"Bicycling and walking as a means of transportation has been growing in popularity as many communities work to create more balanced transportation systems. In addition, more people are willing to cycle more frequently if better bicycle facilities are provided."

Chapter Four

Bicycle and Pedestrian Safety

Introduction

To better understand bicyclist and pedestrian needs, the consulting team conducted a detailed analyisis investigating the current safety, suitability, and demand for bicycling and walking in Aiken County. This analysis is divided into four parts within this chapter:

- An analysis of current bicyclist and pedestrian suitability in the region.
- A demand and benefit analysis of bicycling and walking in the region.
- Bicyclist and pedestrian count results and their implications.
- A safety analysis which includes an investigation of crashes involving bicyclists and pedestrians in the region.

Bike and Pedestrian Suitability

The BSA and PSA models were developed to evaluate potential bicycle and pedestrian activity levels in Aiken County, South Carolina.

The analyses:

- Quantify factors that impact bicycle and pedestrian activity.
- Locate bicycle and pedestrian network gaps as potential projects.
- Identify potential regional bicycle and pedestrian corridors.
- Guide the development of new pedestrian and bicycle trip generation tools that enhance the user experience and maximize bikability and walkability.

BSA and PSA identify areas where cyclists and pedestrians are most likely to be. The analyses assign weighted values to available mapped data (metrics) based on the data's relative impact on cycling and walking. Impacts take the form of both trip generators and attractors, collectively approximating network demand, or infrastructure suitability, representing network supply. BSA and PSA demand scores are assigned to areas throughout the region based on the density of generator variables and the proximity to attractors. Demand scores are then overlaid on top of supply to understand roadway quality in areas with high potential demand. Roadway quality incorporates characteristics that make cycling and walking viable, such as traffic speed and volume. The results of this technique can therefore be used to prioritize projects in areas with high demand. Where that demand meets suitable infrastructure, cost-effective investments can help to create a safe and direct network for cyclists and pedestrians. In areas with low suitability, interventions may help to improve conditions, or off-road facilities may provide an alternative for cyclists and pedestrians.

Metrics are divided into five sub categories: live, work, play, transit, and roadway quality. The live, work, and play categories represent the destinations that will generate and attract walking and cycling trips, such as homes, workplaces, and recreational amenities. Transit is also considered an attractor category, since transit stops are destinations in themselves providing wider regional access to cyclists and pedestrians. Roadway quality represents trip supply. It includes characteristics of the road network (like shoulder width, traffic, and connected intersections) that allow cyclists and pedestrians to reach each of the other destinations. Table 4-1 presents the metrics by category.

Table 4-1: BSA and PSA Metrics Overview

Category	Metric
Live	Population density, vehicle ownership inventory and journey to work mode
Work	Employment density by job sector and college enrollment density
Play	Proximity to points of interest and schools
Transit	Proximity to bus stops
Roadway Quality	Speed limit, connected/ disconnected intersections, slope, etc.

Combining these metrics into one map enables the prioritization of projects that will have the greatest impact on the greatest number of people. Since demand metrics are mapped at different scales, (e.g. points of interest are mapped as nodes and population density is mapped by U.S. Census block group), each metric was converted to a similar scale so that values could be summed. Specifically, a square grid of 100 feet by 100 feet was laid across the Aiken County and each metric was converted to this grid. The composite demand values were then compared to the roadway quality scores. Since every community is different, the inputs and scoring methods used in the BSA and PSA are tailored to local needs and values.

This analysis is based on data obtained from Aiken County and its municipalities, the Lower Savannah Council of Governments, the South Carolina Department of Transportation and the University of South Carolina's GIS Data Server. Data was selected based on its availability and regional significance. Unless otherwise noted, data attributes were assigned values of 1 through 5 based on the geometrical interval classification system. This classification system was developed by ESRI's Geostatistical Analyst Team. Similar to a progression classification, this method works well on continuous data (data that is distributed over an area) and data that is not distributed normally.

The following sections present the inputs and analysis for each category examined, as well as the final composite results.

Data Inputs

1 Bicycle and Pedestrian Generators

The datasets described in this section approximate the potential trip generation of homes and workplaces throughout the region. The data extent covers the entire region, and thus provides a composite score for every space within the region for each category. Scores are assigned based on factors affecting the likelihood of trips to and from home and work. Figure H-1, Figure H-2, Figure H-6, and Figure H-7 in Appendix H at the end of this report summarize these scores.

1.1 Live

BSA and PSA utilize a variety of demographic data to indicate where potential volumes of cycling and pedestrian activity will be generated. Base population density, percentage of households without immediate access to a car, and the percentage of people already biking and walking to work are all contributors to this category. Demographic datasets were derived from the 2000 US Census and synthesized into a spatial database in GIS.

1.2 Work

Another key indicator of trip volume is the density of places of employment and college student populations. Employment density was obtained via the Longitudinal Employment and Household Dynamics (LEHD), a program conducted by the US Census Bureau. This data was broken down into two sub-categories based on the North American Industry Classification System (NAICS). These categories were separated into service and commercial/ manufacturing jobs. The service industry was assigned a higher weight than the commercial/ manufacturing industry since these locations tend to draw in customers and generate foot traffic and are therefore both a trip generator and attractor. College student body totals were obtained from a variety of sources and were included in this category because students typically spend the same number of hours on campus as workers do in a typical day.

2 Bicycle and Pedestrian Attractors

The datasets described in this section approximate the potential of destinations and transit facilities throughout the region to attract cyclists and pedestrians and thus generate trip demand in areas surrounding them. Unlike the generators described previously, each of these datasets does not cover the entire region but is rather represented as point or polygon nodes distributed throughout the region. Like the colleges described above, these nodes are buffered before overlaying the datasets so that areas closer to the attractor receive higher scores than those farther away. Figure H-3, Figure H-4, Figure H-8, and Figure H-9 in Appendix H at the end of this report illustrate attractor scores in Aiken County.

