"Nationally, such issues as unstable gas prices, environmental concerns, and a growing interest in health and wellness are demonstrating the need for bicycle and pedestrian-friendly communities. On a local level, this Plan represents a strong commitment to take on such issues, transforming them into new opportunities for biking and walking: affordable personal mobility, carbon-free transportation, and healthy, active lifestyles for ARTS area residents."

Chapter One

Introduction

Introduction

The Augusta Regional Transportation Study (ARTS) commissioned this regional Bicycle and Pedestrian Plan with an itent to improve bicycle and pedestrian accommodations in the area. The Plan will serve as an update to the 2003 ARTS Regional Bicycle and Pedestrian Plan. **The chief outcome of the Plan will be an integrated, seamless framework to facilitate walking and biking as viable transportation choices throughout the entire region.** The Plan will integrate bikeway and walkway improvements into the regional planning process; identify gaps in the active transportation network; propose improved connectivity of communities, neighborhoods, and activity centers; identify policies and infrastructure needs for safe routes to transit, schools, and parks; and develop a framework for complete streets policies and standards. The Plan offers recommendations for infrastructure improvements, education and encouragement programs, and policies that will make ARTS communities more walk- and bike-friendly.

The development of this Plan included an open, participatory process, with area residents providing input through public workshops, stakeholder meetings, the project Steering Committee, and an online comment form.

Nationally, such issues as unstable gas prices, environmental concerns, and a growing interest in health and wellness are demonstrating the need for bicycle and pedestrian-friendly communities. On a local level, this Plan represents a strong commitment to take on such issues, transforming them into new opportunities for biking and walking: affordable personal mobility, carbon-free transportation, and healthy, active lifestyles for ARTS area residents.

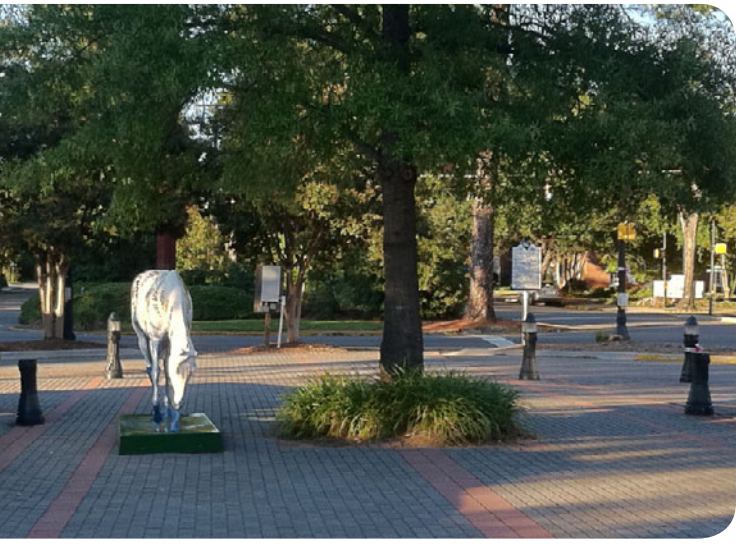
Background

ARTS functions as a bi-state MPO and is responsible for transportation planning in accordance with the federal metropolitan planning requirements for Richmond County, Georgia and portions of Columbia County, Georgia and Aiken and Edgefield Counties in South Carolina. The Georgia cities of Augusta, Grovetown, Hephzibah and Blythe, the South Carolina cities of Aiken, North Augusta, and Burnettown, and the Fort Gordon Military Reservation are all within the ARTS area.

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, 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 lead agency for planning and programing transportation improvements within the ARTS area, which are eventually implemented by local and state jurisdictions. Furthermore, as required by federal legislation, **ARTS provides the public and interested stakeholders with opportunities to be involved in the transportation planning process.**

Setting

The scenic landscapes and urban development of the bi-state region are tied together by the wide and winding Savannah River, which provides a dramatic natural landmark for the entire area. The central business districts of the region benefit from historic development patterns that represent living models for walkable communities. The historic Augusta Canal and the equestrian amenities of Aiken serve as regional and national attractions as well. Since 1934, during the first week in April, thousands of golf patrons from around the world travel to Augusta to watch The Masters Tournament. Additionally, in recent years, the region has hosted Ironman Triathlon events, USA Cycling championship races, and the International Mountain Bike Association conference. **Offering active transportation opportunities to citizens and tourists in the ARTS area will continue to enhance the area's sense of place and will fuel the local economy.**



The equestrian amenities of Aiken serve as regional and national attractions for the bi-state region.

