that provides no state operations funding for public transportation. In fact, the prior state commitment for up to 10 percent of capital funding has also been eliminated. In addition, local jurisdictions have been limited in the ability to raise dedicated funds for public transportation, resulting in the reliance of local funds that compete with other services, such as police and fire. Within the TDP, there were assumptions made regarding the potential for a portion of a dedicated local source to be allocated to APT, and the conclusion was made that the source would offer the ability to stabilize and expand. However, at the moment the funding uncertainties include all levels of government, federal, state and local, which will result in continued short-term hardships for the largest operator in the ARTS region.

At the moment, funding uncertainties are the prevalent public policy question for public transportation. However, embracing the opportunities posed by issues regarding livability and sustainability and approaching the potential for more partnerships with more agencies would achieve the TDP goal of reaching outward with service concepts which would improve the mobility for the ARTS region.

6.6 Operations and Maintenance Improvements

SAFETEA-LU requires that MPOs address transportation system operations and management. GDOT, SCDOT, Richmond County, Columbia County, Aiken County, and Edgefield County currently have processes and procedures in place to evaluate transportation system operations and management in the ARTS area. The ARTS multimodal transportation system is comprised of federal, state, and local roadways. GDOT and SCDOT monitor and evaluate the federal and state highway and bridge system, while local counties and cities monitor the local highway and bridge systems.





The three transit agencies in the ARTS area are responsible for operating their urban and rural systems.

Maintenance and operation projects in the ARTS area over the next 25 years include the following improvements:

- Bridges:
 - Inspection.
 - Deck replacement.
 - Reconstruction.
- Roadways:
 - Inspection ratings.
 - Asphalt street overlay.
 - Asphalt street reconstruction.
 - Concrete street overlay.
 - Concrete street reconstruction.
 - Oil and Chip applications.
 - Guardrail repair and installation.
 - Signing and stripping.
- Sidewalks:
 - Repair and installation.
 - ADA compliance.
 - Signing and stripping.
- Curb and Gutter:
 - Installation and repair.
- Traffic Signals:
 - Installation and modernize existing system.
- Public Transportation:
 - Augusta Public Transit, Best Friends Express, and Columbia Area Transit keep extensive records detailing the operations of their transit systems, which assist





these agencies in making operational decisions on their individual transit system routes.

6.7 Integrating the Congestion Management Process into the LRTP

The ARTS area is a transportation management area (TMA). Any urban area with population over 200,000 is automatically a Transportation Management Area, which subjects it to additional planning requirements under federal law, but also entitles it to funds earmarked for large urbanized areas under the Surface Transportation Program. TMAs must also prepare the Congestion Management Process (CMP). The CMP requires that all reasonable alternatives be identified and evaluated for their ability to alleviate congestion and enhance mobility. Furthermore, when the addition of general purpose traffic lanes is determined to be the appropriate solution for a particular corridor, the CMP requires that appropriate demand and operational management strategies also be implemented to increase the efficiency of the corridor and extend the life of the improvement.

ARTS prepared its first Congestion Management System (CMS, now called CMP) work plan in August 1994 in cooperation with the GDOT and SCDOT. Since 1994, this work plan has served as the basis for the area's annual CMP report and ongoing CMP process. The CMP work plan is tailored to meet regional needs and is evaluated and adjusted periodically to meet changing needs and priorities. The Augusta-Richmond County Planning Commission coordinates the CMP process and the work on the annual CMP report. Based on the 2007 CMP, congestion mitigation strategies have been developed, several of the strategies have been implemented, and additional strategies are incorporated into the 2035 LRTP. The MPO is currently updating their CMP and the results will be finalized in the fall of 2010, which is after the ARTS 2035 LRTP will be adopted.

The ARTS CMP is used to monitor congestion levels on the ARTS network and identify mitigation measures, in addition to capacity projects, than are presented to the MPO committees for programming through ARTS or as local initiatives. During the LRTP project prioritization process, congested corridors were identified by examining the base year volume and base year capacity and horizon year volume and horizon year capacity. Both base year and horizon year congestion rates were inputs into the project prioritization process, which identified crucial capacity and non-capacity projects to alleviate congested corridors in the ARTS area. All projects were presented to the general public, Advisory Committee, and MPO committees for review and comments prior to the LRTP adoption.





As a part of the ongoing transportation planning process, ARTS has incorporated several congestion mitigation strategies. As corridors or parts of corridors are identified as being seriously congested, ARTS staff developed a corridor mitigation strategy matrix in the 2007 CMP. The following mitigation strategies listed in the CMP are included in 2035 LRTP and these programs and improvements should assist in alleviating congested corridors throughout the ARTS area.

- **Telecommuting and Flexible Work Schedules** – With today’s communications technology, it is quite feasible and practical to work at or closer to home. This is an excellent tactic in reducing the number of vehicles on the road. Additionally, other flexible work options which enable employees to shift their work schedules to earlier or later parts of the days spreads out demand for travel, thereby reducing congestion.
- **Ridesharing** – Carpool, vanpool, and other ride-share programs results in fewer single-occupancy vehicle trips and less congestion on roadways. Carpools are typically informal, while vanpool programs are more likely to be a more formal agreement through a local transit agency. Park-and-ride lots can help to encourage not only public transit, but also both informal and formal ridesharing services.
- **Support for Transit** – Providing necessary support for transit ridership can be instrumental in encouraging people to use alternative modes of transportation. People value their time and the convenience of a vehicle; therefore, transit should be coordinated, provide frequent service and be accessible to multiple origins and destinations.
- **Support for Walking and Bicycling** – Bicycle and pedestrian facilities that offer safe, accessible, contiguous, and direct pathways are most ideal for bicyclists and pedestrians and can take some of the burden off of the roadway network.
- **Traffic Operational Improvements** – Targeted traffic operational improvements, such as intersection improvements, traffic surveillance and control systems, motorist information systems, traffic control centers, and computerized signal systems is an excellent strategy to improve traffic operations along congested corridors.
- **Access Management** – Access management techniques reduce vehicular access points to land parcels adjacent to roadways and are also an excellent strategy to improve traffic operations along congested corridors.
- **Parking Management** – The cost and availability of parking can affect the choice of whether or not to drive a personal vehicle. Downtown areas and other employment centers are more likely to promote diversified transportation choices when parking is unavailable or too costly.





7. Air Quality and Climate Change

Currently, the ARTS area is not a designated non-attainment area and thus the ARTS 2035 LRTP is not required to undergo air quality conformity analysis. However, the 2035 LRTP was developed knowing the federal air quality regulations could become more stringent in the near future, and every effort has been made to develop a LRTP that will withstand future potential air quality conformity analysis. It is likely that over the next couple of years the ARTS 2035 LRTP may have to undergo air quality conformity analysis.

7.1 Air Quality

The Clean Air Act Amendments (CAAA) were signed into law on November 15, 1990. The CAAA provide for a comprehensive revision of the 1977 CAAA. It imposed major challenges for the metropolitan transportation planning and programming process in the nation's designated non-attainment and maintenance areas. The Clean Air Act's primary goals are the attainment and maintenance of the National Ambient Air Quality Standards (NAAQS), and the prevention of significant deterioration of air quality in areas cleaner than the NAAQS. The NAAQS establish the maximum pollutant concentrations that are allowed in the outside ambient air.

The Environmental Protection Agency (EPA) requires that each state submit a State Implementation Plan (SIP), including any laws and regulations necessary to enforce the plan, that outline how pollutant concentrations will be reduced to levels at or below the standards. This achievement is referred to as "attainment." Once pollution levels fall below the standards, the state must also show how it plans to keep these levels at the reduced amounts, referred to as "maintenance." The CAAA requires transportation plans and programs to conform to the SIP for each applicable air quality standard. The air quality plans quantify pollution reduction needs and commit to reduction strategies through the SIP, transportation control measures (TCMs), and conformity provisions for transportation planning.

The EPA has defined NAAQS for six criteria pollutants, including ground level ozone, carbon monoxide, and particulate matter. Currently, any area that fails to meet these standards by a specified deadline can be reclassified to a higher-level designation with additional and more stringent compliance requirements. Up to this point, the ARTS area has met National Ambient Air Quality Standards.





7.1.1 CSRA Air Quality Alliance

The Central Savannah River Area (CSRA) Air Quality Alliance was created as a proactive response to the potential threat of non-attainment within the CSRA, which includes the ARTS area. The goal of the CSRA Air Quality Alliance is to coordinate and implement initiatives in the area that reduce air pollutants and maintain air quality within federal standards.

The CSRA Air Quality Alliance grew out of a series of meetings, the first of which was held in February 2007. These meetings brought together a variety of stakeholders from throughout the region to discuss pending changes to air quality standards for fine particulate matter and identify steps that local stakeholders could take to improve air quality.

The CSRA Air Quality Alliance area includes Aiken, Edgefield, Columbia, Richmond, Burke and McDuffie counties. Involvement in the CSRA Air Quality Alliance is open to stakeholders from throughout the region. The current membership includes representatives from the following:

- Local businesses (large and small).
- Local governments.
- Local boards of education.
- Health care providers.
- Local development authorities.
- Local chambers of commerce.
- State legislators.
- Universities and technical colleges.
- Utility companies.
- Local and regional planning agencies.
- Savannah River Site.
- Fort Gordon.
- State environmental protection agencies.
- State transportation agencies.
- State forestry commissions.
- U.S. Environmental Protection Agency.

The CSRA Air Quality Alliance has an organizational structure that is comprised of three technical groups - the Education and Outreach group, the Heavy-Duty Diesel





group, and the Regulatory and Policy group. By focusing on these three areas, the CSRA Air Quality Alliance is working to improve air quality in the region.

7.1.2 Education and Outreach Initiatives

Through the CSRA Air Quality Alliance, there have been numerous attempts to educate the public, and other individuals and entities, on ways to improve air quality. These initiatives include special meetings, website outreach, participation in special events, school presentations, newsletter articles, and other forums.

To date, the CSRA Air Quality Alliance has held meetings at least three times a year to discuss the status of air quality conditions, standards and federal and state regulatory actions. Most importantly, the meetings provide a forum for showcasing existing air quality initiatives in the region and reviewing potential new initiatives. These meetings also allow participants to network and exchange ideas on other ways to improve air quality in the region.

In addition to periodic meetings, the CSRA Air Quality Alliance maintains a website that is linked to the City of Augusta's website. This website provides useful information on how individuals and businesses can help reduce air pollution. It also provides links to information (e.g. agendas, PowerPoint presentations) pertaining to Alliance meetings. Additionally, it highlights special events in the area, and provides links to other air quality websites.

Special events and school presentations also provide an excellent opportunity for the CSRA Air Quality Alliance to disseminate information to the general public and school age children on air quality issues and protective measures. The "Time to Care" fair is one such event that is held every year at the Augusta Commons in downtown Augusta. Similarly, efforts are on-going to teach school age children about air quality through special school presentations. By connecting with children, the information is often passed to the parents resulting in a secondary impact of the presentations. Air quality information is also made available at other public meetings.

Through its newsletter and special committee meetings, the activities of the Augusta Regional Transportation Study (ARTS) also provide another opportunity for the CSRA Clean Air Alliance to educate the public and area stakeholders. Special air quality articles are included in the quarterly ARTS newsletter and air quality issues are discussed at the ARTS Citizen Advisory and Policy Committee meetings that are part of the on-going transportation planning for the area. Both provide a forum to update citizens and regional partners on air quality initiatives and issues.





Another example of air quality education and outreach includes the annual news release sent out by the Georgia Forestry Commission to remind the public of the open burning ban that stays in effect from May 1 to September 30. The annual open burn restriction affects 54 counties in Georgia, including Richmond and Columbia counties. These restrictions are implemented to help alleviate high summer ozone levels. There is also a locally based effort to coordinate necessary prescribed burns through a prescribed burn committee that has been formed with partners from Richmond County, SCDHEC, Georgia EPD, Fort Gordon, SRS and others. This committee will help ensure that prescribed burns are conducted during those times that are less hazardous to public health and that the public is notified and properly educated about the necessity of prescribed burns.

7.1.3 Heavy-Duty Diesel Initiatives

Other air quality initiatives that target heavy-duty diesel applications include anti-idling programs and policies, diesel retrofits and emission control devices, fleet replacements, tax incentives and the use of alternative fuels.

One local program that targets the reduction of idling in school zones is the Breathe Better (B2) program. This program educates and encourages anti-idling practices by school bus drivers and the parents that transport children to South Carolina schools. Currently, Redcliffe Elementary in Aiken County is participating in the program. Additionally, according to Myra Reece of SCDHEC, several other schools in Aiken County have also expressed interest.

Both formal and informal anti-idling policies as well as other initiatives have been implemented within local school districts in an effort to reduce air pollution on school grounds. These include a formal no-idling policy adopted for all Richmond County school buses. Additionally, Richmond County, through Diesel Emission Reduction Act (DERA) grant funding, is in the process of updating its school bus fleet with cleaner burning diesel engines. The Burke County school district has also applied for DERA grant funding. Although they have not adopted a formal policy, the Aiken County school district has established an informal no-idling policy for its school buses. Lastly, Columbia County has also adopted a formal no-idling policy and has installed GPS units on all the route buses to monitor speed, idling, delays, and early arrivals through reports and actual real-time monitoring. GPS units have also been installed on Richmond County schools buses and will be installed on Aiken County school buses in the near future.





The education of local trucking fleets is another heavy-duty diesel initiative occurring in the area. The Clean Air Campaign of Georgia is working to educate local companies about the cost and air quality benefits of eliminating unnecessary idling. Their goal is to work with local companies to establish no-idle work policies and to provide signage designating company grounds as idle-free zones.

Other diesel reduction projects in the area include the Savannah River Site, which was awarded a grant to retrofit nine of its emergency vehicles with diesel oxidation catalysts. This grant was provided by the South Carolina Diesel Emission Reduction Act (DERA) program with funding from the American Recovery and Reinvestment Act (ARRA). The SC Forestry Commission was also awarded a grant to retrofit some of their bulldozers in the Aiken area. Additionally, the Department of Education was awarded a regional grant under the ARRA DERA program that will place a 2010 hybrid school bus in the Aiken area along with some idle reduction devices on school buses. Access to tax incentives and available grants also help to encourage the reduction of diesel emissions in the local area. South Carolina offers tax incentives for public and private production and use of bio-diesel. Additionally, there are over 100 publicly accessible locations in South Carolina that offer E85 or Biodiesel. Eight of these locations are in Aiken County. South Carolina has also been recently awarded Clean Cities ARRA grant money specifically designated for alternative fuel vehicles and refueling infrastructure. Augusta Public Transit is programming federal funds to purchase a hybrid bus.

7.1.4 Emission Reduction Initiatives

In addition to programs that focus on heavy-duty diesel emission reduction, there are also a variety of other emission reduction initiatives in the CSRA. These include the use of alternative fuels, such as solar, bio-mass and hydrogen, as well as other programs. South Carolina, for example, has increased its Solar Energy System tax credit and Georgia Power offers consumers the opportunity to purchase blocks of electricity produced by solar energy through its “Green Energy” program. Additionally, construction has begun on a new biomass steam plant at the Savannah River Site that will replace an aging coal-fired facility. Estimates indicate that the project will save \$34 million a year in energy, operation and maintenance costs. It will reduce air emissions, including 100,000 tons per year of greenhouse gas. Additionally, Bridgestone Firestone has recently purchased 43 hydrogen fuel-cell forklifts for use in its Aiken plant. Aiken County is also investing in a Center for Hydrogen research and has recently opened a hydrogen fueling station, which is the first on the East Coast.





Other programs that target emission reduction include the City of North Augusta which has implemented a lawn mower exchange program that offers a cash benefit toward the exchange of gas powered mowers for electric mowers, and the City of Augusta's Vehicle Oversight Program. Through the Vehicle Oversight Program approximately 450 GPS units have been installed on the City's vehicles. The first objective of the program is to "provide management with a tool to better utilize available resources", which has a direct connection with energy savings. The GPS units can identify vehicles that idle for an excessive time. Within minutes of receiving an alert, management can take corrective action by contacting the driver. The system can also identify those employees driving with excessive speed, which will initiate corrective action by management. The reduction of driver speed has the secondary affect of saving fuel.

The system accomplishes the second objective of the program "to provide management a tool to monitor employee productivity" which increases efficiency by producing various reports that can be used to change driver behavior or review processes for effective change. Each department has the capability of monitoring their own vehicles. This allows management the ability to observe driver patterns and determine if fuel is being wasted by unnecessary travel.