2.1 Transit

Transit stops act as attractors to cyclists and pedestrians, because they provide potential access to and from many of the other generators (e.g., workplaces, homes) and attractors (e.g., parks, schools) that might otherwise be too far away to bike or walk. In Aiken County, buses are the only available public transit option, thus bus stops are used as the only data input to the transit map. It is assumed that cyclists will travel up to three miles to access a bus stop, and pedestrians will walk up to one mile. Within these 3-mile and 1-mile areas, scores are assigned, decreasing with increasing distance from the stop, to approximate the decreasing attractiveness of bus stops the farther they lie from a traveler's starting point or destination.

2.2 Play

The features in this category represent destinations other than homes and workplaces that are likely to attract cyclists and pedestrians. While cycling and walking are different in nature, the features that attract this activity are quite similar. Varying scores were assigned to each of the features comprising the "play" category, recognizing that some features are more likely to attract cycling and walking than others. Features of regional significance, such as parks, campgrounds, and hotels, are given higher scores, though schools and retail corridors also play a significant role in this category and are scored accordingly.

3 Bicycle and Pedestrian Infrastructure Suitability

While all the generator and attractor categories described previously collectively demonstrate potential bicycle and pedestrian trip demand throughout the region, this section describes the potential of road infrastructure to meet that demand. Figure H-5 and Figure H-10 in Appendix H at the end of this report illustrate roadway quality in Aiken County.

3.1 Roadway Quality

Various roadway characteristics collectively comprise the "roadway quality" category. This category is used to understand the quality of available infrastructure supporting cyclist and pedestrian travel between destinations within the generator and attractor categories. Roadway quality is defined by looking at connectivity, safety (collision history from 2008 - 2010), bicycle and pedestrian infrastructure, average daily traffic (ADT), vehicular speed and slope. A majority of the categories are broken into five divisions by their respective units and scored 1 to 5 according to those divisions. The divisions used for average daily traffic and traffic speed are both based on the London Cycling Design Standards.

BSA and PSA Composite Activity Models

Development of the Composite Activity Model followed two steps:

1. Combine bicycle and pedestrian attractor and generator composite datasets to produce a composite activity score dataset of the region, approximating demand. Figure 4-2 and Figure 4-3 illustrate this potential activity for the BSA and PSA respectively.

2. Overlay the appropriate composite roadway quality score, approximating supply, to create a Composite Activity Model.

The Composite Activity Model can be used in several ways to identify areas for improvement and to prioritize projects. These are summarized below.

- Areas with high demand for cycling and walking and high supply of suitable infrastructure can benefit from innovative

programs and capital projects that further support cycling and walking, closure of key gaps, and should be considered showcase areas where best practices can be modeled for the region. These areas provide cost-effective opportunities for improvements and should be high priority for investment.

- Areas with high demand for cycling and walking and low supply of suitable infrastructure can benefit from infrastructure improvements to improve cycling and walking conditions. These areas may require off-road facilities for conditions such as high traffic volume or speed. They should also be high priority for investment.
- Areas with low demand for cycling and walking and high supply of suitable infrastructure can benefit from programs to encourage cycling and walking, and land use changes or development to increase the density of attractors and generators. These areas should be medium priority for investment.
- Areas with low demand for cycling and walking and low supply of suitable infrastructure can benefit from basic infrastructure improvements. These areas should be low-priority for investments.

Composite Activity Models were developed for Aiken County. Independent Composite Activity Models were also developed for the ARTS region. Areas of Aiken County that are included in both models have consistent scores but are scaled to the geographic extents of each region (ARTS and Aiken County). This has an effect on only the ranges of values but the streets receive consistent values.

Figure 4-1 describes the recommendation development concept in matrix form. Figure 4-4 and Figure 4-5 on the following pages show the Composite Activity Models for Aiken County.