The Six E's

Research has shown that a comprehensive approach to bicycle- and walk-friendliness is more effective than a singular approach that would address infrastructure issues only.[1] Recognizing this, the national Bicycle Friendly Community program, administered by the League of American Bicyclists, and the Walk Friendly Community program, administered by the National Center for Walking and Bicycling, recommend a multi-faceted approach based on the following five 'E's: Engineering, Education, Encouragement, Enforcement, and Evaluation. For the purposes of this Plan, a sixth 'E', Equity, is included in order to fulfill the goals and vision of this Plan. This Plan has been developed using the "6 Es" approach with an intent to provide action steps in each arena that each community can take towards becoming more bicycle and pedestrian-friendly.

Engineering

Designing, engineering, operating, and maintaining quality roadways and pedestrian and bicycle facilities is a critical element in producing a pedestrian-friendly and bicycle-friendly environment. Safe and connected infrastructure for bicyclists and pedestrians is one crucial piece of a comprehensive approach to increasing bicycling and walking activity. This category may include adding new bicycle and pedestrian specific infrastructure, improvements to street crossings, traffic calming, trail design, traffic management, school zones, or other related strategies.

Education

Providing bicycle and pedestrian educational opportunities is critical for bicycle and pedestrian safety. Education should span all age groups and include motorists as well as cyclists and pedestrians. The focus of an educational campaign can range from information about the rights and resposnibilities of road users to tips for safe behavior; from awareness of the communitywide benefits of bicycling and walking to technical trainings for municipality staff.

Encouragement

Encouragement programs are critical for promoting and increasing walking and bicycling. These programs should address all ages and user groups from school children, to working adults, to the elderly and also address recreation and transportation users. The goal of encouragement programs is to increase the amount of bicycling and walking that occurs in a community. Programs can range from work-place commuter incentives to a "walking school bus" at an elementary school; and from

bicycle- and walk-friendly route maps to a bicycle co-op.

Enforcement

Enforcement is critical to ensure that motorists, bicyclists, and pedestrians are obeying common laws. It serves as a means to educate and protect all users. The goal of enforcement is for bicyclists, pedestrians, and motorists to recognize and respect each other's rights on the roadway. In many cases, officers and citizens do not fully understand state and local laws for motorists, bicyclists, and pedestrians, making targeted education an important component of every enforcement effort.

Evaluation

Evaluation methods can include quarterly meetings, the development of an annual performance report, update of bicycle and pedestrian infrastructure databases, pedestrian and bicycle counts, assessment of new facilities, and plan updates. ARTS, its partners, and municipalities will monitor implementation of this Plan on a regular basis and establish policies that ensure long-term investment in the bikeway and walkway network. Monitoring progress of implementation will facilitate continued momentum and provide opportunities for updates and changes to process if necessary. Additionally, ARTS communities will adopt policies that promote investment in and improvements to the bicycling and walking environment in accordance with the recommendations of this Plan.

Equity

Equity in transportation planning refers to the distribution of impacts (benefits and costs) and whether that distribution is considered appropriate. Transportation planning decisions have significant and diverse equity impacts. Equity in bicycle and pedestrian planning decisions should reflect community needs and values. Communities may choose to give special attention to variances in age, income, ability, gender, or other characteristics. ARTS and its partner implementation agencies will target outreach with a diversity of programs and events, and ensure appropriate geographic distribution of bike facilities, programs and educational programs.

Encouragement and education programs are important tools for promoting bicycling and walking safety and awareness.