7.1.5 Regulatory Initiatives

In addition to education and outreach and a focus on emission reduction strategies, the CSRA Clean Air Alliance, in conjunction with local governments and businesses, has also implemented regulatory initiatives that focus specifically on open and prescribed burning. Since 2005 Richmond and Columbia County have issued a seasonal open burning ban during high ozone months. During potentially high ozone days, the Georgia Forestry Commission will also not issue prescribed burn permits in Richmond or Columbia County. Similarly, in an effort to comply with Federal Clean Air Regulations, the State of Georgia also restricts open burning in 54 counties from May 1 – September 30.

At the Savannah River Site, the USDA Forest Service-Savannah River adheres to the current South Carolina Forestry Commission Smoke Management Guidelines on every burn. The USDA Forest Service - Savannah River does not burn on high ozone days or any day the South Carolina Forestry Commission and/or South Carolina Department of Health and Environmental Control restrict burning or declare a "Category 1" day. About 95% of the prescribed burning is conducted in the winter months (December through mid-April) when there is relatively low ozone potential.





Additionally, at Fort Gordon, prescribed burns are necessary to support the military mission of installation and to reduce the risk of wild fires that may be started as a result of training. They are also necessary for proper ecosystem management for endangered species. However, Fort Gordon is very concerned about smoke management from prescribed burns and takes several actions associated with smoke management for every burn. They follow the prescribed burn policy as outlined by the US Fish and Wildlife Service biological opinion issued to Fort Gordon on November 12, 2008. This policy requires that Fort Gordon burn the weapons firing ranges and upland pine areas on a 1 to 3 year rotation. This short return interval keeps fuel loads down and reduces the amount of pollutants generated when compared to longer burn rotations. They also follow the Basic Smoke Management Plan of Georgia, which requires that they utilize current burn weather advice from the Georgia Forestry Commission and other sources, such as the National Weather Service, the day of a burn. They must also complete smoke management screening forms that identify smoke sensitive areas and smoke dispersion. They must also collect fuel load estimates, and run "V" Smoke before each burn to determine plume trajectory.

Ultimately, the planning and decision to burn is based on military and natural resource management requirements and weather conditions. If the weather conditions and burn plan requirements are met, they could conduct a prescribed burn any day of the year. This includes prescribed burns after the open burning ban that occurs between May 1 and September 30 of each year. However, when the Air Quality Index (AQUA) forecast for ozone exceeds 100, prescribed burning near populated areas and the cantonment is suspended. In addition, wild land fires would be suppressed and the "let burn" policy in place for some areas would be suspended. Generally, when the weather conditions are such that an ozone action day is forecast, the weather for burning would probably not meet planning criteria.

7.1.6 Transportation Related Initiatives

The CSRA Clean Air Alliance also supports initiatives that target changing the transportation habits of the local population. One such initiative is the Clean Air Campaign, which is a Georgia program that works with businesses and others to encourage alternative forms of travel such as transit, carpooling and van pooling. This program also encourages telework, flexible work weeks, and the implementation of no-idle zones. Currently, the Clean Air Campaign is working with a number of local businesses and their employees with the commuter awards program. This program awards prizes and money to those employees who log commutes using alternative modes of travel. To date, the Clean Air Campaign has partnered with twelve companies





in the local area, including the City of Augusta, that have implemented a four-day work week option for its employees.

Additional incentives that encourage alternative work and travel patterns include companies, such as Bridgestone Firestone, that provide preferred on-site parking for those employees that use alternative modes of travel for commuting, and the state of Georgia that recently extended and increased its telework tax credit.

The creation of park-and-ride facilities in the area also helps to encourage alternative modes of transportation. Currently, the City of North Augusta, in partnership with Richmond County, Augusta Public Transit, the Lower Savannah Council of Governments' Best Friend Express, local companies, and SCDOT, is seeking funding to build a park-and-ride facility near I-20 and Highway 25 in Aiken County that will serve employees traveling to work locations throughout the region. The South Carolina DOT plans to use this same partnership process in the creation of other park-and-ride facilities within South Carolina.

Another element that can encourage a change in local transportation patterns includes the expansion and improvement of bike lanes and pedestrian trails. As part of the ARTS 2035 LRTP, the bike and pedestrian plan was reassessed to pinpoint areas that need expansion or improvement. As part of this improvement, bike racks will be added to Augusta Public Transit (APT) buses. The Best Friend Express, the transit system that serves Aiken County, with connections to APT routes, already has bike racks installed on its transit vehicles. Finally, the City of Aiken has been awarded a \$400,000 Safe Routes to School Grant to be used for infrastructure improvements to encourage more students to walk or bike to school.

In conclusion, there are multiple on-going initiatives in the area that seek to improve the air quality for those who live and work in the CSRA. Through education and outreach, heavy-duty diesel emission reduction programs, alternative fuel use, regulatory initiatives for open and prescribed burns, and programs that encourage a change in commuter patterns, the CSRA Clean Air Alliance will continue to pursue its goal of clean air and a healthful environment for its residents.

7.1.7 Conformity

If the ARTS area is designated as a non-attainment area, then an air quality conformity determination will need to be completed. The MPO's conformity determinations are to be made based on conformity criteria for transportation plans, programs, and projects. Conformity determinations analyze the impact of the transportation system's expansion





(widening projects and new facilities) has on air quality. The conformity assessment among transportation plans, programs, and projects must show that transportation investments will not delay attaining the ozone standards or worsen air quality violations above specified levels for maintenance areas. Specifically, transportation plans and programs must maintain or reduce vehicle emissions, which is typically done by reducing VMT and VHT. In the event the ARTS area is designated as nonattainment with the implementation of the pending new Environmental Protection Agency standards, transportation control measures may be expanded and fully considered.

7.1.8 Transportation Control Measures

The CAAA requires that non-attainment and maintenance areas for ozone, review Transportation Control Measures (TCMs) for applicability in reducing or limiting mobile source emissions. Even though the ARTS area has not been designated as a non-attainment area, the MPO has regularly met with and consulted with federal and state resource agencies over the last few years to develop policies and programs that address the following 16 TCMs:

- Improved public transit.
- Road or lane restrictions for high occupancy vehicles (HOVs).
- Employer-based transportation management plans.
- Trip-reduction ordinances.
- Traffic flow improvement programs.
- Fringe and corridor parking facilities.
- Vehicle use restrictions in downtowns or major activity centers.
- Programs that provide for all forms of high-occupancy, shared ride services.
- Programs to limit road use in certain areas to pedestrians and bicycles.
- Bicycle lanes, storage facilities, and bike parking programs.
- Programs to control extended vehicle idling.
- Programs to reduce emissions under cold start conditions.
- Employer sponsored flexible work scheduled programs.
- Programs and ordinances to facilitate non-automobile travel.
- Programs for the construction of bicycle and pedestrian paths.
- Programs to encourage the voluntary removal of pre-1980 vehicles from the market place.

7.2 Climate Change

Climate change is expected to have an impact on transportation planning and priorities. Although there is currently no official mandate concerning how climate change should be addressed in the planning process, MPOs are encouraged to consider both





greenhouse gases (GHG) and climate change as part of their ongoing long-range transportation process.

While the national debate regarding climate change continues, it nevertheless is emerging as a main environmental concern linked to transportation. Transportation is the single largest contributor to the nation's carbon footprint. Carbon footprint is generally defined as, the total set of greenhouse gases emissions caused by an organization, event, or product. In 2007, FHWA estimated that approximately 28 percent of GHG emissions in the United States come from transportation, and 82 percent of the transportation sector's emissions are generated by road use. FHWA suggests the following four primary strategies that should be implemented together to reduce GHG emissions from transportation:³⁷

Reduce growth of vehicle hours by improving system: Traffic flow improvements can be achieved through intelligent transportation systems, signal coordination, route optimization, congestion pricing, and improved intermodal links and system connectivity. Other system efficiencies could be achieved by switching to more energy-efficient modes. Operational efficiencies can be achieved through improving vehicle maintenance, which can improve fuel efficiency and prevent breakdowns that tie up traffic, and reducing idling of freight vehicles. Also, large employers can change work policies to include staggered shifts and flexible work hours.

Reduce growth of vehicle miles traveled (VMT): Implementing land use strategies that concentrate development can lessen the need to drive. Providing high-occupancy vehicle (HOV) lanes, transit options, pedestrian and bicycle facilities, and promoting travel demand management programs and telecommuting can also reduce the number of vehicle trips.

Transition to lower GHG fuels: By replacing gasoline and diesel with fuels such as biodiesel and natural gas, less GHGs are emitted over their lifecycle – from production and refinement to distribution and final consumption. Alternative fuels, as defined by the Energy Policy Act of 1992 (EPAct), include ethanol, natural gas, propane, hydrogen, biodiesel, electricity, methanol, and p-series fuels. Using these alternative fuels in vehicles can generally reduce harmful pollutants and exhaust emissions.

³⁷ U.S. Department of Transportation, Federal Highway Administration. **Office of Planning, Environment, and Realty (HEP).**





Improve vehicle technologies: Promoting the development and usage of more fuel efficient vehicles, such as plug-in electric hybrids, will reduce the GHG emissions. Tax credit programs and "feebates" can also encourage the purchase of more fuel efficient vehicles, such as the recent federal "Cash for Clunkers" program.

7.3 Preparing for Change

The challenges of potential air quality non-attainment designation and climate change regulations have the potential to fundamentally change the ways citizens in the ARTS area live and work. Preparing for these potential changes requires a new way of thinking about local and regional planning and cooperation, which the ARTS 2035 LRTP is the initial process. The implementation of planning programs and policies may be required in the future to meet new federal demands under potentially very different air quality and climatic federal regulations in the ARTS area. While the potential future impacts are unknown at this time, the ARTS 2035 LRTP develops a blueprint that provides more mobility options and connects modal systems, which in the end will lower VMT and offer area residents and integrated multimodal transportation system.

The ARTS 2035 LRTP identifies numerous multimodal projects and programs that assist in improving air quality in the region. The following highlights some of these initiatives:

- Improved public transportation coordination efforts between the three transit agencies.
- Educating and encouraging local large employers to implement carpool programs.
- Educating and encouraging local large employers to implement flexible work hours.
- Constructing Park-and-Ride facilities throughout the ARTS area:
 - I-20 in Aiken County in the northwest quadrant at the Edgefield Highway/US 25 interchange at Exit 5 (this project is scheduled for construction in FY 2010).
 - I-20 in Columbia County at Exit 190 (Lewiston Road/Horizon South Parkway) in SW or NE Quad.
 - US 78 (Gordon Highway) in Richmond County in the vicinity of Jimmie Dyess Parkway.
 - US 1 (Deans Bridge Road) in Richmond County in the vicinity of Tobacco Road.





- US 25 (Peach Orchard RD) in Richmond County in the vicinity of Tobacco Road.
- I-20 Aiken County at US 1 interchange Exit 22.
- Constructing bicycle and pedestrian only bridge over the Savannah River connecting North Augusta, SC with Augusta, GA.
- Constructing miles of bicycle paths and sidewalks in the ARTS area.
- Create signal master plans which identify operational and system inefficiencies and propose solutions.
- Improving busy intersections to provide adequate turn lanes to prevent idling of cars:
 - SR 4 at Morgan Road in Augusta-Richmond County.
 - SR 4 at Meadowbrook Road in Augusta-Richmond County.
 - SR 4 at Georgetown Road in Augusta-Richmond County.
 - SR 4 at Walton Way in Augusta-Richmond County.
 - SR 56 at Dixon Airline Road in Augusta-Richmond County.
 - SR 56 at Marvin Griffin Road in Augusta-Richmond County.
 - SR 56 at Apple Valley Drive in Augusta-Richmond County.
 - SR 56 at Old Waynesboro Road in Augusta-Richmond County.
 - Old Waynesboro Road in Augusta-Richmond County.
 - SR 88 at CR 58 (Bath Edie Road) in Augusta-Richmond County.
 - US 25 (Edgefield Road) and Walnut Lane in North Augusta.
 - Georgia/Knox Avenue (US 25) and Five Notch/ Bradleyville Road (S-45) in North Augusta.
 - I-20 and Martintown Road (SC 230) in North Augusta.
 - Five Notch Road (SC 45) and Pisgah Road in North Augusta.
 - Five Notch Road (SC 45) and Walnut Lane in North Augusta.
 - West Martintown Rd and Knobcone Avenue in North Augusta.
 - Richland Avenue West (US 1/US 78) and University Parkway (S-2131) in Aiken .
 - Silver Bluff Road (SC 302) and Hitchcock Parkway (SC 118) in Aiken.





8. Safety and Security

SAFETEA-LU states that the metropolitan transportation planning process shall provide for consideration and implementation of projects, strategies, and services to increase the ability of the transportation system to support homeland security and to safeguard the personal security of all motorized and non-motorized users. In order to comply with SAFETEA-LU, the ARTS 2035 goals and objectives developed and identified in **Chapter 4** address both safety and security issues.

8.1 Safety

Improving safety has always been a top priority of the MPO, GDOT, and SCDOT, and one of the goals of the ARTS 2035 LRTP is to improve safety in the region. Thus, travel safety should be improved for all transportation users, which entails improving roadway, transit, bicycle, and pedestrian systems.

As noted, SAFETEA-LU places a greater emphasis on safety, and MPOs are required to address safety during the LRTP planning process. One way this emphasis is reflected is supporting the Georgia and South Carolina Strategic Highway Safety Plans. SAFETEA-LU requires that all states prepare a Strategic Highway Safety Plan (SHSP) and that “metropolitan transportation plans should include a safety element that incorporates or summarizes the priorities, goals, countermeasures, or projects for the MPA (Metropolitan Planning Area) contained in the Strategic Highway Safety Plan.” As ARTS projects are developed, elements from each SHSP should be incorporated.

8.1.1 Georgia Strategic Highway Safety Plan

Georgia’s Strategic Highway Safety Plan (SHSP) provides a review of Georgia’s highway safety planning as well as existing plans in agencies throughout Georgia. Georgia’s SHSP includes a review of existing highway safety plans in Georgia and incorporates those existing highway safety plans into the SHSP. In addition, important public safety issues were evaluated and prioritized in order to develop Georgia’s Key Emphasis Areas (KEA’s).³⁸

Georgia’s Key Emphasis Areas are:

- Occupant Protection.

³⁸ Georgia Strategic Highway Safety Plan. October 2006.





- Seatbelts and Air Bags.
- Serious Crash Type:
 - Intersections.
 - Keeping Vehicles on the Road – lane departure.
 - Head-on and Cross Median.
 - Crashes.
 - Minimizing Consequences of Leaving Road.
 - Work Zones.
 - Aggressive Driving/Super Speeder.
 - Impaired Driver.
- Age related issues:
 - Graduated Driver’s Licensing.
 - Younger Adult Drivers.
 - Older Drivers.
- Non-motorized User:
 - Pedestrians.
 - Bicyclists.
- Vehicle Type:
 - Heavy Trucks.
 - Motorcycles.
- Trauma System/Increasing EMS Capabilities:
 - Traffic/Crash Records and Data Analysis.
 - Traffic Incident Management.

Georgia adopted a goal of 1.0 fatalities per 100 million vehicle miles traveled by 2010. In 2007, there were 1.46 fatalities per 100 million VMT, which is a slight decline since 2005 (1.52 fatalities per 100 million vehicle miles traveled)³⁹.

³⁹ Governor’s Office of Highway Safety (GOHS). Annual Highway Safety Plan (HSP), FFY 2010.





8.1.2 South Carolina Strategic Highway Safety Plan

South Carolina's Strategic Highway Safety Plan: The Roadmap to Safety recognized that South Carolina had one of the highest traffic fatality rates in the nation and asserted that the current number of deaths and injuries was unacceptable. The plan was developed through a cooperative approach between SCDOT and a range of partners, but under Federal law SCDOT leads the statewide implementation effort. The goals of the statewide SHSP are:⁴⁰

- **Fatality Reduction Goal:** Reduce the number of traffic crash fatalities to 784 or fewer by 2010, an approximate 25 percent reduction from the 2004 baseline figure of 1,046.
- **Injury Reduction Goal:** Reduce the number of traffic crash injuries experienced by 3 percent annually. There were 51,226 injuries reported in the baseline year of 2004. This goal was based on injury reduction trends over the last decade and was considered reasonable, considering the trend of increasing traffic volumes.
- **Safety Resources Goal:** Endorse and support, as appropriate, efforts to increase funding for state and local traffic law enforcement safety improvements to highways, and enhanced Emergency Medical Service (EMS) and first-responder capabilities.

To reach the fatality reduction goal in particular, eight key strategies were identified:

- Collaborate with other agencies to maintain support, and improve existing safety and licensing legislation.
- Deter, identify, arrest, and adjudicate alcohol- and other drug-impaired drivers and pedestrians.
- Expand, improve, and maintain roadway clear zones and visibility features (i.e., markings, signs, lighting, etc.).
- Expand the installation of shoulder, edgeline, and centerline rumble strips and protective barriers, and the use of wider, paved shoulders.
- Improve communications strategies.
- Improve current data systems and analysis methods.
- Increase enforcement and public information and education on traffic safety issues.
- Increase occupant restraint usage.