Figure 4-1: Composite Activity Model Recommendation Summary

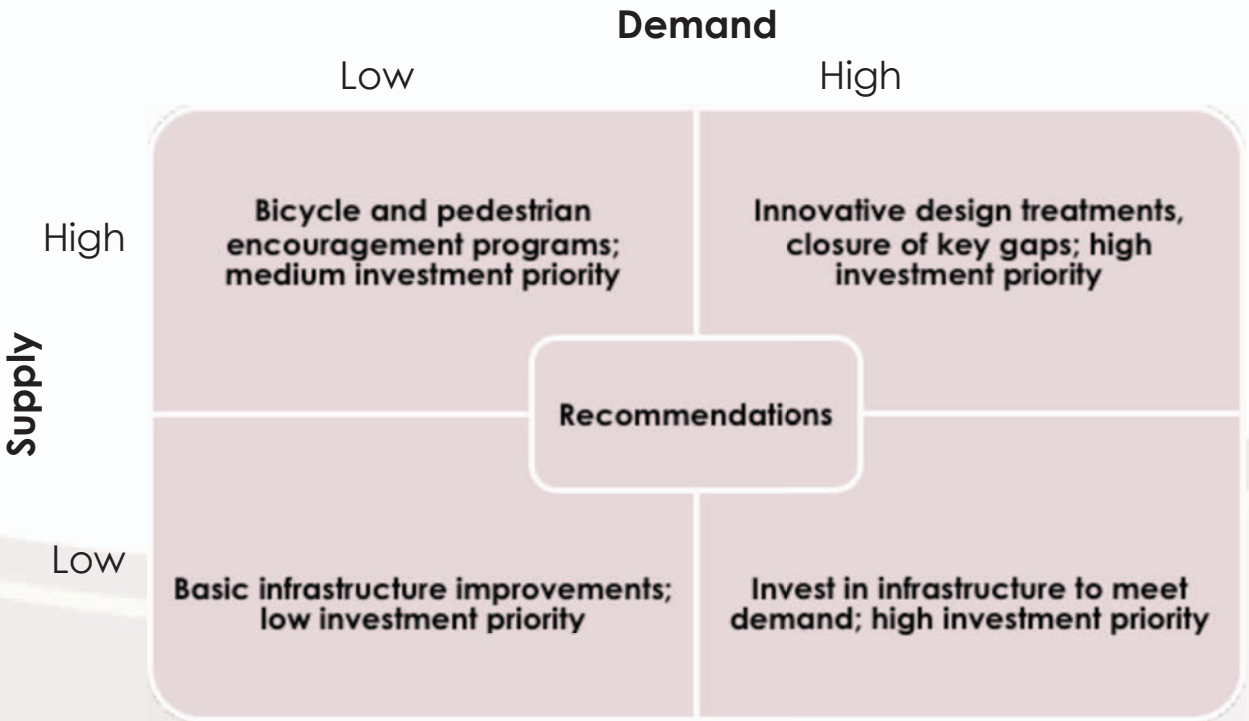

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Figure 4-2: Aiken County Demand Composite Map – Bicycle