The Value of Walkable and Bicycle-Friendly Communities

Given the commitment of time and resources needed to fulfill the goals of this Plan, **it is important to keep in mind the immense value of bicycle and pedestrian transportation**. Increased rates of bicycling and walking will help to improve people's health and fitness, improve livability of our communities, enhance environmental conditions, decrease traffic congestion, and contribute to a greater sense of community.

Scores of studies from experts in the fields of public health, urban planning, urban ecology, real estate, transportation, sociology, and economics have supported such claims and affirm the substantial value of supporting bicycling and walking as active living and transportation choices. Communities across the United States and throughout the world are implementing strategies for serving the bicycling and walking needs of their residents. They do this because of their obligations to promote health, safety and welfare, and also because of the growing awareness of the many benefits outlined in this section.

Economic Benefits - Community

In a 2011 Community Preference Survey conducted by the National Association of

Realtors (NAR), 66 percent of respondents selected being within walking distance of stores and other community amenities as being important. Additionally, the 2011 NAR survey reflected changes in priorities compared to 2004, the last time the survey was conducted. Interest in walkability increased, with 46 percent saying their community had too few shops and restaurants within easy walking distance, compared to 42 percent in 2004. In the 2011 survey, 40 percent said their community needed more sidewalks, compared to 36 percent in the 2004 survey. A 2010 study by CEOs for Cities looked at data for more than 90,000 recent home sales in 15 different markets around the Nation. While controlling for key characteristics that are known to influence housing value, the study showed a positive correlation between walkability and housing prices in 13 of the 15 housing markets studied.[2]

Destinations located within easy walking distance create the basis for a walkable community.

Trails can play a part in making communities more walkable, and they too have a positive economic impact. In a survey of homebuyers by the National Association of Realtors and the National Association of Home Builders, trails ranked as the second most important community amenity out of a list of 18 choices.[3] Additionally, the study found that 'trail availability' outranked 16 other options including security, ball fields, golf courses, parks, and access to shopping or business centers.

From a tourism perspective, cyclists can add real value to a community's local economy. For example, in the Outer Banks, NC, bicycling is estimated to have a positive annual economic impact of $60 million; 1,407 jobs are supported by the 40,800 visitors for whom bicycling was an important reason for choosing to vacation in the area. The annual return on bicycle facility development in the Outer Banks is approximately nine times higher than the initial investment. The quality of bicycling in the Outer Banks region positively impacts vacationers' planning—it is not all about the beaches:

- 12% report staying three to four days longer to bicycle
- 43% report that bicycling is an important factor in their decision to come to the area
- 53% report that bicycling will strongly influence their decision to return to the area in the future[4]

The ARTS region is already achieving positive economic gains through its own attractions. The economic impact of cycling-related sporting events in just the last three years (2009-2011) totals $15.5 million. The Ironman 70.3 event, which Augusta has hosted since 2009 and will continue to host through 2014, brings $4.5million in economic impact each year. The USA Cycling championship events (Juniors, U23, Elite & Paralympic Road National Championships) totaled $1.5 million in economic benefits in 2011 and is expected to have a similar or greater impact in 2012. The ARTS region was also fortunate to host the 2010 International Mountain Bike Association (IMBA) Summit in 2010, which brought nearly $0.5 million in local economic gains.[5]

Tourists are already attracted to the walkable downtowns and historic districts in the region. **As the ARTS region continues its success in creating an attractive network of trails and bicycle routes and events, the bicycle- and active lifestyle- related tourism that it already attracts will grow.**

Economic Benefits - Individual

Walking is an affordable form of transportation. A walkable community directly benefits a citizen's transportation costs. The Pedestrian and Bicycle Information Center (PBIC), explains "When safe facilities are provided

for pedestrians and bicyclists, more people are able to be productive, active members of society. Car ownership is expensive, and consumes a major portion of many Americans' income." A study cited by the Victoria Transport Policy Institute's 2011 "Transportation Affordability" found that households in automobile-dependent communities devote 50% more to transportation (more than $8,500 annually) than households in communities with more accessible land use and more multi-modal transportation systems (less than $5,500 annually).