⁴⁰ South Carolina's Strategic Highway Safety Plan: The Roadmap to Safety





8.1.3 Highway and Truck Safety

As noted in the Regional Freight Study, truck safety is a particular concern in any region with high levels of truck and auto activity. Particularly, the mixing of truck and auto traffic has unique safety characteristics which must be considered. The Regional Freight Study identified highway safety improvements, and these projects were considered during the development of the ARTS 2035 LRTP.

One of the most successful strategies of providing access to abutting land in the safest possible manner is the adoption of an access management policy. Several studies have shown that the crash rates rise with more signalized intersections, more driveways and more pedestrian motor vehicle conflict points.⁴¹ The range of safety benefits of an access management policy falls between 30 percent to 60 percent reduction in crashes, depending on the type of access controls used.⁴²

While funding is limited, implementing access management improvements along congested roadways in the ARTS area will improve safety and traffic operations along these corridors. Any new three- or five-lane facilities constructed in the area should provide a landscaped median with sufficient turn lanes and storage areas to adjacent residential and commercial developments.

8.1.4 Bicycle and Pedestrian Safety

As noted in the ARTS Bicycle and Pedestrian Plan, safe use of bicycle and pedestrian facilities, as well as increased awareness of drivers, will be a key component to a successful system and will help to promote long-term use of facilities. With increased use of this transportation mode, it is likely that an increase in crashes will also occur; therefore, safety and outreach programs targeting both users and nonusers will be critical.

Safety programs range from increasing the safe use of facilities for children walking to school, to teaching all levels of cyclists how to be “effective” at riding in an urban environment, to increasing driver awareness and respect for other modes of transportation. Awareness can start with a simple sign or bumper sticker that states, “Share the Road.” Drivers must become accustomed to sharing the roadway with

⁴¹ Gluck, J.H. Levinson, and Stover, “Impacts of access Management Techniques,” *Report 420*, National Cooperative Highway Research Program, Transportation Research Board, Washington D.C., 1999.

⁴²NCHRP Report5S46. Incorporating Safety into Long-Range Transportation Planning. Transportation Research Board 2008





bicyclists and be aware of pedestrians walking on the shoulder or crossing the road. Both bicyclists and pedestrians should be aware of local traffic laws relevant to safe behavior. The ARTS 2035 LRTP identifies gaps in the bicycle and pedestrian system and subsequent projects were identified that improve safety and connectivity through the region.

8.1.5 Public Transportation Safety and Security

The FTA has maintained a consistent approach to safety and security over the past few years. The goal of FTA's Safety and Security Program is to achieve the highest practical level of safety and security for all modes of transit. In order to protect passengers, employees, revenues, and property, all transit systems are encouraged to develop and implement a proactive system safety program plan. FTA supports these efforts by developing guidelines and best practices, providing training and by performing system safety analyses and reviews. The three transit providers in the ARTS area integrate safety into their planning efforts, as well as educating their staff on safety measures.

The FTA Office of Safety and Security (TPM-30) provides an integrated set of oversight and technical assistance programs designed to prevent public transportation fatalities, injuries, property damage and system interruption, and to ensure the capability to respond effectively to those accidents, security incidents, and emergencies that do occur.

TPM-30 is accountable for the quality of its services and the usefulness of its products to industry. Whether overseeing implementation of safety regulations, providing training, developing guidelines and best practices manuals, partnering with other Federal agencies and industry associations, or creating programs to encourage voluntary improvements in safety and emergency preparedness, TPM-30 activities must be driven by clear goals and must be assessed on a recurring basis to determine their effectiveness. In FY 2007, TPM-30 established a new program for tracking its activities and performance.

However, during the past year, the administration, in response to several rail accidents, proposed a new direction for the FTA via a legislative proposal for a public transportation safety program. That proposal would include three new or expanded elements:

- First, it would require the Secretary of Transportation to establish and enforce minimum Federal safety standards for rail transit systems not regulated by FRA.





The legislation also provides the Secretary the option to establish a safety program for public transportation bus systems.

- Second, the Secretary would establish a program whereby a State would be eligible for Federal transit assistance to carry out a Federally-approved public transportation safety program. A State would not be preempted from establishing a more stringent safety standard if the standard meets certain criteria and the Secretary would enforce the Federal safety standards absent a State's participation.
- Third, the program would ensure that a State agency overseeing transit systems would be fully financially independent from the transit systems it oversees.

In addition to expanding the role of the FTA into an evaluative function, there has been additional discussion indicating the overall goal would further be to expand that role to include all modes. This expanded safety program would be a significant change for the FTA and will receive further review and discussion, most likely as part of the administration's surface transportation reauthorization proposal. The MPO would be responsible for monitoring the potential expansion of the safety program and incorporating it into their regular planning activities.

With regard to security funding, the American Public Transportation Association (APTA) has continually reinforced the need for the Transportation Security Administration (TSA) and the Congress to maintain funding levels. In an April 21, 2010 testimony by APTA President Bill Millar to the House Appropriations Committee on Homeland Security he noted:

"A recent survey of public transit systems identified \$6.4 billion in security needs and urged Congress to provide at least \$1.1 billion in funding for fiscal year 2011, which is the level authorized under the Implementing Recommendations of the 9/11 Commission Act of 2007. Federal funding provided in fiscal year 2010 for public transportation security was \$253 million.

"Noting that only \$1.25 billion of the \$3.4 billion authorized in the 9/11 Act has been appropriated since it was enacted in 2007, and even less has been ultimately directed in grants to transit agencies, Millar said, "We do not need another wake-up call in public transportation. We need the financial resources to implement all we have learned since 9/11."

The \$6.4 billion in security-related investment needs identified in the survey includes \$4.4 billion for capital investments and \$2 billion for personnel and other operational





expenses over the next five years. Examples of projects include closed-circuit television, chemical detection equipment, tunnel communication equipment, control center redundancy and equipment, and intrusion and perimeter monitoring and protection.

8.2 Security

SAFETEA-LU requires that the metropolitan planning process for a metropolitan planning area shall provide for consideration of projects and strategies that will increase the security of the transportation system for motorized and non-motorized users. To that end, securing the multimodal transportation system in the ARTS area is a goal of the ARTS 2035 LRTP. GDOT, SCDOT, Augusta-Richmond County, Columbia County, Aiken County, Edgefield County, Augusta Public Transit, Columbia County Transit, and Best Friends Express are all tasked with securing their transportation system, and the MPO works with these entities to ensure the local multimodal transportation systems are secure. The transportation system plays a vital role in responding to emergencies, and securing these facilities is done at the state, regional, and local levels. The States of Georgia and South Carolina, as well as Augusta-Richmond County, Columbia County, and Aiken County each have developed Emergency Operation Plans, which provide processes and procedures in responding to natural or manmade hazards.

8.2.1 Georgia Emergency Operations Plan

The Georgia Emergency Operations Plan (GEOP) has been developed to ensure mitigation of, preparedness for, appropriate response to, and timely recovery from natural and manmade hazards that may affect residents of Georgia. The GEOP is based on the authority of the state government for emergency management and contains specific Emergency Support Functions (ESFs). Standard Operating Procedures (SOPs) for accomplishment of these functions are the responsibility of the primary state agency or organization in coordination with other supporting agencies and organizations.

8.2.2 South Carolina Emergency Operations Plan

Under the South Carolina Emergency Operations Plan (SCEOP), SCDOT is responsible for the management of transportation assets and the transportation infrastructure during a threat of, or immediately following, an emergency or disaster incident that is critical to the safety of all state residents and visitors. This function includes providing for coordinated plans, policies, and actions of state and local governments to ensure the access and safety of the public traveling on the transportation system during all hazards. Once the threat or hazard no longer exists, SCDOT is also responsible for prompt inspections of the transportation infrastructure to facilitate orderly reentry into the area after an evacuation.





8.2.3 Augusta-Richmond County Emergency Operations Plan

The Augusta-Richmond County Emergency Operations Plan (EOP) describes the management and coordination of resources and personnel during periods of major emergency. This comprehensive local emergency operations plan is developed to ensure mitigation and preparedness, appropriate response and timely recovery from natural and manmade hazards which may affect residents of Richmond County. The emergency support function of transportation services involves direction and coordination, operations, and follow-through during an emergency or disaster. The plan addresses the following:

- Emergency response in compliance with the State-mandated Emergency Operations Plan process.
- Emergency response policies that provide Departments and Agencies with guidance for the coordination and direction of municipal plans and procedures.
- Unified training and response exercises.

The plan identifies 15 emergency support functions, and under the heading of transportation, states that Augusta-Richmond County's responsibility is to support and assist municipal, county, private sector, and voluntary organizations requiring transportation for an actual or potential Incident of Critical Significance.

8.2.4 Columbia County Emergency Operations Plan

The Columbia County comprehensive local emergency operations plan has been developed to ensure prior mitigation and preparedness, appropriate response, and timely recovery from natural or man-made hazards affecting this jurisdiction. The plan is organized based on the jurisdictional authority of the local government for emergency management and contains specific emergency support functions that must be provided during emergencies. The plan consists of the following sections:

- Basic Plan – outlines the legal basis, situations and assumptions, responsibilities, concepts of operations, direction and coordination of local emergency operations.
- Emergency Support Functions – states specific services and assistance to be provided, describes the lead agency's responsibility and/or authority, includes assisting agencies and organizations responsibilities, and indicates the direction and coordination of each function.
- Appendices.
- Hazard Profile – describes natural or man-made situations most likely to affect this emergency management jurisdiction.





- Other Appendices – identify components that are specific to this emergency management jurisdiction (e.g., contacts and resource capabilities).

The emergency support function of transportation services involves direction and coordination, operations, and follow-through during an emergency or disaster. The purpose of the emergency support function is to provide guidance and direction for the coordination of transportation services and operations, before, during, and after an emergency or disaster. The scope of transportation services includes the mass transportation of citizens during an emergency evacuation and the transportation of emergency personnel, equipment, and supplies as dictated by emergency operations.

8.2.5 Aiken County Emergency Operations Plan

The Aiken County Emergency Operations Plan (EOP) has been developed for use by Aiken County government officials to ensure mitigation and preparedness, appropriate response, and timely recovery from hazards that may affect Aiken County. Further, this plan is designed to include the Emergency Support Function (ESF) identified in the State Response Plan. The plan has the following three major parts:

- The letter of promulgation, which approves the plan and assigns responsibilities.
- The Basic Plan, which outlines policies and general procedures that provide a common basis for joint county and municipal governments operations in a natural, technological, or purposeful harm disaster.
- The Emergency Support Functions (ESFs), which provide guidelines for the development of appropriate mechanisms to facilitate the prompt and efficient application of resources in any emergency or disaster situation. ESFs 1 through 25 correspond to the State and Federal Emergency Support Functions.

The Aiken County Emergency Management Division coordinates the county's integrated emergency management system through partnerships with all emergency response organizations, voluntary agencies, private non-profit organizations and other support services, to ensure efficient preparation for, effective response to, and timely recovery from emergencies and disasters to reduce human suffering and property loss.

This comprehensive local emergency operations plan is developed to ensure prior mitigation and preparedness, appropriate response, and timely recovery from natural or man-made hazards affecting this jurisdiction. The plan is organized based on the jurisdictional authority of the local government for emergency management and contains specific emergency support functions that must be provided during emergencies.





8.2.6 Strategic Highway Network

The Strategic Highway Network (STRAHNET) system of public highways provides access, continuity, and emergency transportation of military personnel and equipment. The 61,000-mile system, designated by the Federal Highway Administration in partnership with Department of Defense, comprises about 45,400 miles of Interstate and defense highways and 15,600 miles of other highways. STRAHNET is complemented by about 1,700 miles of connectors—additional highway routes linking more than 200 military installations and ports to the network. Most large military convoys use the Strategic Highway Network. STRAHNET roadways are designated for use in times of rapid mobilization and deployment of armed forces.⁴³ In the ARTS area there are five STRAHNET routes and no connectors. The STRAHNET routes are I-20, I-520, Fort Gordon Highway/US 78/SR 10 (from I-520 to Fort Gordon), Deans Bride Road/US 1/SR 4 (from I-520 paralleling Fort Gordon), and Peach Orchard Road/US 25/SR 121. Securing these routes and the bridges over the Savannah River is essential for national security purposes.

8.3 ARTS Safety and Security

ARTS, as outlined in the Georgia and South Carolina SHSPs and the numerous Emergency Operations Plan, continues to incorporate safety and security provisions in the transportation planning process. The SHSPs of each state are taken into account when projects are considered for inclusion in the 2035 LRTP and inclusion in the TIP. The EOPs also provide guidance to the MPO during times of natural or manmade disasters.

⁴³ FHWA





9. Financial Plan

Funding for our nation's transportation system is at a crossroads. Federal and state transportation revenues are losing pace with needed investments, and the gap between transportation needs and available revenue continues to grow. A few key factors are eroding these sources of revenue. First, state and federal gas taxes have not changed. Second, recent increases in oil prices and an increased trend toward green technology have caused people to adjust their driving habits and buy more fuel-efficient or hybrid cars.

In addition to these recent trends, SAFETEA-LU was extended to December 31, 2010. Regardless of when the surface transportation reauthorization occurs, it is unlikely that it will adequately fund all of the nation's transportation needs. When it is enacted, however, the ARTS area stands ready with a prioritized list of multimodal transportation improvement projects and programs.

Federal planning regulations require that the financial plan presented in LRTPs be financially constrained, which means that the estimated cost for all transportation improvements presented in the LRTP cannot exceed the amount of reasonably expected revenues projected from identified funding sources. This requirement ensures that the plan is based upon realistic assumptions and can be implemented.

Consequently, the MPO coordinated with GDOT, SCDOT, and other local jurisdictions to identify transportation revenue that are reasonably expected over the next 25 years, which govern how and when projects will be financed. Actual funding availability over the next 25 years will depend largely upon future actions and public policy directives initiated at the federal and state levels. Today, most roadway, bicycle, and pedestrian projects in the ARTS area are financed through federal, state, and local funds which are mostly derived from taxes on fuel, fees from vehicle registration, and local option sales taxes. Transit projects are also funded through federal, state, and local sources, as well as revenue received through fares.

The Financial Plan provides financial details, such as anticipated federal, state, and local revenues, cost inflation factors, Year-of-Expenditure dollars, and planning level cost estimates. Anticipated costs and revenues are based on the best available information, which was provided by GDOT, SCDOT, and local jurisdictions in the ARTS area.





9.1 Georgia 2020 Transportation Act

During the 2010 Georgia General Assembly, House Bill 277 (HB 277) was passed and it was signed into law by Governor Purdue. The enacted law, The Georgia 2020 Transportation Act, permits by statute referenda developing 12 Regional Commissions that cover all of Georgia and imposes on a 1 percent sales tax for 10 years to fund a list of transportation projects, which may include all modes of transportation. The referenda will occur during the 2012 primary election day. If passed by Georgia voters, it is anticipated that Augusta-Richmond County and Columbia County will receive transportation funding from this potential new funding source. However, the ARTS 2035 LRTP does not include any financial revenue from this potential new funding source.

9.2 Projected Federal, State, and Local Revenues

As illustrated in **Table 25**, the total revenues for the ARTS 2035 LRTP are forecasted at \$3.3 billion. GDOT and SCDOT provided the projected federal and state revenue dollars available to the year 2035, and both used a 2.5 percent growth rate to determine the available revenue to the year 2035. Local revenue projections in Georgia (Richmond County and Columbia County) were provided by ARTS staff, and in South Carolina Aiken County staff provided the local revenue projections. The local revenue projections include Special Local Option Sales Tax (SPLOST) initiatives in Columbia County, Richmond County, and a County Capital Projects Sales Tax in Aiken County. Federal and local transit revenue estimates were derived by collaborating with Augusta Public Transit, Columbia County Transit, and Best Friends Express staff, as well as the ARTS 2030 LRTP Section VIII – Financial Plan.

As shown in **Figure 79**, 88 percent of the projects and programs in the 2035 LRTP will be funded through federal and state funding sources, 5 percent through local funds, and 3 percent in federal transit funds, and 4 percent in local transit revenues. The federal and state revenue estimate includes funding to construct, operate, and maintain the multimodal transportation system in the ARTS area.