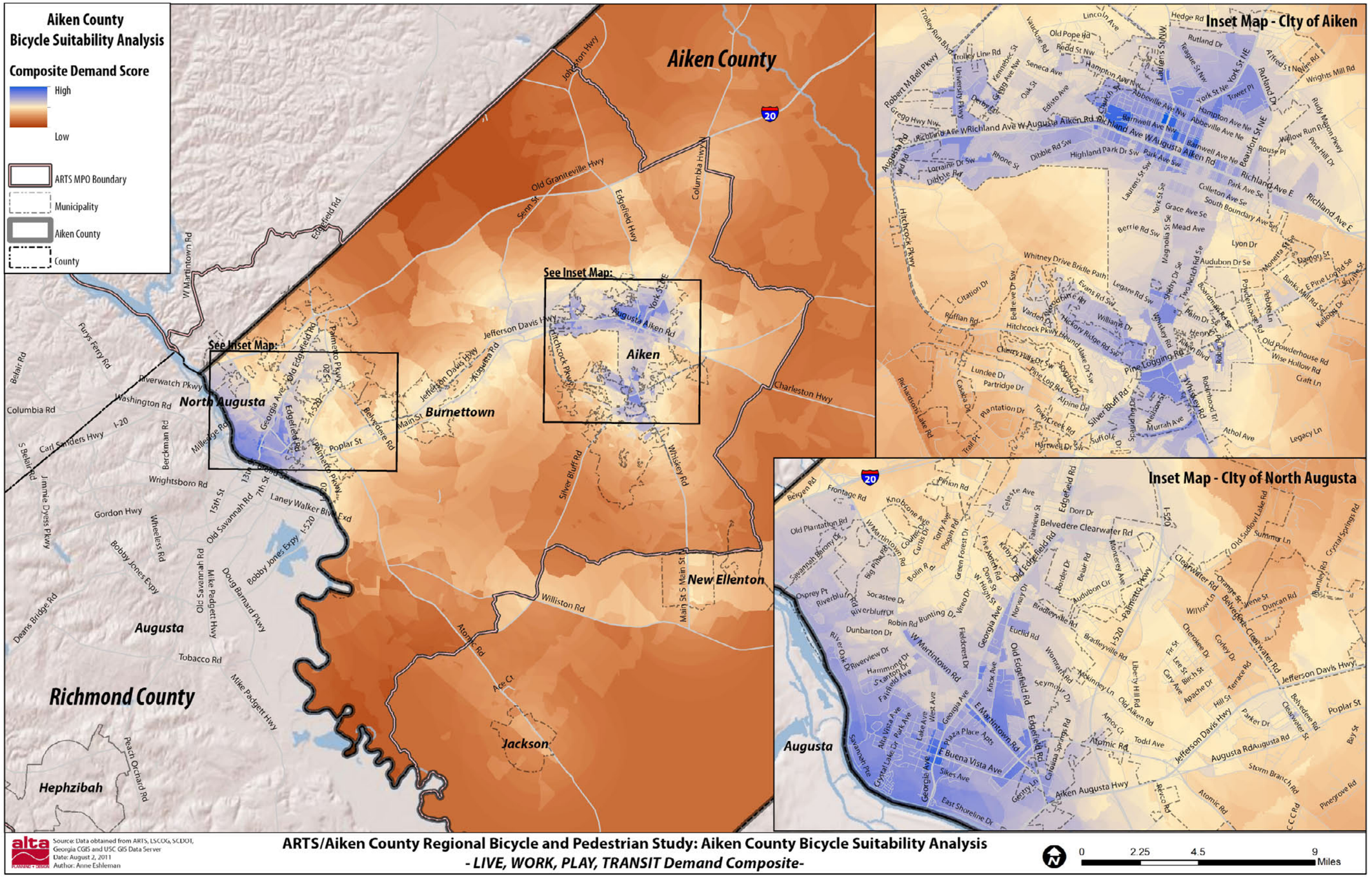


Figure 4-3: Aiken County Demand Composite Map – Pedestrian

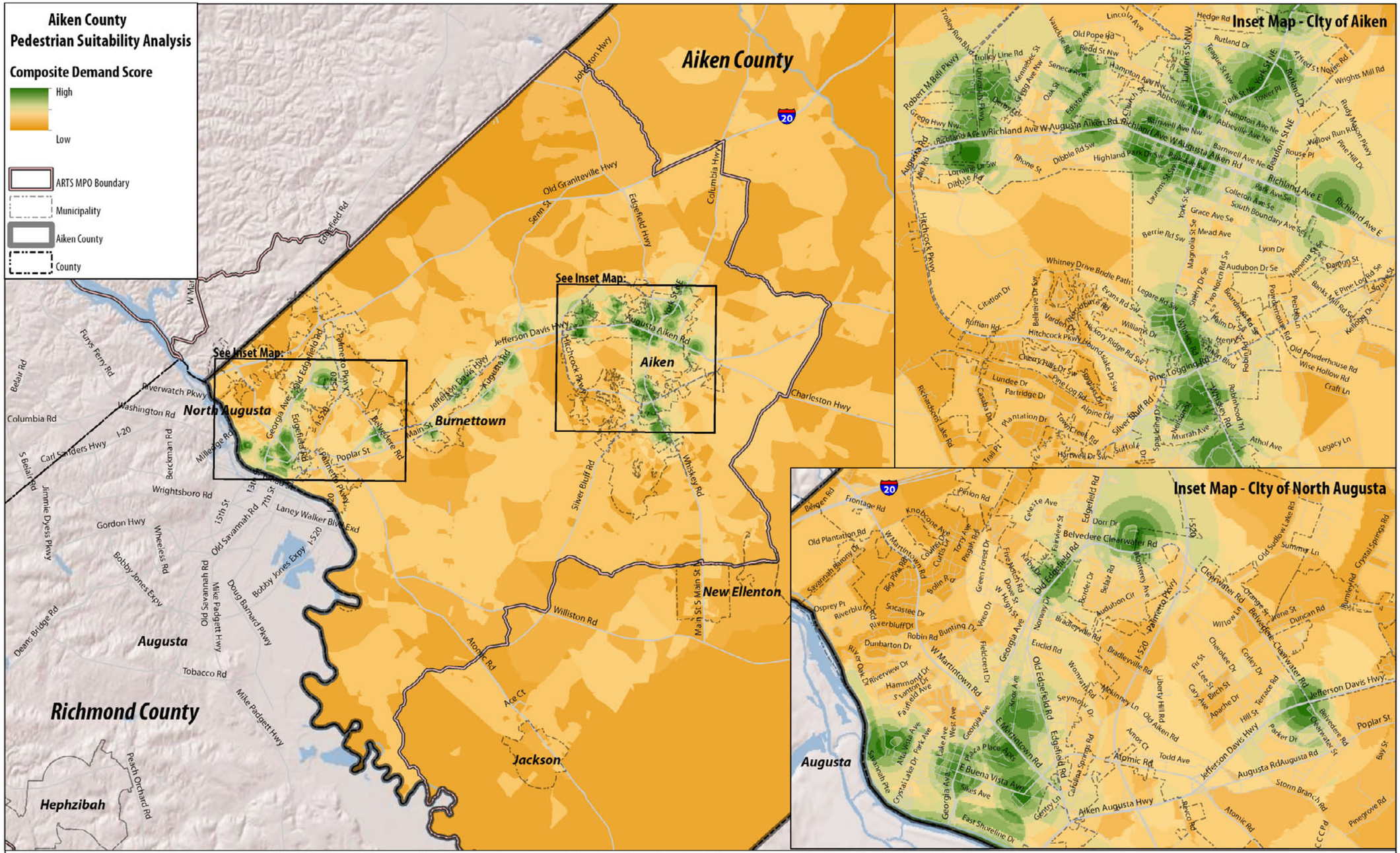


Figure 4-4: Aiken County Composite Activity Model Map – Bicycle

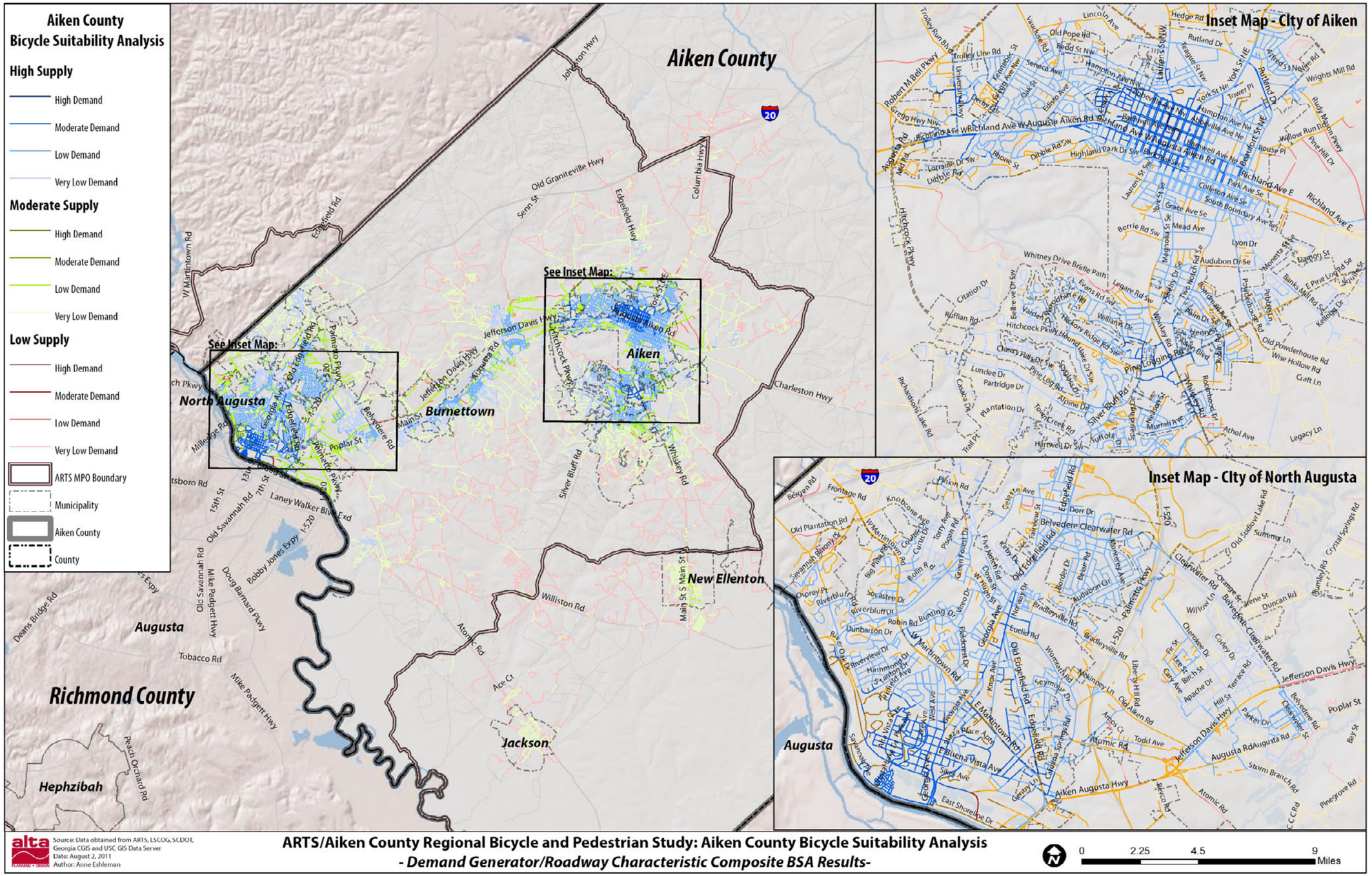
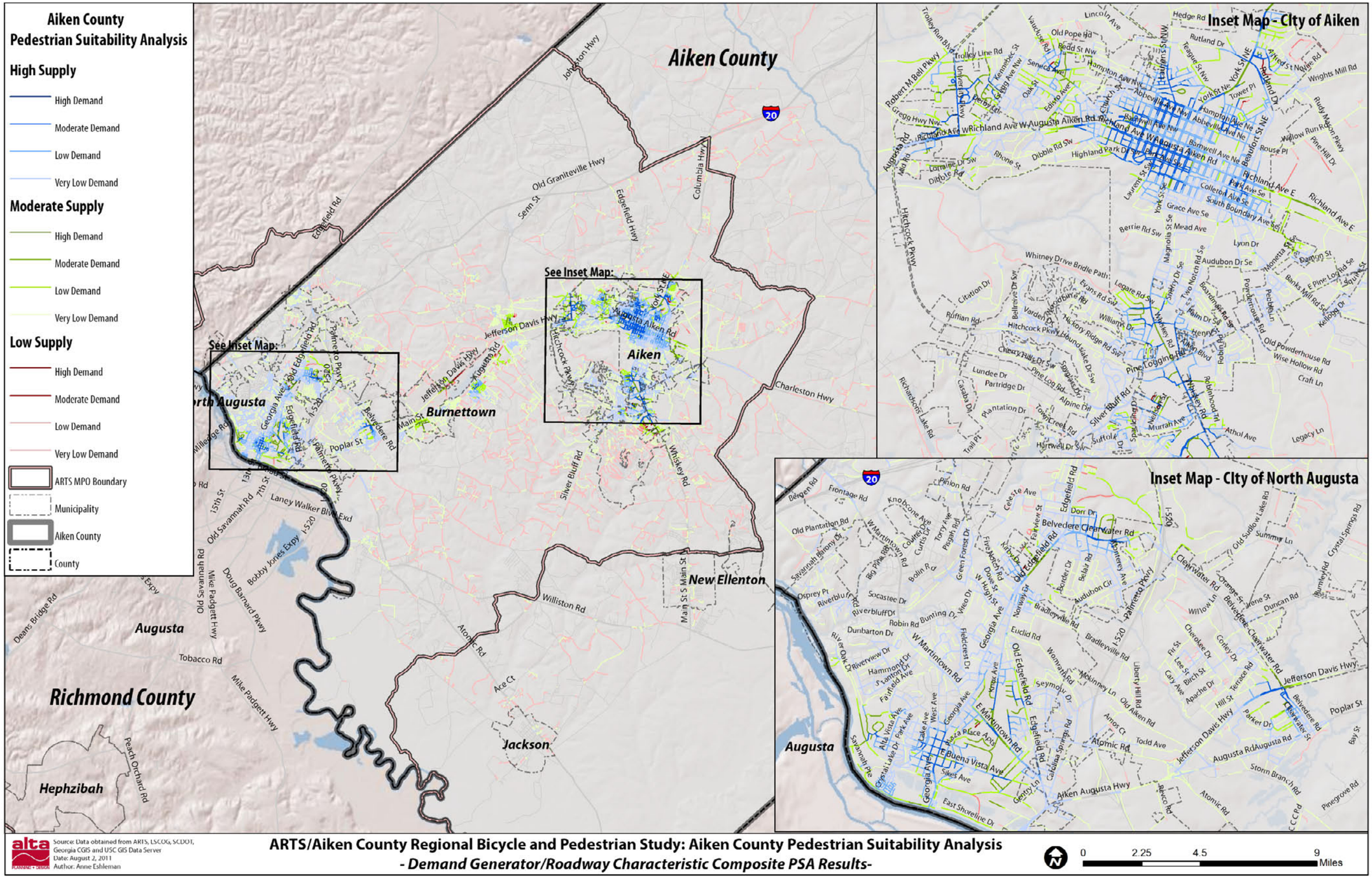


Figure 4-5: Aiken County Composite Activity Model Map – Pedestrian



Demand and Benefit Analysis

This section identifies the assumptions made in the demand model used to estimate the number of current and future bicycling trips in Aiken County as part of the Augusta Regional Transportation Study (ARTS) Bicycle and Pedestrian Study Demand and Benefit Analysis

The model uses a market segment approach to estimate the number of bicycling or walking trips taken by populations that traditionally have a higher bicycling/walking mode split than work commuters (such as elementary school and college students). National transportation surveys, in particular the National Household Travel Survey (NHTS, 2009), have shown that work commute trips are only a fraction of total trips an individual takes on a given day. The model uses the NHTS findings to estimate the number of non-work, non-school trips taken by commuters to determine the number of walking or bicycling trips that occur in a day.