Bicycling is also an affordable form of transportation. According to the PBIC, the cost of operating a bicycle for a year is approximately $120, compared to $7,800 for operating a car over the same time period.[6] Bicycling becomes an even more attractive transportation option when the unstable price of gas is factored into the equation.[7] Replacing automobile trips with bicycle trips, even if it is for only one trip a week will reduce overall gas consumption and save money. Transportation is second to housing as a percentage of household budgets, and it is a top expense for many low income families.

Transportation Costs by Mode

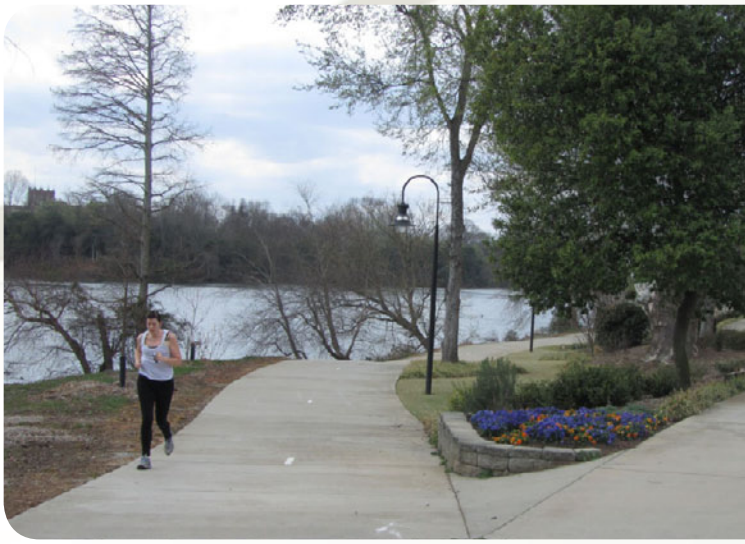
Mode	Cost
Car	$0.59/mile
Transit	$0.24/mile
Bike	$0.05/mile
Walking	$0.0/mile

(Source IRS, ATA, RTC)

Health Benefits

A growing number of studies show that the design of our communities—including neighborhoods, towns, transportation systems, parks, trails and other public recreational facilities—affects people's ability to reach the recommended daily 30 minutes of moderately intense physical activity (60 minutes for youth). The increased rate of disease associated with inactivity reduces quality of life for individuals and increases medical costs for families, companies, and local governments. **The Centers for Disease Control (CDC) has determined that creating and improving places to be active could result in a 25 percent increase in the number of people who exercise at least three times a week.[8]** This is significant considering that for people who are inactive, even small increases in physical activity can bring measurable health benefits. The establishment of a safe and reliable transportation network that offers opportunities for bicycling will have a positive impact on the health of nearby residents. The Rails-to-Trails Conservancy puts it simply: "Individuals must choose to exercise, but communities can make that choice easier".[9]

Today, 32 percent of American adults are obese, and 67 percent are overweight or obese. America's weight problem doesn't spare our youth either: 19 percent of all teenagers and 17 percent of all children between ages 6 and 11 are overweight.[10] The childhood obesity rate has almost tripled since 1980 and the adolescent rate has more than quadrupled.[11]



Creating places for active transportation and recreation results in more healthy communities.

In the ARTS region, the CDC estimates that 21 to 28 percent of adults are physically inactive and 26 to 33 percent of adults are obese. Table 1-1 shows the most recent health statistics for each county in the ARTS region.

Table 1-1. Centers for Disease Control Rates of Adult Physical Inactivity and Obesity in the ARTS Region

	Aiken County	Augusta-Richmond County	Columbia County	Edgefield County
Adult Physical Inactivity	24.0%	28.9%	21.6%	25.4%
Adult Obesity	31.7%	33.1%	26.7%	33.5%

(Source: Centers for Disease Control, 2008)

Offering more opportunities for children, adolescents and adults to safely and conveniently bicycle and walk in their community will encourage citizens to exercise more frequently, increasing their levels of physical activity and impacting the obesity epidemic.