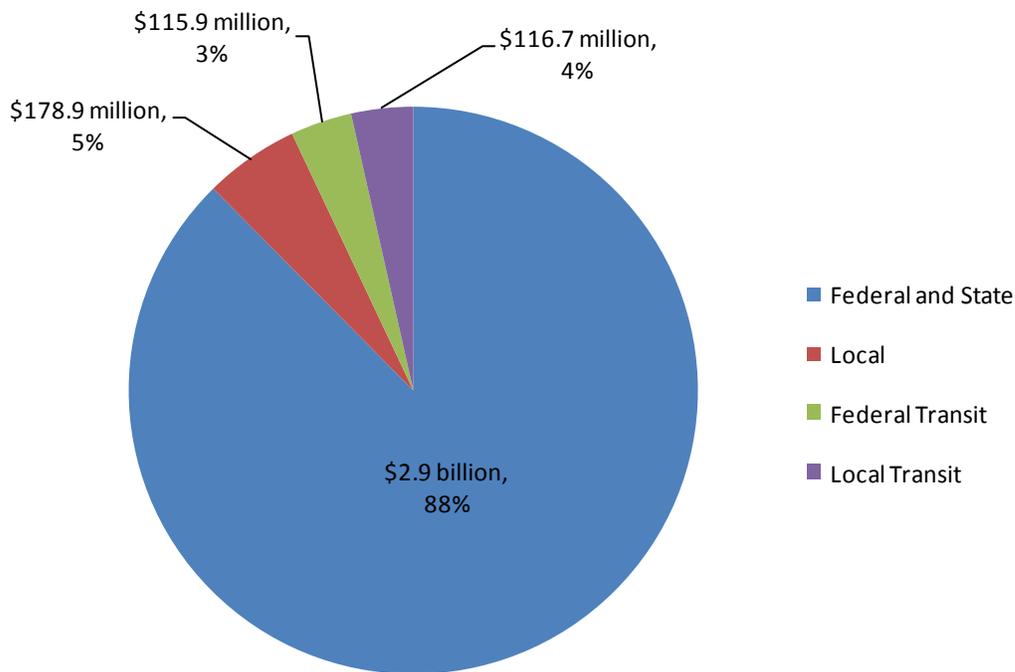


Table 25: Projected 25 Year-of-Expenditure Revenues

	Federal and State ¹	Local	Transit Federal	Transit Local	Total YoE Dollars
Georgia	\$2,749,500,000	\$89,975,000	\$85,156,981	\$100,000,000	\$3,024,631,981
South Carolina	\$148,316,000	\$88,991,617	\$30,715,793	\$16,696,136	\$284,719,546
Total	\$2,897,816,000	\$178,966,617	\$115,872,774	\$116,696,136	\$3,309,351,527

Source: GDOT, SCDOT, ARTS Staff, Aiken County, Augusta Public Transit, Best Friends Express, and ARTS 2030 LRTP Section VIII – Financial Plan. Note 1: Federal and State revenue includes maintenance and operation funding.

Figure 79: Projected 25 Year-of-Expenditure Revenues by Funding Source



Source: GDOT, SCDOT, ARTS Staff, Aiken County, Augusta Public Transit, Best Friends Express, and ARTS 2030 LRTP Section VIII – Financial Plan.





9.3 Year-of-Expenditure Dollars

As noted earlier, SAFETEA-LU requires that LRTP projects and programs must be financially constrained and projects and programs also must account for costs in terms of Year-of-Expenditure (YoE) dollars. FTA and the FHWA have jointly provided guidance on fiscal constraint for LRTPs and TIPs. The guidance calls for the use of YoE dollars in preparing cost projections for highways and transit projects in MPO planning documents. The guidance recommends using a 4 percent annual inflation rate for construction costs for both highway and transit improvements.

In order to develop YoE dollars, inflationary cost increases must be applied to each project or program contained in Tier 2 (2015 to 2024) and Tier 3 (2025 to 2035) in the LRTP. Projects and programs contained in Tier 1 (2011 to 2014) include the next TIP period, and these costs are already financially constrained by the MPO through consultation with GDOT and SCDOT. The ARTS 2035 LRTP constrained project list, presented in this section, complies with this SAFETEA-LU requirement.

The YoE requirement dramatically increases the complexity involved in developing the constrained project list. However, as allowed by SAFETEA-LU, LRTP projects in the outer years (2015 to 2035) can be grouped into tiers. Developing tiers enables an average inflation rate to be applied to projects that are grouped into one of the time bands. It also provides flexibility in the projects start and end date so that the appropriate inflation factor can be applied. The ARTS 2035 LRTP contains the following three time bands:

- Tier 1 – FY 2011 to FY 2014.
- Tier 2 – FY 2015 to FY 2024.
- Tier 3 – FY 2025 to FY 2035.

In consultation with GDOT and SCDOT, a 4 percent compound annual growth rate (cagr) or inflation rate was applied to the initial planning level cost estimate (PLCE) to derive the inflation-adjusted estimate or YoE of project costs identified in the ARTS 2035 financially constrained LRTP. The first time band (Tier 1 – 2011 to 2014), represent projects contained in the upcoming FY 2011 to 2014 TIP and PLCE are shown in YoE dollars, so an inflation factor is not necessary since project costs are already YoE dollars. The remaining two time bands (Tier 2 – 2015 to 2025 and Tier 3 – 2025 to 2035) applied an average inflation factor of 1.24 to Tier 2 projects and a 1.89 inflation factor was applied to Tier 3 projects.





9.4 Planning Level Cost Estimates

Federal planning regulations require that all project cost estimates include the cost of the total project and account for inflation. Planning level cost estimates for projects in Georgia were developed by using GDOT's new tools. The first tool, RUCEST—the Right-of-Way and Utility Relocation Cost Estimate Tool—estimates right of way and utility relocation costs based on the current and proposed typical sections, assumed existing and needed right-of-way, and known and assumed utilities. The second tool modified the AASHTO Shareware Trns•port® Cost Estimation System® (CES®) tool. “Trns•port® CES®” estimates the planning level construction phase based on the proposed project's typical section while utilizing the latest available GDOT project cost trends. Both tools provide a consistent and systematic approach to developing planning level cost estimates and both tools utilize updated construction material, right-of-way, and utility relocation costs. Some of the planning level cost estimates contained in the ARTS 2035 financially constrained plan were recently updated by GDOT and thus some costs are derived from GDOT's Preconstruction Status Reports.

Planning level cost estimates for projects in South Carolina were provided by SCDOT staff or the consultant team, which were prepared using a consistent methodology and locally derived unit cost estimates.

9.5 Expenditures

As shown in **Table 26**, the planning level cost estimates and YoE dollars for the ARTS 2035 LRTP projects are divided into three Tiers. Projects programmed covering period 2011-2014 is considered short-term, while the mid-term and long-term cover the implementation periods of 2015-2024 and 2025-2035, respectively. The YoE dollars for Tier 1 (2011 to 2014) total nearly \$281.7 million; YoE for Tier 2 total \$1.2 billion; YoE for Tier 3 total nearly \$1.5 billion; and the total ARTS 2035 LRTP YoE dollars is nearly \$3 billion.





Table 26: Expenditures by Tier and State

Georgia		
Time Period	Planning Level Cost Estimate 2010 Dollars	Year of Expenditure Dollars
Tier 1 (2011 to 2014)	\$244,286,760	\$244,286,760
Tier 2 (2015 to 2024)	\$888,902,502	\$1,102,239,102
Tier 3 (2025 to 2035)	\$724,804,156	\$1,369,879,856
Total	\$1,857,993,418	\$2,716,405,718
South Carolina		
Time Period	Planning Level Cost Estimate 2010 Dollars	Year of Expenditure Dollars
Tier 1 (2011 to 2014)	\$37,463,909	\$37,463,909
Tier 2 (2015 to 2024)	\$94,711,449	\$117,442,197
Tier 3 (2025 to 2035)	\$65,997,805	\$124,735,851
Total	\$198,173,163	\$279,641,957
Total ARTS Area	\$2,056,166,581	\$2,996,047,675

Source: GDOT, SCDOT, ARTS Staff, Aiken County, Augusta Public Transit, Best Friends Express, and ARTS 2030 LRTP Section VIII – Financial Plan.

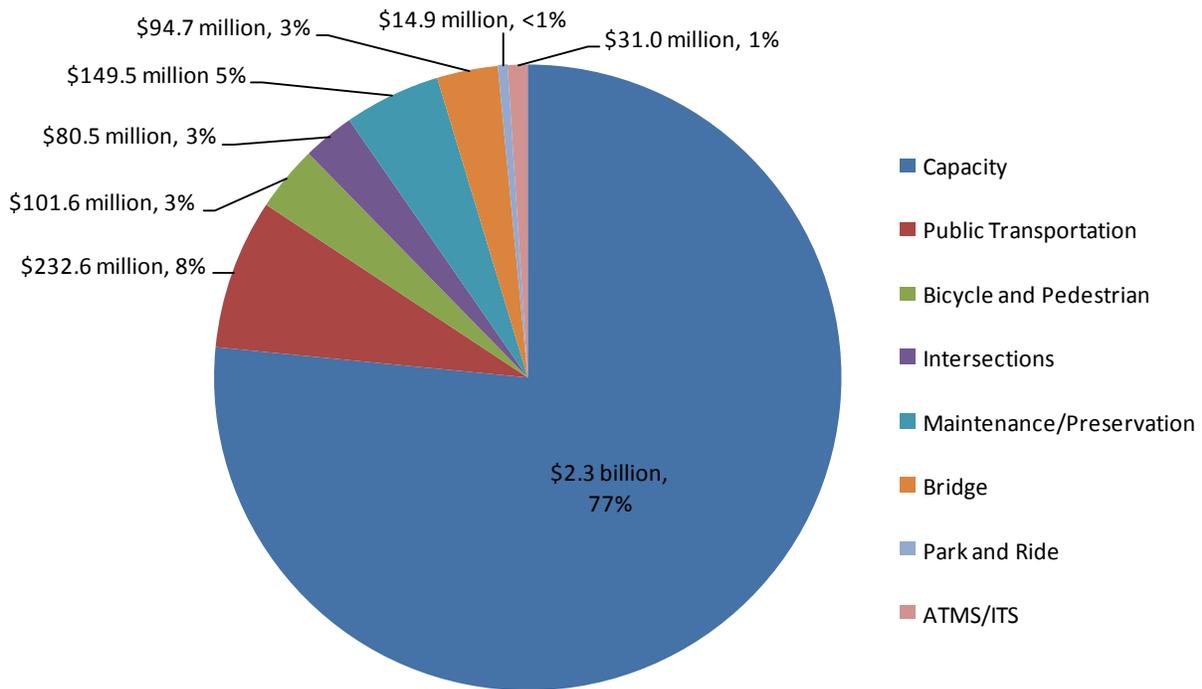
9.6 Expenditures by Improvement Type

As noted earlier, there are nearly \$3 billion of improvements identified in the ARTS 2035 LRTP. **Figure 80** shows the total expenditures by improvement type that are contained in the financially constrained LRTP. Capacity improvements total 77 percent (\$2.3 billion) of the total expenditures; public transportation (capital and operating) total 8 percent (\$232.6 million); maintenance, preservation and operational improvements total 5 percent (\$149.5 million); bicycle and pedestrian improvements total 3 percent (\$101.6 million); intersection improvements total 3 percent (\$80.5 million); bridge improvements total 3 percent (\$94.7 million); ATMS/ITS improvements total 1 percent (\$31 million); and park-and-ride facilities total less than 1 percent (\$14.9 million).





Figure 80: Expenditures by Improvement Type



Source: ARTS 2035 LRTP

9.7 Expenditures vs. Revenues

Federal planning regulations require that the financial plan presented in the LRTP must be financially constrained, which means that the planning level cost estimates for all transportation improvements presented in the LRTP cannot exceed the amount of reasonably expected revenues projected from identified funding sources. This requirement ensures that the LRTP is based upon realistic assumptions and can be implemented over the 25 year planning period. **Table 27** demonstrates that the ARTS 2035 LRTP is financially constrained. In other words, the federal, state, and local revenue anticipated in Georgia and South Carolina over the next 25 years (\$3.3 billion) is adequate to cover the planning level cost estimates for the project phases (nearly \$3 billion) listed in the ARTS 2035 LRTP.





Table 27: Expenditures and Revenue by Tier and State

Georgia			
Time Period	Projected Revenues	Year of Expenditure Dollars	Revenues – Expenditures Remaining Revenues
Tier 1 (2011 to 2014)	\$244,286,760	\$244,286,760	\$0
Tier 2 (2015 to 2024)	\$1,365,415,322	\$1,102,239,102	\$263,176,220
Tier 3 (2025 to 2035)	\$1,418,819,954	\$1,369,879,856	\$48,940,098
Total	\$3,028,522,036	\$2,716,405,718	\$312,116,318
South Carolina			
Time Period	Projected Revenues	Year of Expenditure Dollars	Revenues – Expenditures Remaining Revenues
Tier 1 (2011 to 2014)	\$39,337,861	\$37,463,909	\$1,873,952
Tier 2 (2015 to 2024)	\$118,473,572	\$117,442,197	\$1,031,375
Tier 3 (2025 to 2035)	\$126,908,113	\$124,735,851	\$2,172,262
Total	\$284,719,546	\$279,641,956	\$5,077,590
Total ARTS Area	\$3,313,241,582	\$2,996,047,674	\$317,193,908

Source: GDOT, SCDOT, ARTS Staff, Aiken County, Augusta Public Transit, Best Friends Express, and ARTS 2030 LRTP Section VIII – Financial Plan.





10. Financially Constrained Plan

The multimodal transportation investments highlighted in this chapter address the goals and objectives outlined in **Chapter 2**, as well as the comments received during the public participation process. The improvements concentrate on developing a sustainable multimodal transportation system in the ARTS area that improves safety, mobility, and access for all users.

The Financially Constrained Plan provides financial and project phasing detail, as well as highlighting short-term actions to implement plan strategies. Planning level cost estimates, year-of-expenditure dollars, and anticipated revenues are also presented. Anticipated costs and revenues are based on the best available information, which was provided by GDOT, SCDOT, and local jurisdictions.

10.1 Previously Committed Funding Priorities (Tier 1)

The short-range or top priority projects consist of those projects contained in the ARTS Tier 1 (2011 to 2014) or Transportation Improvement Program (TIP). The TIP projects were defined and prioritized prior to the development of the 2035 LRTP and are already undergoing preliminary engineering and environmental analysis or right-of-way acquisition, or the project is under construction. Since the cost estimates have been recently updated by GDOT and SCDOT, no cost escalation factors have been applied to the TIP projects.

The 2011 to 2014 TIP was developed by the MPO as part of its continual planning process. The projects identified in the 2010 to 2013 TIP will move forward into the 2011 to 2014 TIP, and any new projects or project phases will be included in the financially constrained TIP during this process. **Tables 28** and **29** identify the Tier 1 financially constrained projects in Georgia and South Carolina.