Data Used in the Model

Journey-to-work information collected by the US Census Bureau's American Communities Survey (ACS) is the foundation of this analysis. The most recent ACS data available for Aiken County is the 2005-2009 five-year estimate. Because the area of Aiken County within the ARTS region is not divided along the county line, the Census tracts within the boundary were selected. A few of the tracts are only partially within the ARTS jurisdiction. The area south of North Augusta, near the Savannah River Site, is relatively rural and the population was assumed to be evenly distributed (e.g., if 30 percent of a tract is within the ARTS boundary, it was assumed that only 30 percent of the total population for that tract is within the ARTS boundary).

Because it is relatively suburban to the northeast of North Augusta, it was assumed that the population is concentrated within the ARTS boundary, and a multiplier of 1.5 was added to the proportional area within ARTS.

Model variables from the ACS for Aiken County include: total population (119,076 people), employed population (51,602 people), school enrollment (18,997 students grade K-12; 7,092 college/university students), and travel-to-work mode split (see Table 4-2).

Table 4-2. Aiken County Commute Modeshare

	Bicycling	Walking	Source
Employed	0.22%	1.38%	ACS, 2005-2009
K-12	0.67%	10.6%	NHTS 2009
College	0.22%	1.38%	ACS, 2005-2009
South Carolina average	1.9%	0.3%	ACS, 2005-2009

Note: analysis excludes areas of counties outside the ARTS boundary.

By comparison, South Carolina's bicycling mode split is 0.25 percent, while the walking mode split is 1.86 percent, showing that Aiken County has fewer bicycling and walking trips than other counties in the state. However, Aiken has a large number of commute pedestrians compared to other counties in the ARTS region. None of the other counties have mode splits higher than the state average of 1.86 percent walking. Richmond County is the only county in the region with a higher rate than the South Carolina average.

The 2009 NHTS provides a substantial national dataset of travel characteristics, particularly for trip characteristics of bicycling and walking trips. Data used from this survey include:

- Student mode split, grades K-12
- Trip distance by mode by trip purpose
- Ratio of walking/bicycling work trips to utilitarian trips
- Ratio of walking/bicycling work trips to social/recreational trips

Several of these variables are trip type multipliers that provide an indirect method of estimating the number of walking and bicycling trips made for other reasons, such as shopping and running errands. NHTS 2009 data indicates that for every bicycle work trip, there are

slightly more than two utilitarian bicycle trips made. Although these trips cannot be directly attached to a certain group of people (not all of the utilitarian bicycling trips are made by people who bicycle to work) these multipliers allow a high percentage of the community's walking and bicycling activity to be captured in an annual estimate.

The Safe Routes to School Baseline Data Report (2010) was used to determine the distance of school trips using parents' estimate of distance as well as the frequency of carpooling for trip replacement.

Disclaimer

As with any modeling projection, the accuracy of the result is dependent on the accuracy of the input data and other assumptions. Effort was made to collect the best data possible for input to the model, but in many cases national data was used where local data points were unavailable. Examples of information that could improve the accuracy of this exercise include the detailed results of local Safe Routes to School parent and student surveys, a regional household travel survey, and a student travel survey of college students.

Existing Walking and Bicycling Trips

Table 4-3 shows the results of the walking and bicycling demand models, which estimate that more than 18,000 walking trips occur in Aiken County each day, while over 2,000 bicycling trips occur each day.

Based on the model assumptions, the majority of trips are social/recreational trips, followed by non-work utilitarian trips, which include trips for medical/dental services, shopping/ errands, family personal business, obligations, transporting someone, meals, and other trips.

Figure 4-6 and Figure 4-7 on the following pages show the distribution of mode split for walking and bicycling, respectively. They show the data by Census tract, rather than aggregated by county, and therefore display slightly different mode splits than the average mode split for the county. The dots on the map indicate the trip generation based on the analysis shown in Table 4-3. Several tracts have relatively high rates of walking and/or bicycling, but most of these have low population numbers and therefore do not generate a substantial number of walking or bicycling trips.

Table 4-3. Model Estimate of Current Walking and Bicycling Trips

	Walking	Bicycling
Commute Trips		
Walking/bicycling commuters [1]	713	115
Weekday walking/bicycling trips	1,425	230
School Trips		
K-12 walking/bicycling commuters [2]	2,013	128
Weekday K-12 walking/ bicycling trips	4,026	256
College Trips		
College walking/bicycling commuters [3]	98	16
Weekday walking/bicycling college trips	196	32
Daily adult walking/bicycling commute trips [4]	1,621	262
Utilitarian Trips		
Daily walking/bicycling utilitarian trips [5]	5,698	410
Social/Recreational Trips		
Daily walking/bicycling social/ recreational trips [6]	6,834	1,204
Total Current Daily Walking/ Bicycling Trips	18,179	2,132

1 Employed population multiplied by ACS commute mode split.
2 School children population multiplied by NHTS 2009 mode split for school/daycare/religious trips by individuals age 5-18.
3 Assumes same mode split as employed population.
4 Number of walking/bicycling commute trips plus number of walking/bicycling college trips, respectively.
5 Utilitarian walking/bicycling trips multiplied by ratio of utilitarian to work trips from NHTS 2009 (4.92 utilitarian walking trips to walking commute trips and 2.19 utilitarian bicycle trips to bicycle commute trips). Weekly trips distributed over entire week (vs. commute trips over 5 days).
6 Social/recreational walking/bicycling trips multiplied by ratio of social/recreational trips to work trips from NHTS 2009 (5.90 social/recreational walking trips to walking commute trips and 6.45 social/recreational bicycling trips to bicycling commute trips). Weekly trips distributed over entire week (vs. commute trips over 5 days).