Environmental Benefits

As demonstrated by the Southern Resource Center of the Federal Highway Administration, when people get out of their cars and walk, or ride their bicycles, they reduce measurable volumes of pollutants.[12] Bicycles and foot traffic produce absolutely no pollution and to make a bicycle requires only a fraction of the materials and energy needed to make a car.

Greenways protect rivers and lakes, preventing soil erosion and filtering pollution carried by stormwater runoff.

A bicycle commuter who rides five miles to work, four days a week, avoids 2,000 miles of driving a year—the equivalent of 100 gallons of gasoline saved and 2,000 pounds of CO2 emissions avoided. CO2 savings of this magnitude reduce the average American's carbon footprint by about 5 percent. To achieve equivalent CO2 reductions by public transportation one would have to shift approximately 30 miles of daily commuting from car to transit. A citizen who lives in a community that allows him or her to run most errands by bicycling or walking can save about 500 gallons of fuel, or 10,000 pounds of CO2 each year.

Trails and greenways also convey unique environmental benefits. Greenways protect and link fragmented habitat and provide opportunities for protecting plant and animal species. Trails and greenways connect places without the use of emission-producing vehicles, while also reducing air pollution by protecting large areas of plants that create oxygen and filter pollutants such as ozone, sulfur dioxide, carbon monoxide and airborne particles of heavy metal. Finally, greenway corridors can improve water quality by creating a natural buffer zone that protects streams, rivers and lakes, preventing soil erosion and filtering pollution caused by agricultural and road runoff.

Safety Benefits

Conflicts between bicyclists and motorists and pedestrians and motorists result from poor riding, walking and/or driving behavior as well as insufficient or ineffective facility design. **Encouraging development and redevelopment in which bicycle and foot travel are fostered improves the overall safety of the roadway environment for all users.** Well-designed bicycle facilities improve safety and security for current cyclists and also encourage more people to bike, which in turn, can further improve bicycling safety. Studies have shown that the frequency of bicycle collisions has an inverse relationship to bicycling rates – more people on bicycles equates to fewer crashes.[13] Likewise, well-designed walkway facilities improve safety and security for pedestrians. Providing information and educational opportunities about safe and lawful interactions between

bicyclists, pedestrians and other roadway users also improves safety.

Community/Quality of Life Benefits

Fostering conditions where bicycling and walking are accepted and encouraged increases a city's livability from a number of different perspectives, that are often difficult to measure but nevertheless important. The design, land use patterns, and transportation systems that comprise the built environment have a profound impact on quality of life issues. Studies have found that people living in communities with built environments that promote bicycling and walking tend to be more socially active, civically engaged, and are more likely to know their neighbors.[14, 15] Settings where walking and riding bicycles are viable also offer greater independence to the elderly, the disabled, and people of limited economic means who are unable to drive automobiles for physical or economic reasons. The aesthetic quality of a community also improves when visual and noise pollution caused by automobiles is reduced and when green space is reserved for facilities that enable people of all ages to recreate and commute in pleasant settings.

Summary of Existing Documents

The documents listed in Table 1-2 were carefully reviewed to ensure that the goals and recommendations developed in this Plan are consistent with the goals and recommendations identified during these previous planning efforts. A thorough review of the documents listed in this section was prepared and is included in Appendix A.

The 18 regional and local planning documents reviewed offer overlapping goals relevant to the entire region. In particular, the *ARTS Long Range Transportation Plan* (2010) included a public survey with questions related to transportation priorities and spending for the region. The survey found that when asked which transportation system element is most desired, nearly 50 percent chose sidewalks and crosswalks (49.2 percent) and bike lanes and multi-use trails (45.8 percent) and only 13 percent chose highways. Additionally, in a hypothetical spending scenario, survey respondents answered that with $100 available for transportation, nearly 30 percent (or $30) should be spent on bike lane, sidewalk, and multi-use path construction.

Existing planning documents, such as the recently completed North Augusta Greeneway Plan, were reviewed to ensure that the recommendations developed in this Plan are consistent with those of previous planning efforts.