Table 28: Tier 1 (2011 to 2014) Program of Projects – Georgia

GDOT PI#	Project Name	From	To	Description	Phase	Cost Estimate
Widening Projects						
250610	CR 65 (Windsor Spring RD)	Willis Forman RD	Tobacco RD	Widen to 4 through lanes with turn lanes as needed.	ROW	\$18,719,178
250610	CR 65 (Windsor Spring RD)	Willis Forman RD	Tobacco RD	Widen to 4 through lanes with turn lanes as needed.	CST	\$37,968,097
231440	Columbia Road (SR 232)	CR 221 (Old Belair RD)	SR 383 (Belair RD)	Widen to 4 through lanes.	ROW	\$1,910,000
250600	SR 1017 (Flowing Wells RD)	I-20	SR 104 (Washington RD)	Widen to 4 through lanes with turn lanes as needed. (with 3 intersection improvement projects)	ROW	\$23,499,000
210700	I-520	US 1/SR 4 (Deans Bridge RD)	US 78/278 (Gordon HWY)	Widen to six lanes	UTIL, CST	\$25,252,851
6431	SR 56 (Mike Padgett HWY)	Old Waynesboro Road	Bennock Mill Road	Add a raised median, with turn lanes as needed (no capacity added) (2 left-turn lanes, 1 right-turn lane and 1 signal replacement added)	ROW, CST	\$29,039,615
220680	SR 4 (15th ST)	Milledgeville Road	Government Street	Widen to 4 and 6 through lanes with turn lanes as needed. (7 signals)	ROW	\$4,499,501
245320	CR 65 (Windsor Springs RD)	SR 88	Willis Forman RD	Widen to 4 through lanes with turn lanes as needed. (1 bridge and 3 signals added)	ROW	\$4,900,000
8346	SR 28 (Fury's Ferry RD)	South Carolina	Evans To Locks RD	Widen to 4 through lanes.	SCP	\$2,000,000
8350	SR 388 (Lewiston Road)	SR 232 (Columbia RD)	I-20	Widen to 4 through lanes.	SCP	\$1,000,000
	Riverwatch Parkway Interchange Improvements	Riverwatch Parkway	I-20	Provide additional turn lanes, ramp widening and signal improvements to improve traffic flow in the vicinity of I-20	PE	\$750,000
Bridge Projects						
250615	Windsor Spring Rd at Spirit Creek	NA	NA	Reconstruct and widen bridge to 4 lanes over Spirit Creek	CST	\$2,046,151
7167	SR 232 at Walton Branch	NA	NA	Reconstruct SR 232 bridge at Walton Branch	PE, ROW, Util, CST	\$12,481,250
Pedestrian Improvement Projects						
	15th Street Pedestrian Improvement Project	John C. Calhoun Expressway	15th Street CSX Overpass	Construct medians and upgrade traffic signals along 15th Street	PE	\$840,000
Rail Relocation Projects						
6694	Earmark for a rail relocation project in the Georgia part of the ARTS area	To be determined	To be determined	To be determined	CST	\$2,000,000
New Construction Projects						
250620	William Few PKWY	SR 104 (Washington RD)	Hardy-McManus RD	2-lane extension	CST	\$7,239,000
Transit Capital Funds						
	Transit Capital Projects			Lump	All	\$13,625,117
Transit Operating Funds						
	Transit Operations			Lump	All	\$16,000,000
Maintenance and Operations, etc.						
	Maintenance, Operations, Safety, Enhancements, Railroad, Recreational Trails			L010, L050, LU10, LU20, LU 30, LS 20, LS 30, L220, L230, L240, LS40, LS 50, LZ 20, L940	All	\$40,517,000
Total						\$244,286,760





Table 29: Tier 1 (2011 to 2014) Program of Projects – South Carolina

Rank	Score	Project Name	From	To	Description	Phase	Cost Estimate
Widening Projects							
14	68.6	Silver Bluff Road Corridor Improvements	S-1849 (Indian Creek Trail)	S-81 (Richardson's Lake Road)	Operational improvements and third lane added for turn lanes, center lane, and median, as well as signal improvements.	ROW, CST	\$4,528,000
2	87.1	Hitchcock Parkway - Phase 1	SC 302	Huntsman Drive	Widen Hitchcock Parkway (SC 118) from 2 to 4 lanes between Huntsman Drive to SC 302 (Silver Bluff Road), with full landscaped median and turn lanes as needed and multiuse path along the entire project limits.	PE, ROW	\$13,000,000
7	76.7	East Buena Vista Avenue and Atomic Road	EBV from Brookside Road to Barton Road	Atomic Road from EBV to Old Edgefield Road	Widen East Buena Vista to 2 thru lanes w/ a median and turn lanes from Brookside Ave to Barton Rd; Narrow the two lane section of Atomic from E Buena Vista to Martintown Road to two lanes, improve operations and install pavement markings for parking and bike lanes; Widen Atomic from Martintown Rd to Old Edgefield Road to 5 lanes, and improve the Atomic Road intersections at Martintown Rd. and Old Edgefield Rd.	PE, ROW, CST	\$5,250,000
9	74.4	Belvedere - Clearwater Rd (SC 126)	US 1/78 (Jefferson Davis Hwy)	I-520	Widen Belvedere/ Clearwater Rd (SC 126) from US 1/78 (Jefferson Davis Highway) to I-520 from 2 lanes to 4 lanes, with full landscaped median and turn lanes as needed.	PE, ROW	\$2,500,000
Intersection Improvements							
1	80.5	US 25 (Edgefield Road) and Walnut Lane intersection improvements			Walnut Lane will be realigned to intersect with US 25 at 90 degrees, multiple turn lanes will be added and signals will be installed.	PE, ROW, CST	\$4,600,000
Transit Capital Funds							
n/a	n/a	Transit Capital Funds			Lump	All	\$4,914,527
Transit Operating Funds							
n/a	n/a	Transit Operating Funds			Lump	All	\$2,671,382
						Total	\$37,463,909





10.2 Tier 2 Funding Priorities

The mid-range priority projects consist of those projects contained in Tier 2, which cover the years 2015 to 2024. **Tables 30 to 31** identify the Tier 2 financially constrained projects in Georgia and South Carolina.

Table 30: Tier 2 (2015 to 2024) Program of Projects – Georgia

GDOT PI#	Project Name	From	To	Description	Phase	2010 Dollars	Year of Expenditure Dollars
Widening Projects							
262080	Washington Road	Cumberland Drive	SR 383 (Belair Road)	Widen to 4 through lanes with turn lanes as needed.(with one bridge widening SW of Cumberland)	ROW	\$3,559,601	\$4,413,905
220680	SR 4 (15th ST)	Milledgeville Road	Government Street	Widen to 4 and 6 through lanes with turn lanes as needed. (7 signals)	ROW	\$6,624,499	\$8,214,379
231440	Columbia Road (SR 232)	CR 221 (Old Belair Road)	SR 383 (Belair Road)	Widen to 4 through lanes.	ROW, CST	\$10,452,073	\$12,960,571
250600	SR 1017 (Flowing Wells RD)	I-20	SR 104 (Washington RD)	Widen to 4 through lanes with turn lanes as needed. (with 3 intersection improvement projects)	CST	\$10,506,000	\$13,027,440
262080	Washington RD	Cumberland DR	SR 383 (Belair RD)	Widen to 4 through lanes with turn lanes as needed.(with one bridge widening SW of Cumberland)	UT, CST	\$35,441,714	\$43,947,725
250510	CR 1501 (Wrightsboro Road)	Jimmie Dyess Parkway	I-520	Widen to 4 through lanes with turn lanes as needed.	CST	\$17,596,071	\$21,819,128
250470	Old Petersburg Road/Old Evans Road	Baston Road	SR 104 (Washington Road)	Widen to 4 through lanes with turn lanes as needed.	CST	\$28,389,000	\$35,202,360
220680	SR 4 (15th Street)	Milledgeville Road	Government Street	Widen to 4 and 6 through lanes with turn lanes as needed. (7 signals)	CST	\$9,525,000	\$11,811,000
245320	CR 65 (Windsor Springs Road)	SR 88	Willis Forman Road	Widen to 4 through lanes with turn lanes as needed. (1 bridge and 3 signals added)	CST	\$18,543,483	\$22,993,919
8350	SR 388 (Lewiston Road)	SR 232 (Columbia RD)	I-20	Widen to 4 through lanes.	PE, ROW, UTIL, CST	\$41,015,292	\$50,858,962
8351	SR 388 (Horizon South Parkway)	CR 571 (Wrightsboro Road)	I-20	Widen to 4 through lanes	All	\$25,180,719	\$31,224,092
221805	SR 104 (Washington Road)	MP 8.95 South Of CR 515	MP 11.95 South Of CR 80	Widen to 4 through lanes with turn lanes as needed. (1 bridge added)	ROW, UTIL, CST	\$37,949,527	\$47,057,413
8356	US 1 (Dean's Bridge Road)	Meadowbrook Drive	Tobacco Road	Widen to 6 through lanes.	All	\$82,622,373	\$102,451,743
8348	Wrightsboro Road	SR 388 (Horizon South Parkway)	SR 383 (Jimmie Dyess Parkway)	Widen to 4 through lanes. (2 signals added)	All	\$42,611,166	\$52,837,846
8349	SR 232 (Columbia RD)	Chamblin Road (CR 238)	Old Belair Road (CR 221)	Widen to 4 through lanes.	All	\$45,205,918	\$56,055,338
8352	Stevens Creek Road	Evans To Locks Road	Claussen Road	Widen to 4 through lanes.	All	\$35,052,000	\$43,464,481
8346	SR 28 (Fury's Ferry RD)	South Carolina State Line	Evans To Locks RD	Widen to 4 through lanes.	ROW, UT, CST	\$48,082,586	\$59,622,407
8347	SR 388 (Old Wrightboro Road)	SR 223 (Robinson Avenue)	CR 571 (Wrightsboro Road)	Widen to 4 through lanes.	All	\$12,020,984	\$14,906,020
221790	US 78/278 (Gordon Highway)	SR 223	Existing 4 Lane Section in Harlem	Widen to 4 through lanes with turn lanes as needed. (1 bridge and 2 signals added)	ROW, CST	\$46,917,239	\$58,177,376
8353	Bobby Jones Expressway (SR 232)	North Of Scott Nixon Memorial Blvd (CR 579)	SR 104 (Washington RD)	Widen to 6 through lanes.	All	\$27,852,366	\$34,536,934
	Riverwatch Parkway Interchange Improvements	Riverwatch Parkway	I-20	Provide additional turn lanes, ramp widening and signal improvements to improve traffic flow in the vicinity of I-20	CST	\$3,000,000	\$3,720,000





Table 30: Tier 2 (2015 to 2024) Program of Projects – Georgia (Continued)

GDOT PI#	Project Name	From	To	Description	Phase	2010 Dollars	Year of Expenditure Dollars
Park and Ride Facility Projects							
	I-20 Park And Ride			Park and ride lot at Exit 190 (Lewiston Road/Horizon South Pkwy) in SW or NE Quad	All	\$3,300,694	\$4,092,861
	US 78 (Gordon HWY) Park And Ride			Park and ride lot at Jimmie Dyess Pkwy (SE or SW quadrant)	All	\$3,319,559	\$4,116,253
	US 1 (Deans Bridge RD) Southwest Park And Ride			Park and ride lot at Tobacco Road (SE Quad)	All	\$2,230,539	\$2,765,868
	US 25 (Peach Orchard RD) Southwest Park And Ride			Park and ride lot at Tobacco Road (NW Quad)	All	\$2,230,539	\$2,765,868
Median Work							
232020	Riverwatch Parkway	I-20	Jones Street	Construct median barrier	All	\$17,246,472	\$21,385,626
222710	SR 10/US 78 (Gordon HWY)	SR 121/US 25 (Peach Orchard Rd.)	Walton Way	Construct median barrier	CST	\$7,826,910	\$9,705,368
Intersection and Safety Improvements							
	SR 4 at Morgan Road Safety Improvements	SR 4	Morgan Road	Improve traffic signal timing	All	\$2,750	\$3,410
	SR 4 at Meadowbrook Road Safety Improvements	SR 4	Meadowbrook Road	Improve traffic signal timing to account for grade and optimizing capacity	All	\$2,750	\$3,410
	SR 4 at Georgetown Road Safety Improvements	SR 4	Georgetown Road	Construct longer storage bay, construct right-turn lane, improve turning radii	All	\$634,170	\$786,371
	SR 4 at Walton Way Safety Improvements	SR 4	Walton Way	Widen Walton Way lane widths	All	\$1,352,656	\$1,677,293
	SR 56 at Dixon Airline Road Safety Improvements	SR 56 (Mike Padgett HWY)	Dixon Airline Road	Deceleration lanes, widen lane widths and bridge, improve signage, evaluate need for signalized traffic control	All	\$4,766,996	\$5,911,074
	SR 56 at Marvin Griffin Road Safety Improvements	SR 56 (Mike Padgett HWY)	Marvin Griffin Road	Widen turning radii, improve road signage, improve detector gaps, widen throat	All	\$504,574	\$625,671
	SR 56 at Apple Valley Drive Safety Improvements	SR 56 (Mike Padgett HWY)	Apple Valley Drive	Decrease concrete island or increase turning radii, increase throat, construct new access, add street lighting	All	\$348,774	\$432,479
	SR 56 at Old Waynesboro Road Safety Improvements	SR 56 (Mike Padgett HWY)	Old Waynesboro Road	Widen lane widths, lower speed limit	All	\$3,049,181	\$3,780,985
	Old Waynesboro RD	SR 56 (Mike Padgett HWY)	Hephzibah-McBean RD	Turn lanes. (1 signal added)	All	\$5,279,089	\$6,546,071
9916	SR 88 at CR 58 Bath Edie Road			Construct Roundabout	PE, CST	\$1,000,000	\$1,240,000
Signal Improvements							
7360	SR 121 at 4 Locations	SR 233, SR 388, CR 1503		Signal upgrades	UTIL, CST	\$861,547	\$1,068,318
Operational Improvements							
8439	SR 28	at CR 475 (Laney Walker Blvd / Riverfront Drive		Operational Improvements	CST	\$461,000	\$571,640
Railroad Crossing Improvements							
	NS Doug Barnard Parkway – Rail Crossing Safety Improvements			Correct hump, move pavement markings	All	\$27,000	\$33,480
	CSX at Broad Street			Improve signal timing plan	All	\$2,750	\$3,410
	CSX at 15 th Street – Rail Xing Safety Improvements			Install W10-2 and W10-1 and develop traffic signal plan	All	\$5,750	\$7,130
	CSX at Walton Way/12 th Street – Rail Crossing Safety Improvements			Redo railroad pre-emption sequence, Improve signage, install W10-1 and pavement markings	All	\$10,500	\$13,020
Bicycle and Pedestrian Improvements							
	Bike/Ped Bridge over Savannah River	SC	GA	Bike/Ped bridge adjacent to the 5th street bridge	All	\$4,397,240	\$5,452,578
8195	Augusta Canal Multi-use Trail in Richmond County (Phase IV)				CST	\$688,000	\$853,120
9126	CR 2477 (James Brown Blvd)	From CR 2723 to CD 2499	From CD 2509 to CD 2523	Streetscape - Enhancement	CST	\$812,500	\$1,007,500
9127	Augusta State University History Walk Phase IV			Bike/Ped Facility	CST	\$750,000	\$930,000
9018	Eucler Creek Trail 3	Harlem - Grovetown Road	Reynolds Farm	Bike/Ped Facility	CST	\$625,000	\$775,000
	15th Street Pedestrian Improvement Project	John C. Calhoun Expressway	15th Street CSX Overpass	Construct medians and upgrade traffic signals along 15th Street	CST	\$4,000,000	\$4,960,000
	Bicycle and Pedestrian Improvements			Lump	All	\$45,275,000	\$56,141,000





Table 30: Tier 2 (2015 to 2024) Program of Projects – Georgia (Continued)

GDOT PI#	Project Name	From	To	Description	Phase	2010 Dollars	Year of Expenditure Dollars
ATMS and ITS Projects							
227810	ATMS/Augusta Richmond County/GDOT Regional TCC			Construct Traffic Management Center	All	\$2,829,186	\$3,508,191
227805	I-20 ATMS Communications/Surveillance	SR 388 (Horizon South Parkway)	South Carolina State Line	ATMS/ITS Improvements	CST	\$19,587,857	\$24,288,943
227800	ATMS/Augusta Slo Scan/CMS/Radar			ATMS improvements	CST	\$2,588,310	\$3,209,504
Bridge Projects							
245325	CR 65 (Windsor Springs Road)	at Norfolk Southern RR in Hephzibah		Bridge Replacement	CST	\$2,607,235	\$3,232,971
210327	I-20 Bridge over Augusta Canal and Savannah River			Construct 6 lane bridge	CST	\$45,242,156	\$56,100,273
7167	SR 232 (Columbia RD)	at Walton Branch 4 miles NE of Grovetown		Bridge Replacement	All	\$15,307,998	\$18,981,918
Transit Capital Funds							
	Transit Capital Projects			Lump	All	\$27,469,994	\$34,062,793
Transit Operating Funds							
	Transit Operations			Lump	All	\$32,258,065	\$40,000,000
Maintenance and Operations, etc.							
	Maintenance, Operations, Safety, Enhancements, Railroad, Recreational Trails			L010, L050, LU10, LU20, LU 30, LS 20, LS 30, L220, L230, L240, LS40, LS 50, LZ 20, L940	All	\$41,852,150.54	\$51,896,667
Total						\$888,902,502	\$1,102,239,102





Table 31: Tier 2 (2015 to 2024) Program of Projects – South Carolina

Rank	Score	Project Name	From	To	Description	Phase	2010 Dollars	Year of Expenditure
Widening Projects								
1	88.4	Aiken-Augusta Highway (US 1)	Savannah River	I-520 (Palmetto Pkwy)	Widen Aiken-Augusta Highway (US 1) with improved median between Savannah River to I-520 (Palmetto Pkwy), including Martintown Road interchange improvements.	PE, ROW, CST	\$7,722,210	\$9,575,540
2	87.1	Hitchcock Parkway - Phase 1	SC 302	Huntsman Drive	Widen Hitchcock Parkway (SC 118) from 2 to 4 lanes between Huntsman Drive to SC 302 (Silver Bluff Road), with full landscaped median and turn lanes as needed and multiuse path along the entire project limits.	CST	\$5,000,000	\$6,200,000
5	79	Edgefield Highway (SC 19)	Hampton Avenue	S-153 Shiloh Church Road	Widen Edgefield Highway (SC 19) from 2 to 4 lanes between SC 118 (University Pkwy) and S-153 Shiloh Church Road, with full landscaped median and turn lanes as needed. Add median between University and Hampton	PE, ROW, CST	\$24,920,516	\$30,901,440
6	77.3	Five Notch Road (S-45)	US 25 Business (Georgia Avenue)	Walnut Lane	Widen Five Notch Road (S-45) from 2 to 4 lanes between US 25 Business (Georgia Avenue) and Walnut Lane, median and turn lanes as needed. Completed with the two Five Notch Road intersection improvements.	PE, ROW, CST	\$20,255,490	\$25,116,808
8	75.9	Martintown Road (SC 230)	I-20	Old Martintown Road	Widen Martintown Road (SC 230) from 2 to 4 lanes between I-20 and Old Martintown Road, with full landscaped median and turn lanes as needed and multiuse path along entire project limits.	PE, ROW	\$1,959,816	\$2,430,172
9	74.4	Belvedere - Clearwater Rd (SC 126)	US 1/78 (Jefferson Davis Hwy)	I-520	Widen Belvedere/ Clearwater Rd (SC 126) from US 1/78 (Jefferson Davis Highway) to I-520 from 2 lanes to 4 lanes, with full landscaped median and turn lanes as needed.	CST	\$8,250,000	\$10,230,000