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Figure 4-6: Aiken County Pedestrian Demand and Trip Generation

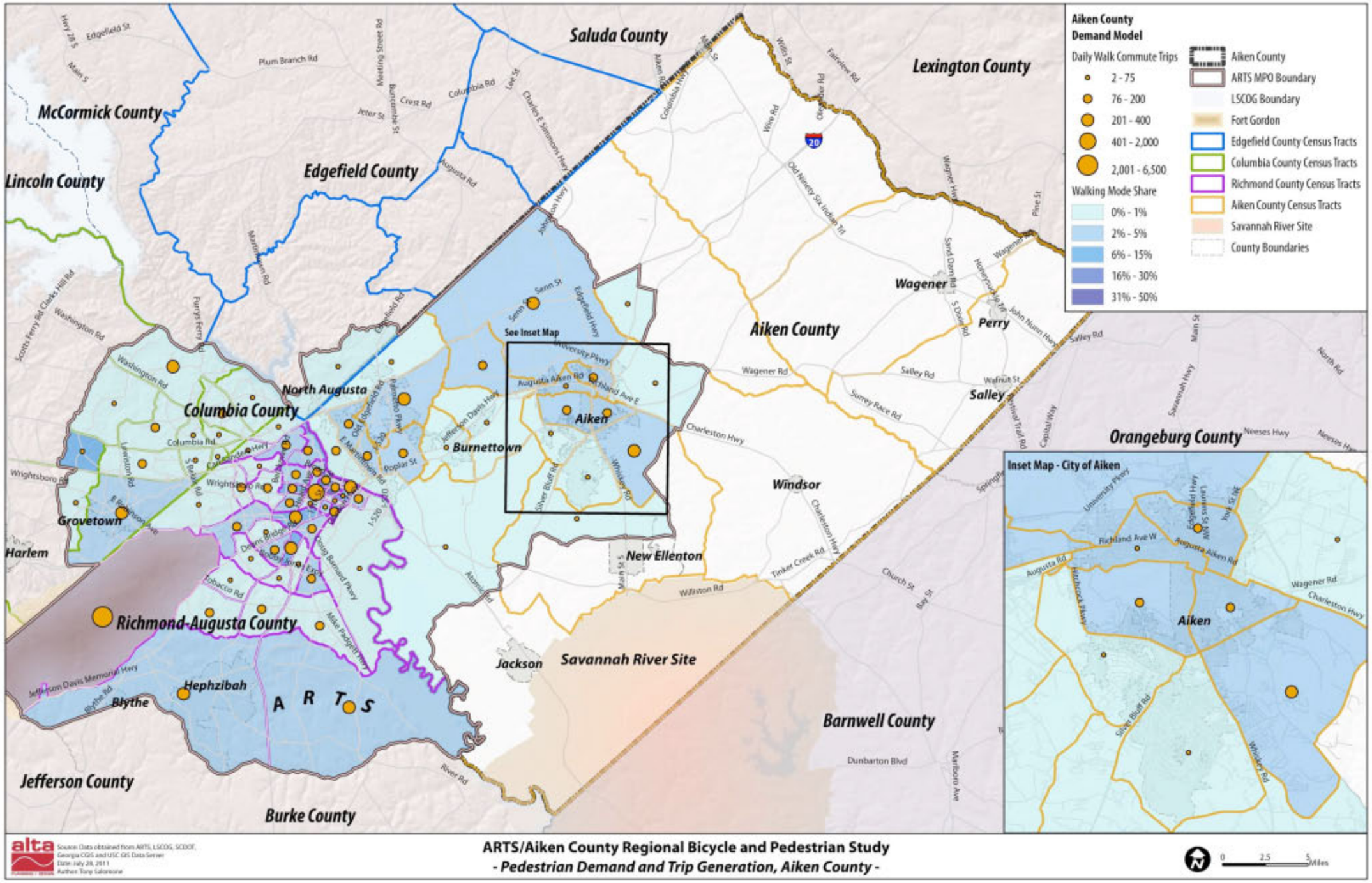
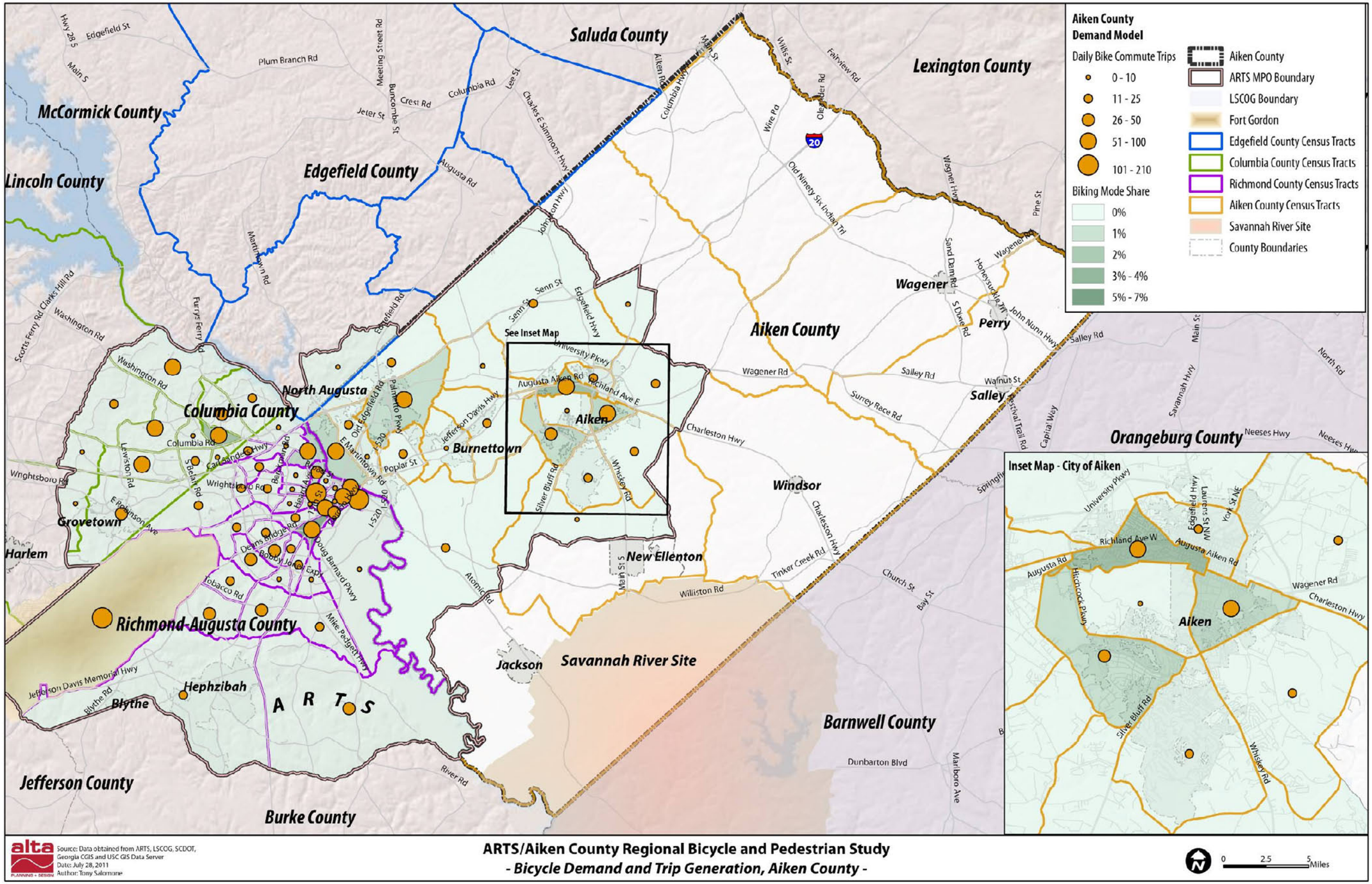