Bicycle and pedestrian network recommendations and programmed roadway projects included in the plans are addressed in the proposed network of this Plan. The following themes from existing planning documents are incorporated into in the Vision, Goals, and Objectives of this Plan, as well as the infrastructure and non-infrastructure recommendations:

Themes from existing planning documents incorporated into this Plan:
Provide and promote transportation mode choices.
Integrate transportation with land use.
Provide bicycle and pedestrian connectivity between residential areas to destinations.
Promote quality growth and protect natural resources.
Establish interagency and interjurisdictional coordination and planning.
Leverage the region's tourism and recreation-retirement potential.
Connect greenways, bikeways and walkways.

Table 1-2. List of Documents Reviewed for this Study

Document Name	National	Regional	Local
United States Department of Transportation Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations Press Release Summary, March 11, 2010	x		
Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, August 25, 2005	x		
GDOT Designs and Policy Manual Chapter Nine – Bicycle and Pedestrian Accommodations, March 2011		x	
SCDOT Complete Streets Resolution, 2003		x	
SCDOT Engineering Directive Memorandum 22 (EDM 22), 2003		x	
CSRA Regional Bicycle and Pedestrian Plan, June 2005		x	
ARTS Regional Bicycle and Pedestrian Plan, 2003		x	
ARTS 2035 Long Range Transportation Plan, 2010		x	
Aiken County SC Comprehensive Plan			x
Augusta Richmond GA County Comprehensive Plan, 2008			x
Columbia County GA 2025 Long Range Transportation Plan, 2004			x
Columbia County Growth Management Plan: Partial Update, 2011-2016			x
Edgefield County SC Comprehensive Plan			x
The Westobou Vision Master Plan (Augusta and North Augusta Urban Area), 2009			x
Augusta Public Transit Development Plan, 2009			x
Realizing the Garden City: The Augusta Sustainable Development Agenda, 2010			x
North Augusta Riverfront Redevelopment District Master Plan, 1996			x
North Community Needs Assessment, 2003			x
North Augusta Parks and Recreation Facilities Master Plan, 2003			x
City of North Augusta Comprehensive Plan, 2005			x
North Augusta Greeneway, Pedestrian and Bicycle Master Plan, 2011			x
City of Aiken 2010 Strategic Plan			x
City of Aiken Greenways Plan, 1994			x

Endnotes

1 Pucher, J. Dill, J. and Handy, S. (2010). Infrastructure, programs, and policies to increase bicycling: An international review. Preventative Medicine, 50. S106-S125; Krizek, K., Forsyth, A., and Baum, L. (2009). Walking and cycling international literature review. Melbourne, Victoria: Department of Transport.

2 CEOs for Cities. (2010) Walking the Walk: How Walkability Raises Home Values in U.S. Cities.)

3 National Association of Realtors and National Association of Home Builders. (2002). Consumer's Survey on Smart Choices for Home Buyers.

4 NCDOT and ITRE. (2006). Bikeways to Prosperity: Assessing the Economic Impact of Bicycle Facilities.

5 Augusta Sports Council, phone interview (December 8, 2011)

6 Pedestrian and Bicycle Information Center. (2010). Economic Benefits: Money Facts. Retrieved 1/20/2010 from www.bicyclinginfo.org/why/benefits_economic.cfm

7 King, Neil. (2/27/08). The Wall Street Journal: Another Peek at the Plateau

8 U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. (2002). Guide to Community Preventive Services

9 Rails-to-Trails Conservancy. (2006) Health and Wellness Benefits

10 Centers for Disease Control and Prevention, Overweight and Obesity 2008 http://www.cdc.gov/nccdphp/dnpa/obesity

11 National Center for Health Statistics, Prevalence of Overweight Among Children and Adolescents: United States, 2003-2004. 2007

12 Federal Highway Administration, Southern Resource Center. (1999)

13 Jacobsen, P. "Safety in Numbers: More Walkers and Bicyclists, Safer Walking and Bicycling". Injury Prevention, 9: 205-209. 2003.

14 Frumkin, H. 2002. Urban Sprawl and Public Health. Public Health Reports 117: 201–17.

15 Leyden, K. 2003. "Social Capital and the Built Environment: The Importance of Walkable Neighborhoods." American Journal of Public Health 93: 1546–51.