Table 31: Tier 2 (2015 to 2024) Program of Projects – South Carolina (continued)

Rank	Score	Project Name	From	To	Description	Phase	2010 Dollars	Year of Expenditure Dollars
Intersection Projects								
2	80.4	Georgia/Knox Avenue (US 25) and Five Notch/Bradleyville Road (S-45)			Georgia Avenue - add turning lanes and realign. Close one curb cuts.	PE, ROW, CST	\$1,381,344	\$1,712,867
3	77	I-20 and Martintown Road (SC 230)			Reconfigure to a diamond interchange and add signals	PE, ROW, CST	\$2,000,000	\$2,480,000
5	69.9	Richland Avenue West (US 1/US 78) and University Parkway (S-2131)			Lengthen and add dual left turn lanes east bound on Richland Ave. Rewarrant signal.	PE, ROW, CST	\$654,836	\$811,997
6	69.9	Silver Bluff Road (SC 302) and Hitchcock Parkway (SC 118)			Bicycle and pedestrian crossing safety median, signal functions reassesses and add turn lanes	PE, ROW, CST	\$1,191,505	\$1,477,466
8	67.1	Five Notch Road (SC 45) and Pisgah Road			Realign intersection and add turn lanes. Completed with Five Notch Road widening project.	PE, ROW	\$547,728	\$679,183
9	62.60	West Martintown Rd and Knobcone Ave intersection improvements			Improve the intersection of West Martintown Road with Knobcone Ave with additional turn lanes, traffic signal and minor realignment of Old Plantation Road to intersect opposite Knobcone Ave.	PE, ROW	880,000.00	1,091,200.00
10	57.5	Five Notch Road (SC 45) and Walnut Lane			Realign intersection to a T intersection. Completed with Five Notch Road widening project.	PE, ROW	\$1,344,709	\$1,667,439
Park and Ride Facilities								
n/a	n/a	I-20 and US 1 (Columbia Highway) Park and Ride in Aiken County (Exit 22)			Construct Park and Ride facility	PE, ROW, CST	\$1,000,000	\$1,240,000
Transit Capital Funds								
n/a	n/a	Transit Capital Funds			Lump	All	\$9,908,320	\$12,286,317
Transit Operating Funds								
n/a	n/a	Transit Operating Funds			Lump	All	\$5,385,850	\$6,678,455
Bicycle and Pedestrian Projects								
		Bicycle and Pedestrian Projects			Lump	All	\$2,309,124	\$2,863,314
Total							\$94,711,449	\$117,442,197





10.3 Tier 3 Funding Priorities

The long-range priority projects consist of those projects contained in Tier 3, which cover the years 2025 to 2035. **Tables 32 and 33** identify the Tier 3 financially constrained projects.

Table 32: Tier 3 (2025 to 2035) Program of Projects – Georgia

GDOT PI#	Project Name	From	To	Description	Phase	2010 Dollars	Year of Expenditure Dollars
Widening Projects							
	I-520 Southbound	Wrightsboro RD	US 78 (Gordon HWY)	Add auxiliary lane.	All	\$10,679,877	\$20,184,968
8354	US 78/SR 10 (Gordon Highway)	Robinson Avenue	Fort Gordon Gate 1	Widen to 6 through lanes.	All	\$52,479,115	\$99,185,527
8345	I-20	McDuffie County Line	SR 383 (Belair Road)	Widen to 6 through lanes.	All	\$401,661,615	\$759,140,452
8355	US 25/SR 121 (Peach Orchard Road)	Tobacco Road	Browns Road	Widen to 6 through lanes.	All	\$63,881,099	\$120,735,277
	Willis Foreman RD	US 1 (Deans Bridge RD)	US 25 (Peach Orchard RD)	Widen to 4 through lanes.(1 bridge and 3 signals added)	All	\$89,517,193	\$169,187,494
	Bobby Jones Expressway (I-520)	Deans Bridge Rd. (US 1, SR 4)	Mike Padgett Hwy (SR 56)	Widen from 4 to 6 lanes	All	\$10,130,331	\$19,146,326
245200	North Belair Road	SR 104 (Washington Road)	SR 28 (Fury's Ferry Road)	Widen to 4 lanes, with turn lanes as needed	All	\$11,888,857	\$22,469,940
Bridge Improvements							
245205	North Belair Road	at CSX Railroad		Widen bridge to 4 lanes over the railroad	All	\$967,331	\$1,828,256
Bicycle and Pedestrian Improvements							
	Bicycle and Pedestrian Improvements			Lump	All	\$10,289,000	\$19,446,210
Transit Capital Funds							
	Transit Capital Projects			Lump	All	\$19,824,905.69	\$37,469,072
Transit Operating Funds							
	Transit Operations			Lump	All	\$23,280,423.28	\$44,000,000
Maintenance and Operations, etc.							
	Maintenance, Operations, Safety, Enhancements, Railroad, Recreational Trails			L010, L050, LU10, LU20, LU 30, LS 20, LS 30, L220, L230, L240, LS40, LS 50, LZ 20, L940	All	\$30,204,409.17	\$57,086,333
Total						\$724,804,156	\$1,369,879,856





Table 33: Tier 3 (2025 to 2035) Program of Projects – South Carolina

Rank	Score	Project Name	From	To	Description	Phase	2010 Dollars	Year of Expenditure Dollars
Widening Projects								
2	87.1	Hitchcock Parkway - Phase 2	Huntsman Drive	US 1	Widen Hitchcock Parkway (SC 118) from 2 to 4 lanes between Huntsman Drive to SC 302 (Silver Bluff Road), with full landscaped median and turn lanes as needed and multiuse path along the entire project limits.	CST	\$11,700,000	\$22,113,000
8	75.9	Martintown Road (SC 230)	I-20	Old Martintown Road	Widen Martintown Road (SC 230) from 2 to 4 lanes between I-20 and Old Martintown Road, with full landscaped median and turn lanes as needed and multiuse path along entire project limits.	CST	\$2,939,723	\$5,556,076
10	73.3	Rudy Mason Parkway (SC 118)	S-912 (North of Willow Run Rd)	S-783 (North of Old Wagener Road)	Road widening to two lanes to four lanes, with full landscaped median and turn lanes as needed.	PE, ROW, CST	\$6,000,000	\$11,340,000
11	71.6	Atomic Road (SC 125)	Old Edgefield Road (S-197)	Jefferson Davis Highway (US 1)	Widen to 4 through lanes, with full landscaped median and turn lanes as needed. Project include multiuse path along portions of the study limits.	PE, ROW, CST	\$18,987,169	\$35,885,749
19	28.9	East Buena Vista Ave	Barton Road	Martintown Road	Widen to 2 through lanes, with full landscaped median and turn lanes as needed.	PE, ROW, CST	\$1,400,000	\$2,646,000
Intersection Projects								
4	71.1	Knox Avenue (US 25) and Martintown Road (SC 230)			Realign intersection and pedestrian improvements	PE, ROW, CST	\$1,274,414	\$2,408,642
7	67.9	York Street/Columbia Hwy (US 1) and Rutland Ave and Aldrich (SC 118)			The two intersections are separated by 440 ft. Operational and signal improvements.	PE, ROW, CST	\$358,400	\$677,376
8	67.1	Five Notch Road (SC 45) and Pisgah Road			Realign intersection and add turn lanes. Completed with Five Notch Road widening project.	CST	\$821,592	\$1,552,809
9	62.6	West Martintown Rd and Knobcone Ave intersection improvements			Improve the intersection of West Martintown Road with Knobcone Ave with additional turn lanes, traffic signal and minor realignment of Old Plantation Road to intersect opposite Knobcone Ave.	CST	\$1,320,000	\$2,494,800
10	57.5	Five Notch Road (SC 45) and Walnut Lane			Realign intersection to a T intersection. Completed with Five Notch Road widening project.	CST	\$2,017,064	\$3,812,251
11	54.4	Pine Log Road (SC 302) and Collier Street			Realign and add double left turn lanes from westbound Pine Log to Collier and adjust signals.	PE, ROW, CST	\$641,745	\$1,212,898
Transit Capital Funds								
n/a	n/a	Transit Capital Funds			Lump	All	\$7,150,767	\$13,514,949
Transit Operating Funds								
n/a	n/a	Transit Operating Funds			Lump	All	\$3,886,931	\$7,346,300
Bicycle and Pedestrian Projects								
		Bicycle and Pedestrian Projects			Lump	All	\$7,500,000	\$14,175,000
Total							\$65,997,805	\$124,735,851





10.4 Other Local Projects

Augusta-Richmond County, Columbia County, and Aiken County maintain Capital Improvement Programs to meet their local infrastructure related needs. While much of their programs relate to major roadway rehabilitation and reconstruct projects, Columbia and Aiken counties will be seeking to expand the capacity of existing roads or constructing new roadways. These projects that expand the local roadway system will be funded by the counties, but they will certainly support the ARTS transportation system and the projects are listed in Tier 1, Tier 2, or Tier 3.

10.5 High Priority Unfunded Priorities

The ARTS MPO has determined that the projects listed in **Tables 34** and **35** are a high priority. However, current funding forecasts leave these projects without an identified funding source, and thus these projects are not contained in the financially constrained LRTP. Should additional funding be made available through either federal, state, local, or other sources, these projects will be developed and advanced within the guidelines of the MPO planning process. Each project is important to the ARTS area in terms of addressing congestion, economic development, safety, and consistency with the preferred development scenario. Projects are listed in order of priority.

Table 34: Unfunded High Priority Projects – Georgia

GDOT PI#	Project Name	From	To	Description	Phase	2010 Dollars	Year of Expenditure Dollars
Widening Projects							
	2+ Concurrent Flow HOV on I-20	Louisville RD	Riverwatch PKWY	Construct 1 HOV lane in each direction. (1 bridge added)	All	\$95,863,061	\$181,181,185
Total						\$95,863,061	\$172,553,510





Table 35: Unfunded High Priority Projects – South Carolina

Rank	Score	Project Name	From	To	Description	Phase	2010 Dollars	Year of Expenditure Dollars
Widening Projects								
3	85.6	I-20	Savannah River	US 25 (Edgefield Road)	Widen to 6 lanes	PE, ROW, CST	\$12,945,496	\$24,466,987
4	80.5	I-20	US 25 (Edgefield Road)	Bettis Academy Road	Widen to 6 lanes	PE, ROW, CST	\$22,574,684	\$42,666,153
12	70.6	Robert M. Bell (SC 118)/University Parkway (SC 118)	US 1/US 78 (Jefferson Davis Highway)	SC 19 (Edgefield Highway)	Widen to four lanes, improve intersections, with full landscaped median and turn lanes as needed and multiuse path.	PE, ROW, CST	\$35,250,000	\$66,622,500
13	69.4	Ascauga Lake Road (S-33)	US 25	SC 191 (Canal Street)	Widen Ascauga Lake Road (S-33) between US 25 and SC 191 Canal Street, with full landscaped median and turn lanes as needed.	PE, ROW, CST	\$56,755,000	\$107,266,950
15	68.3	Wagener Road (SC 4/302)	S-218 (North of Redd's Branch Road)	S-260 (Wright's Mill Road)	Widen Wagener Road (SC 4/302) from 2 to 4 lanes between S-218 (North of Redd's Branch Road) and S-260 (Wright's Mill Road), with full landscaped median and turn lanes as needed.	PE, ROW, CST	\$7,802,516	\$14,746,755
16	65.3	Charleston Highway (US 78)	SC 302 (Pine Log Road)	S-507 (Old Dibble Road)	Widen Charleston Highway (US 78) between SC 302 (Pine Log Road) and S-507 (Old Dibble Road), with full landscaped median and turn lanes as needed.	PE, ROW, CST	\$4,335,124	\$8,193,384
17	63	Pine Log Road (S-65)	US 278 (Williston Road)	S-66 (Huber Clay Road)	Widen Pine Log Road from 2 to 4 lanes between US 278 (Williston Road) and S-66 (Huber Clay Road), with full landscaped median and turn lanes as needed.	PE, ROW, CST	\$18,205,871	\$34,409,096
18	41	Celeste Avenue (S-467)	US 25 Business (Georgia Avenue)	S-45 (Five Notch Road)	Operational improvements along Celeste Avenue (S-467) between US 25 Business (Georgia Avenue) and S-45 (Five Notch Road)	PE, ROW, CST	\$1,225,776	\$2,316,717
		Dougherty Road	Whiskey Road (SC 19)	Silver Bluff (SC 302)	Add flush median (3rd lane) and double left turn lanes onto Whiskey Road with traffic signal.	PE, ROW, CST	\$5,000,000	\$9,450,000
Railroad Crossing Improvements								
		NS at Park Avenue/Williamsburg Lane/Staubes Lane – Rail Crossing Safety Improvements			Upgrade pavement markings, signs and pre-emption, install street lighting, Construct active railroad warning	All	\$20,900	\$25,916





Table 35: Unfunded High Priority Projects – South Carolina (continued)

Rank	Score	Project Name	From	To	Description	Phase	2010 Dollars	Year of Expenditure Dollars
New Facility Projects								
1	85.5	I-20 Frontage Collector	Five Notch Road	US 25 (Edgefield Road)	New location from Five Notch Road to US 25 (Edgefield Road), south of I-20. Widen to 5 lanes from US 25 1.2 miles and 3 lanes from that point to Five Notch Road for .4 miles	PE, ROW, CST	\$6,987,429	\$13,206,241
2	68.2	Bergen-Five Notch Collector	Bergen Road	Gregory Lake Road	New location from Bergen Road to Gregory Lake Road	PE, ROW, CST	\$5,822,858	\$11,005,202
4	59.1	Whiskey/Centennial Parkway Extension	Extend Centennial Parkway	East Gate Drive at Athol	New Road parallel to whiskey Road from Centennial parkway to East Gate Drive extension at Athol, with full landscaped median and turn lanes as needed.	PE, ROW, CST	\$5,625,000	\$10,631,250
5	58.2	East Gate extension from Whiskey Road to Athol	East Gate Drive from Whiskey Road	Athol	New 2-lane roadway connecting East Gate Drive to Athol, with full landscaped median and turn lanes as needed.	PE, ROW, CST	\$400,000	\$756,000
6	54.9	Extend East Gate to Powerhouse Road	East Gate Drive (new extended portion)	Powderhouse Road	Construct a new 2 lane facility, with full landscaped median and turn lanes as needed.	PE, ROW, CST	\$10,950,000	\$20,695,500
Bicycle and Pedestrian Projects								
		Bicycle and Pedestrian Projects			Lump	All	\$10,000,000	\$18,900,000
Total							\$203,900,654	\$385,372,236



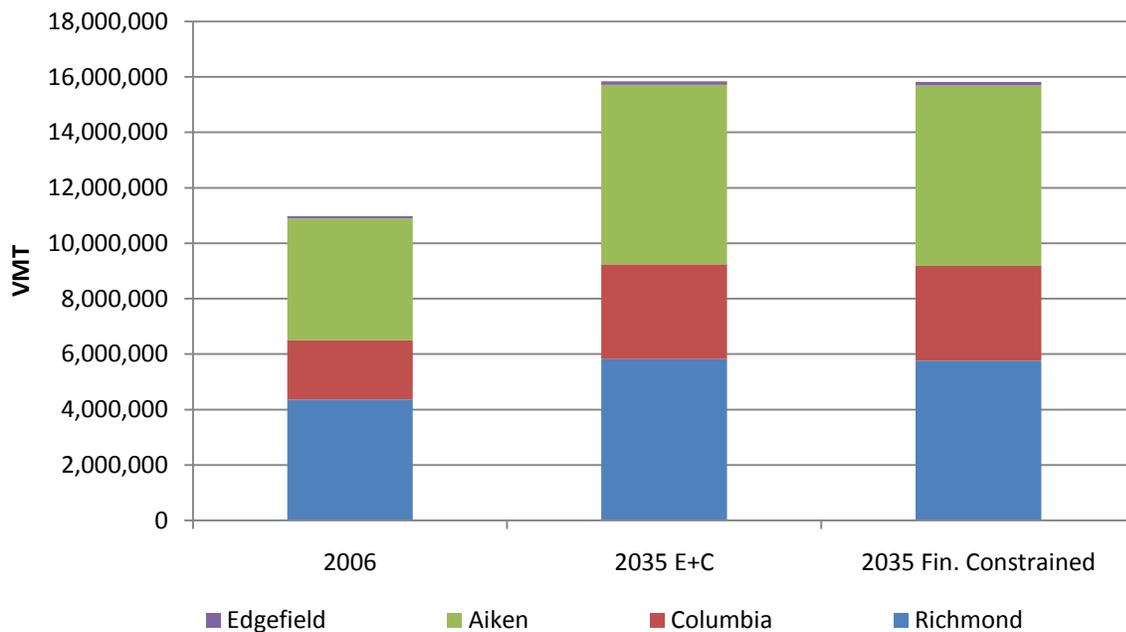


10.6 Future Year Build Conditions

The financially constrained multimodal transportation projects selected for inclusion in the ARTS 2035 LRTP were carefully selected and prioritized. The list of projects outlined in this chapter was developed through an iterative process, which included extensive public participation throughout the ARTS area as well as technical analysis. The following provides a comparison of the financially constrained projects to base year (2006) and the 2035 E+C networks.

Figure 81 shows the VMT by county in the base year (2006), the 2035 E+C, and the financially constrained networks. Based on the financially constrained model results, the capacity adding projects included in the ARTS 2035 LRTP reduce overall VMT by 0.2 percent. VMT in Augusta-Richmond County is reduced by 1.0 percent; Columbia County VMT increased by 0.03 percent; Aiken County VMT is increased by 0.5 percent.

Figure 81: Daily VMT and County Comparisons: Base Year vs. 2035 E+C vs. 2035 Financially Constrained



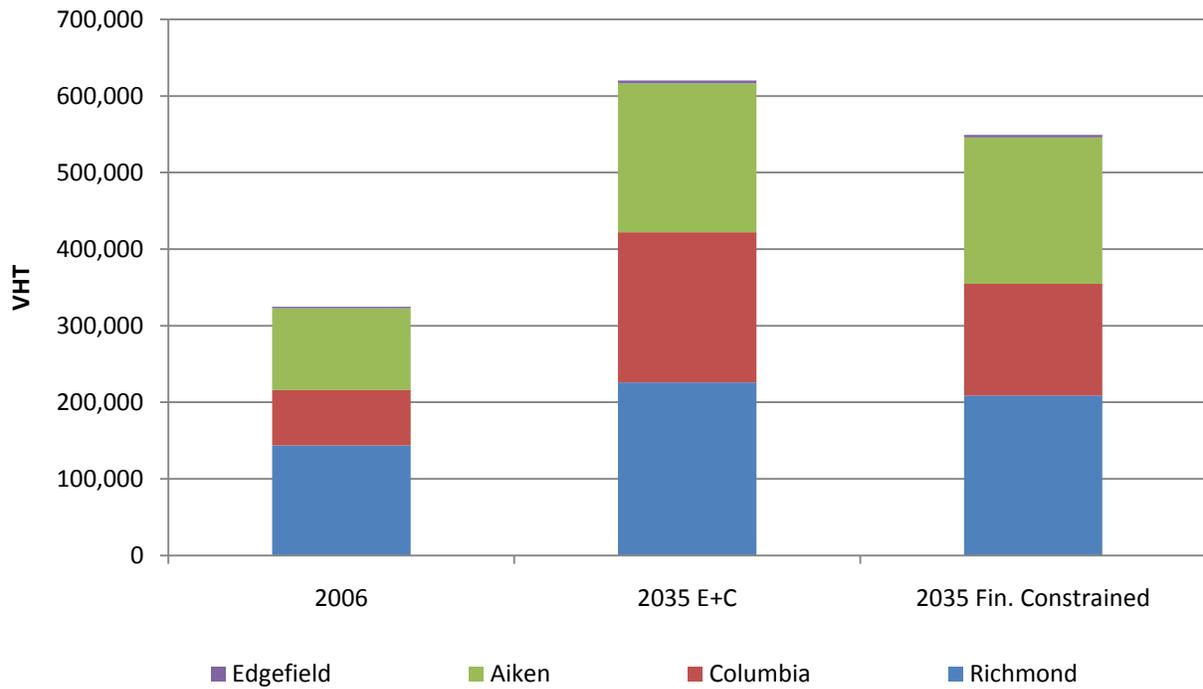
Source: ARTS Travel Demand Model.





Figure 82 shows the VMT by each county in the base year (2006), the 2035 E+C, and the financially constrained networks. Based on the financially constrained model results, the capacity adding projects included in the ARTS 2035 LRTP reduce overall VHT by 11.5 percent, which is quite an improvement over the E+C network. VHT in Augusta-Richmond County VHT is reduced by 7.6 percent; Columbia County VHT is reduced by 25.6 percent; Aiken County VHT is reduced by 1.8 percent.

Figure 82: Daily VHT and County Comparisons: Base Year vs. 2035 E+C vs. 2035 Financially Constrained



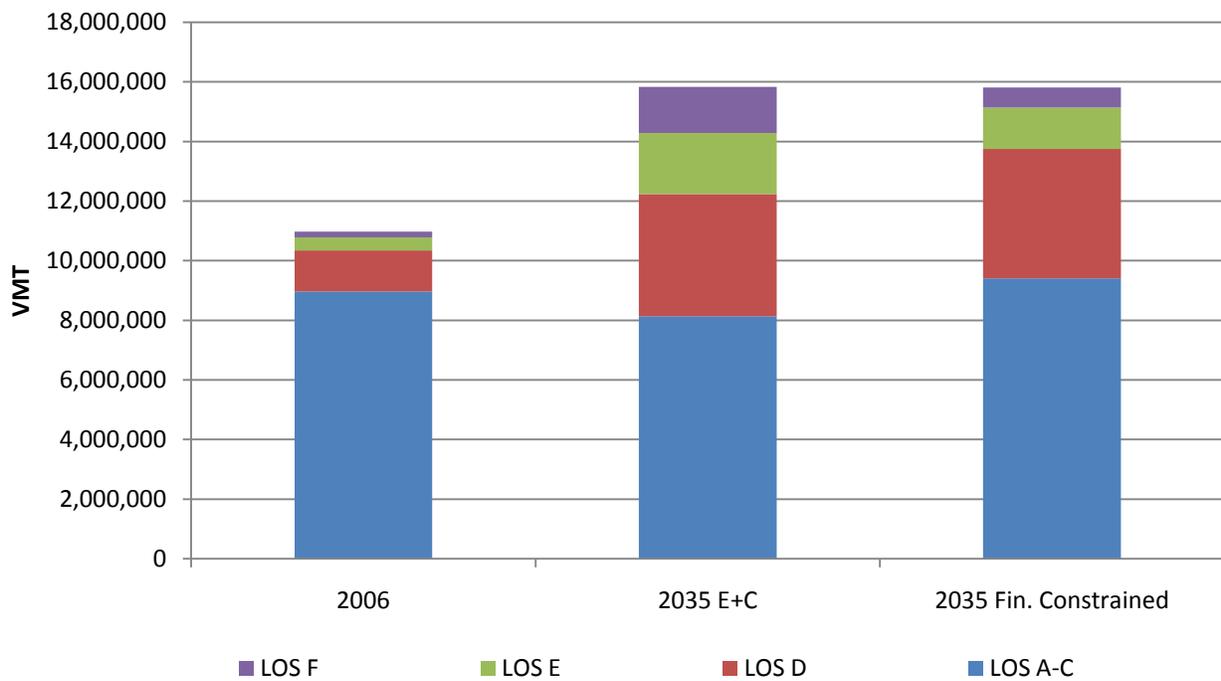
Source: ARTS Travel Demand Model.





Figure 83 shows the total daily VMT by level of service in the base year (2006), the 2035 E+C, and the financially constrained networks. Comparing the LOS by VMT between the 2035 E+C network and the financially constrained network provides information on how the projects are impacting congestion throughout the ARTS area. Based on this analysis, the capacity adding projects included in the ARTS 2035 LRTP increased LOS D by 15.6 percent, however it reduced LOS E by 32.3 percent, LOS F by 56.6 percent and improve LOS A, B, and C by 15.6 percent. Overall, the capacity adding projects in the financially constrained ARTS 2035 LRTP will improve travel operations throughout the region.

Figure 83: Daily VMT and Level of Service Comparisons: Base Year vs. 2035 E+C vs. 2035 Financially Constrained



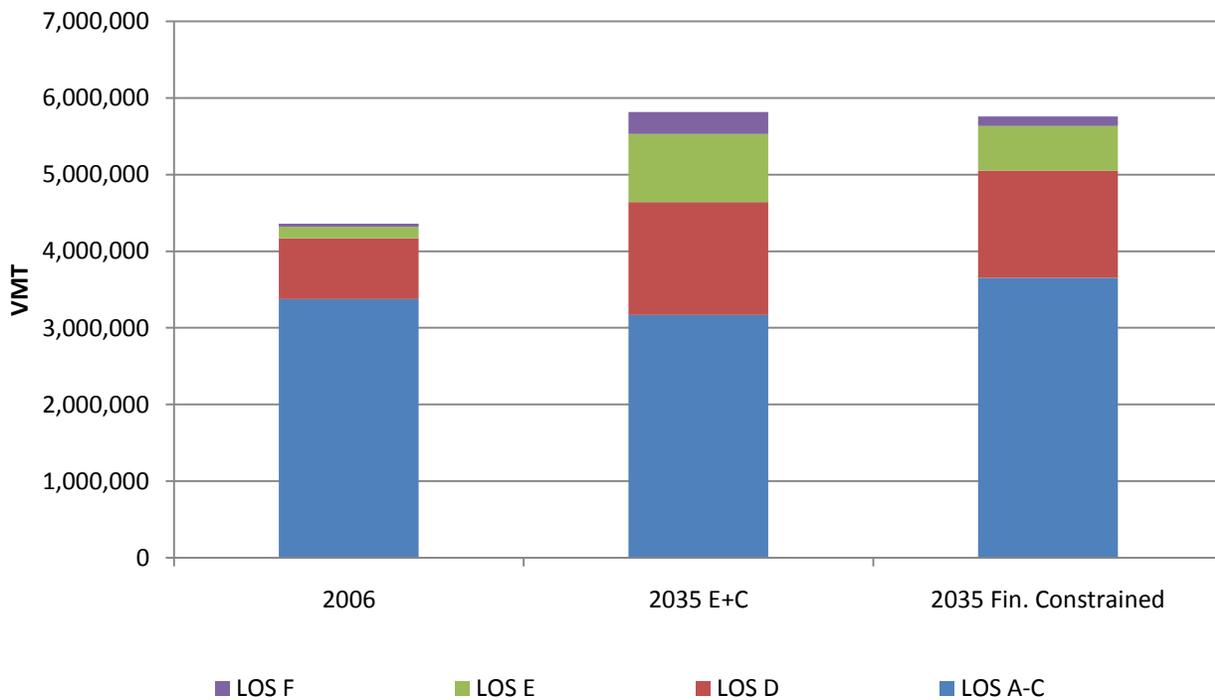
Source: ARTS Travel Demand Model.





Figure 84 shows the total daily VMT by level of service for Augusta-Richmond County in the base year (2006), the 2035 E+C, and the financially constrained networks. Comparing the 2035 E+C network to the financially constrained network, the capacity adding projects included in the in Augusta-Richmond County reduce LOS D by 5.2 percent, reduce LOS E by 34.3 percent, reduce LOS F by 56.8 percent and improve LOS A, B, and C by 15.3 percent. Overall, the capacity adding projects improve traffic operations in Augusta-Richmond County.

Figure 84: Augusta-Richmond County Daily VMT and Level of Service Comparisons: Base Year vs. 2035 E+C vs. 2035 Financially Constrained



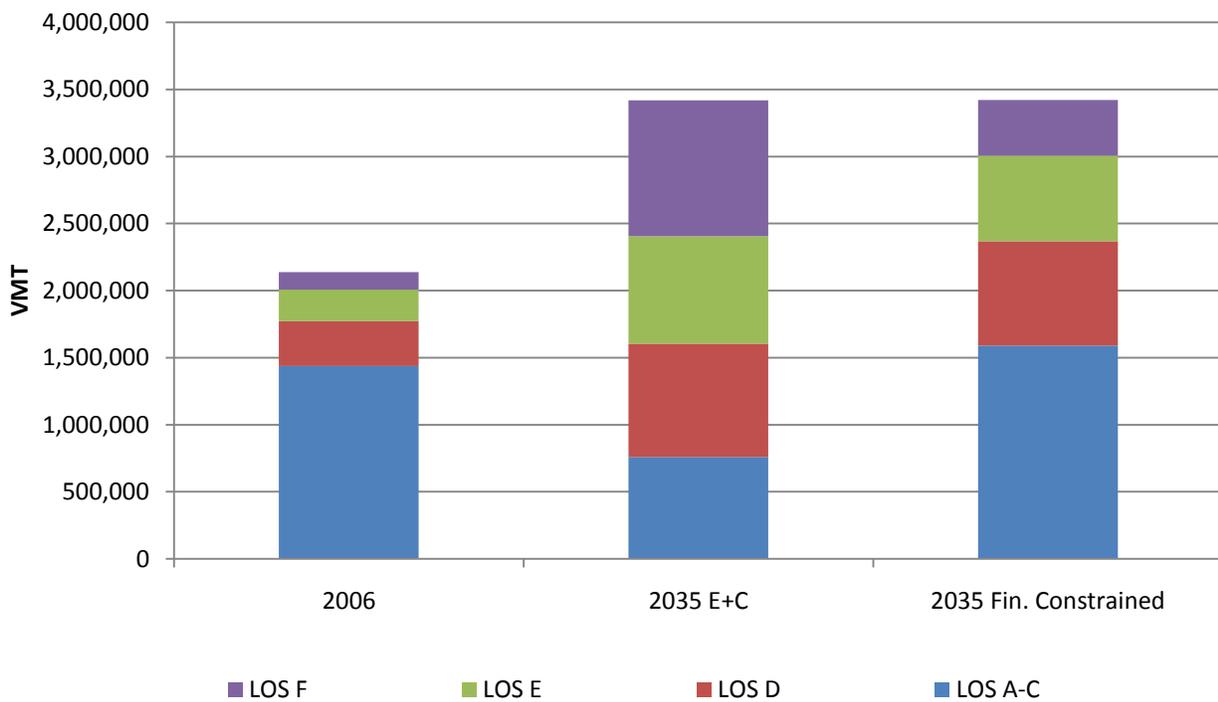
Source: ARTS Travel Demand Model.





Figure 85 shows the total daily VMT by level of service for Columbia County in the base year (2006), the 2035 E+C, and the financially constrained networks. Comparing the 2035 E+C network to the financially constrained network, the capacity adding projects included in the in Columbia County reduce LOS D by 7.8 percent, reduce LOS E by 20.6 percent, reduce LOS F by 59.1 percent and improve LOS A, B, and C by 109.5 percent. Overall, the capacity adding projects significantly improve traffic operations in Columbia County.

Figure 85: Columbia County Daily VMT and Level of Service Comparisons: Base Year vs. 2035 E+C vs. 2035 Financially Constrained



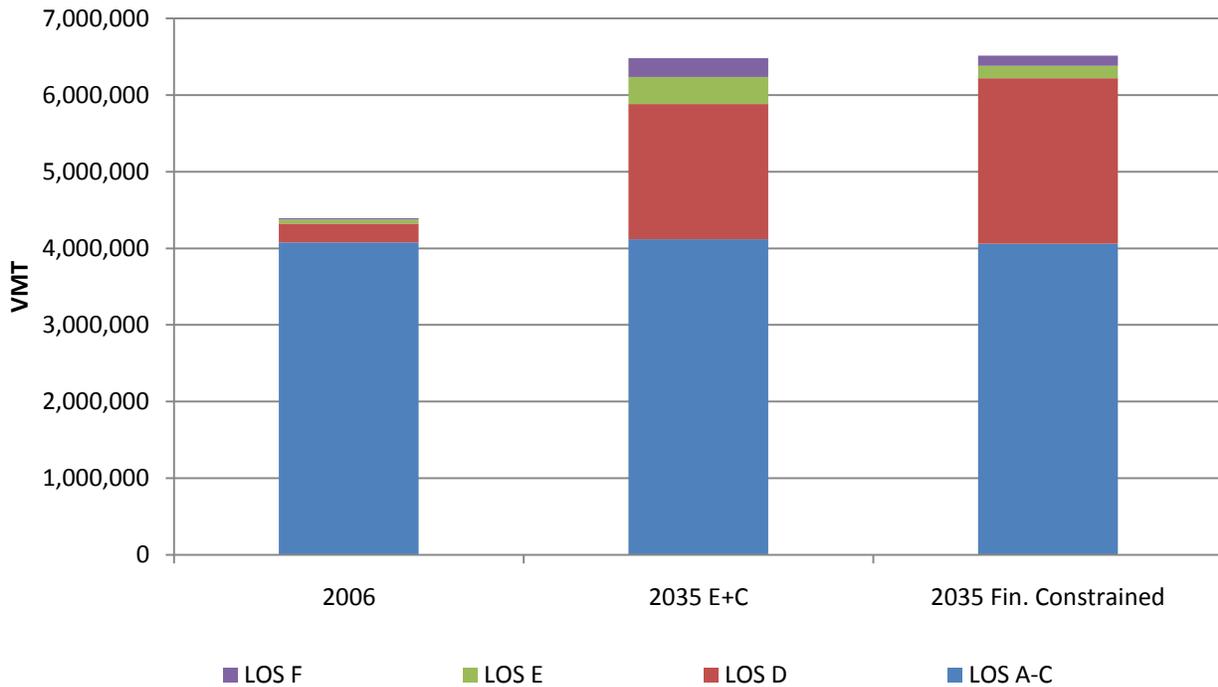
Source: ARTS Travel Demand Model.





Figure 86 shows the total daily VMT by level of service for Aiken County in the base year (2006), the 2035 E+C, and the financially constrained networks. Comparing the 2035 E+C network to the financially constrained network, the capacity adding projects included in the in Aiken County increase LOS D by 22.7 percent, reduce LOS E by 55.1 percent, reduce LOS F by 45.2 percent and improve LOS A, B, and C by 1.5 percent. Overall, the capacity adding projects improve traffic operations in Aiken County.

Figure 86: Aiken County Daily VMT and Level of Service Comparisons: Base Year vs. 2035 E+C vs. 2035 Financially Constrained



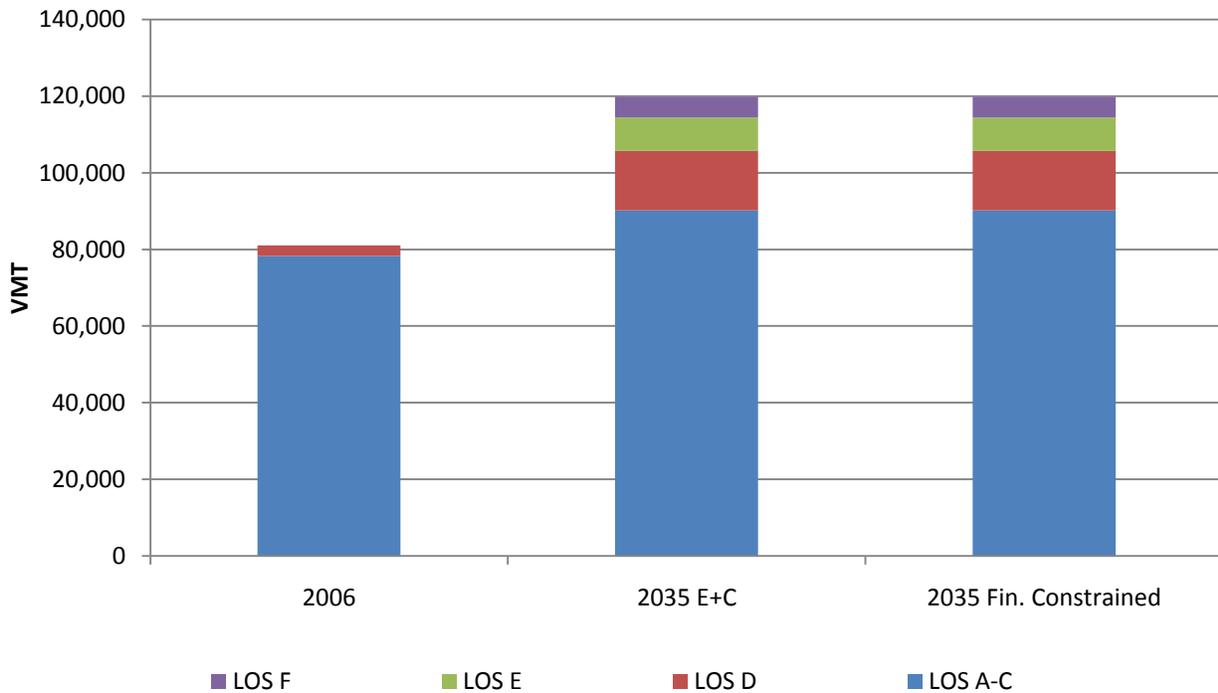
Source: ARTS Travel Demand Model.





Figure 87 shows the total daily VMT by level of service for Edgefield County in the base year (2006), the 2035 E+C, and the financially constrained networks. Since there is only a small capacity adding project located in Edgefield County (Martintown Road/SC 230), the VMT by LOS did not change from the 2035 E+C network.

Figure 87: Edgefield County Daily VMT and Level of Service Comparisons: Base Year vs. 2035 E+C vs. 2035 Financially Constrained

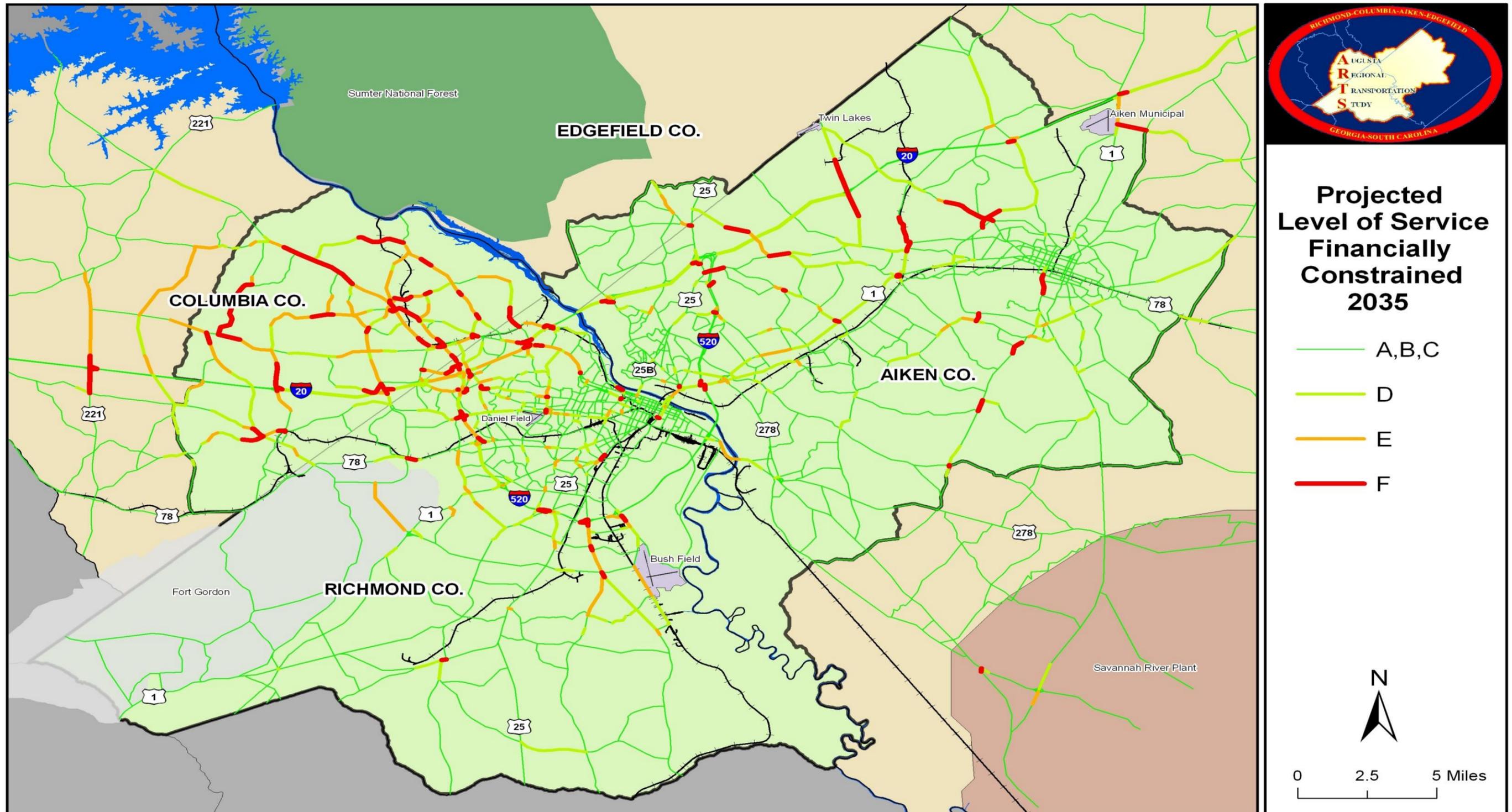


Source: ARTS Travel Demand Model.

Figure 88 shows the level of service on the ARTS highway system, based in the financially constrained program of projects.



Figure 88: 2035 Financially Constrained Level-of-Service





11. Environmental Mitigation

SAFETEA-LU requires that “long-range transportation plans include a discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan.” In addition, SAFETEA-LU requires that potential environmental mitigation activities be developed in consultation with federal, state, and tribal wildlife, land management, and regulatory agencies. The following resource agencies are part of the on-going ARTS MPO consultation process:

- South Carolina Department of Health and Environmental Control (DHEC).
- DHEC, Office of Environmental Quality Control Bureau of Air Quality.
- DHEC, Office of Environmental Quality Control Bureau of Water.
- DHEC, Office of Environmental Quality Control Office of Ocean and Coastal Resource Management.
- DHEC, Office of Environmental Quality Control Bureau of Land and Waste Management.
- South Carolina Department of Natural Resources.
- South Carolina Department of Archives and History.
- South Carolina Department of Transportation.
- South Carolina Department of Parks, Recreation and Tourism.
- South Carolina Department of Commerce.
- South Carolina Forestry Commission.
- South Carolina Jobs - Economic Development Authority.
- South Carolina State Ports Authority.
- South Carolina State Housing Finance and Development Authority.
- Chamber of Commerce - North Augusta.
- Greater Aiken Chamber of Commerce.
- Edgefield County Chamber of Commerce.
- Georgia Department of Natural Resources Environmental Protection Division.
- Georgia Department of Transportation.
- Georgia Department of Transportation Air Quality Branch.
- Georgia Department of Office of Intermodal Programs.
- Georgia Government.
- Georgia Department of Natural Resources, Historic Preservation Division.
- Georgia Forestry Commission.
- Walton Options for Independent Living.
- Savannah Riverkeepers.





- CSRA Land Trust.
- Briar Creek Soil and Water.
- Sierra Club-The Savannah River Group.
- Historic Augusta.
- CSRA Regional Commission.
- Augusta Metro Chamber of Commerce.
- Chamber of Commerce-Columbia County.
- Destination 20/20 Task Force.
- Augusta Housing Authority.
- Senior Citizens Council on Aging.
- Easter Seals of East Georgia.

The ARTS MPO is committed to minimizing and mitigating the negative effects of transportation projects on the natural and built environments. In doing so, the MPO recognizes that not every project will require the same type or level of mitigation. Some projects, such as new roadways and new interchanges, involve major construction with considerable disturbance. Others, like intersection improvements, street lighting, and resurfacing projects, involve minor construction and minimal, if any, disturbance. The mitigation efforts used for a project should depend upon how severe the impact on environmentally sensitive areas is expected to be. To the extent possible, transportation projects should minimize off-site disturbance in sensitive areas and develop strategies to preserve air and water quality, limit tree removal, minimize grading and other earth disturbance, provide erosion and sediment control, and limit noise and vibration. Alternative project designs or alignments should be considered, when needed, to lessen the impact on environmentally sensitive areas.

A preliminary environmental impact screening, which was completed during the LRTP planning process, can identify potential impacts that could end up delaying or even terminating a project. Identifying “fatal flaws” early in the planning process provides the opportunity to avoid or mitigate undesirable impacts through modification or elimination of the project. Identifying “fatal flaws” early in the planning process helps reduce the risks that are inherent in an uncertain planning process, and helps ensure that time and resources are not expended unnecessarily. The result is a feasible LRTP that minimizes negative impacts on the natural and built environments.

The project prioritization process in South Carolina (Act 114) requires MPOs to review the environmental impacts of widening projects, intersection improvements, and new facility projects. SCDOT provided environmental impact maps for each of the projects listed in the 2035 LRTP and impacts were documented as “none”, “possible”, “likely”,





and “certain”. Impacts included 22 types of environmental features, such as hazardous waste sites, underground storage, wetlands, endangered species, parks, national register, historic sites, archaeological, low income, churches, cemeteries, etc. Based on the impacts to these features, an environmental score was assigned to each project and the subsequent scoring impacted how the project is implemented in the ARTS 2035 LRTP. **Figure 90** shows an example of the Aiken County Prioritization Tool Environmental Impact screen.

Figure 89: Aiken County Prioritization Tool Environmental Impact Screen

Criteria	Project Score
Traffic Volume/Congestion	30.0 of 30
Public Safety	10.0 of 10
Financial	8.4 of 14
Economic Development	5.0 of 10
Truck Traffic	4.8 of 8
Pavement Quality Index	3.8 of 6
Environmental Impact	6.5 of 10
Livability	7.7 of 12
TOTAL SCORE	76.2 of 100

Environmental		
Projects will be evaluated using a project evaluation matrix that has been developed by SCDOT. Environmental agencies will be asked to assess the environmental and social features, as well as the natural and cultural resources. The evaluation will include assessing the total number of environment impacts for each project. Please note that project the evaluationmatrix contains 22 areas of concern.		
UST/Hazardous Waste:	Possible	Floodplains/Drainage:
Ground Water Cont.:	None	Water Res. and Quality:
Infectious Waste:	Likely	Air Quality:
Underground Storage:	Likely	Farmland:
Water Storage:	Likely	Parks:
Other Storage:	Likely	National Register:
Wetland/Other Waters:	Possible	Historic Sites:
T/E Species	Possible	Archaeological Sites:
Architectural:	None	Low Income/Minority:
Schools/Hospitals:	None	Church/Cemetery:
Noise:	Possible	Relocation:

Source: Aiken County Project Prioritization Tool

Through the resource coordination process, **Table 36** was developed to identify potential mitigation measures in relation to proposed LRTP projects. As projects move forward in the transportation planning process, those that may impact resource areas would be examined more closely during the Preliminary Engineering phase.





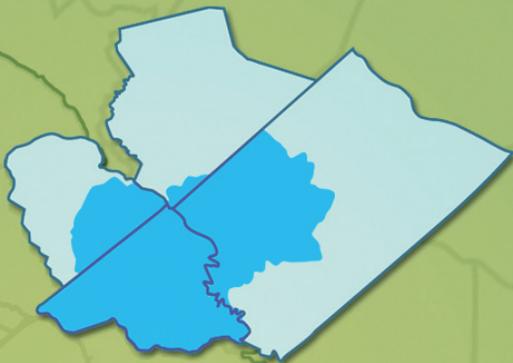
Table 36: Mitigation Measures

Resource	Mitigation Measures
Agricultural areas	Mitigation sequencing requirements involving avoidance, minimization, compensation (could include preservation, creation, restoration, in-lieu fees, riparian buffers); design exceptions and variances; and environmental compliance monitoring.
Ambient air quality	Transportation control measures, transportation emission reduction measures, adopt of local air quality mitigation fee program, develop energy efficient incentive programs, and adopt air quality enhancing design guidelines.
Cultural Resources	Avoidance and minimization; landscaping for historic properties; preservation in place or excavation for archeological sites; Memoranda of Agreement with the Georgia Department of Natural resources, Historic Preservation Division and South Carolina Department of Archives and History; design exceptions and variances; and environmental compliance monitoring.
Endangered and threatened species	Avoidance and minimization; time of year restrictions; construction sequencing; design exceptions and variances; species research; species fact sheets; Memoranda of Agreements for species management; and environmental compliance monitoring.
Forested and other natural areas	Avoidance and minimization; replacement property for open space easements to be of equal fair market value and of equivalent usefulness; design exceptions and variances; and environmental compliance monitoring.
Neighborhoods, communities, homes, businesses	Impact avoidance or minimization and context sensitive solutions for communities (appropriate functional and/or aesthetic design features).
Parks and recreation areas	Avoidance and minimization, mitigation; design exceptions and variances; and environmental compliance monitoring.
Wetlands or water resources	Avoidance and minimization; design exceptions and variances; and environmental compliance monitoring.





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WilburSmith ASSOCIATES

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