Figure 4-7: Aiken County Pedestrian Demand and Trip Generation



Trip Replacement

Some of these daily walking and bicycling trips are essential trips that individuals would have to take regardless of whether they can walk or bicycle for the trip. If walking or bicycling had not been an option for commute, school/college, and utilitarian trips, some of these trips would have been made by driving. The model estimates that the proportion of these trips that would have been made by driving is equivalent to the drive alone mode split for each county.

To estimate the total distance walking and bicycling trips taken by Aiken County residents replace vehicular trips, the model applies trip distance information for walking and bicycling trips by trip purpose from NHTS 2009.

Shown in Table 4-4, the model estimates that the estimated that more than 3.5 million commute, school, and other utilitarian walking and bicycling trips each year replace more than 1.1 million vehicle trips, removing more than 1.1 million vehicle miles traveled each year.

Table 4-4. Current Walking and Bicycling Trip Replacement

	Walking	Bicycling
Commute Trips		
Weekday vehicle trips replaced [1]	1,179	190
Weekday miles walked/biked [2]	790	674
School Trips		
Weekday vehicle trips reduced [3]	1,166	74
Weekday miles walked/biked [4]	895	57
College Trips		
Weekday vehicle trips reduced [5]	162	26
Weekday miles walked/biked [6]	91	39
Utilitarian Trips		
Daily vehicle trips reduced [7]	1,341	216
Daily miles walked/biked [8]	894	410
Yearly Results		
Yearly walking/bicycling trips	3,279,011	265,913
Yearly vehicle trips reduced	1,057,356	98,672
Yearly miles walked/biked	725,658	344,164

1 Trips multiplied by drive alone commute trip ratio to determine automobile trips replaced by walking/bicycling trips.
2 Number of vehicle trips reduced multiplied by average walking/bicycling work trip length (NHTS 2009).
3 Trips multiplied by school commute drive alone proportion to determine automobile trips replaced by walking/bicycling trips (NHTS 2009).
4 Number of vehicle trips reduced multiplied by average trip length to/from school (SRTS 2010).
5 Trips multiplied by drive alone trips to determine automobile trips replaced by walking/bicycling trips.
6 Number of vehicle trips reduced multiplied by average walking/bicycling school/daycare/religious trip length (NHTS 2009).
7 Number of daily utilitarian trips multiplied by drive alone trips.
8 Number of vehicle trips reduced multiplied by average utilitarian walking/bicycling trip length (NHTS 2009; does not include work or home trips).

Current Benefits

To the extent that bicycling and walking trips replace single-occupancy vehicle trips, they reduce emissions and have tangible economic impacts by reducing traffic congestion, crashes, and maintenance costs. In addition, the reduced need to own and operate a vehicle saves families money.

The South Carolina Department of Health and Environmental Control and the South Carolina Coalition for Obesity Prevention Efforts estimated that in 2003, South Carolina's obesity-attributable medical expenditures were $1.06 billion.[1] Development of a bicycle and pedestrian network, as well as support facilities and encouragement programs such as Safe Routes to School will encourage people to become active. Health care benefits are not calculated for the current condition, because people who already walk and bicycle are people who would likely have found an alternative avenue for physical activity. Health benefits are therefore calculated in the future estimate only. Other current benefits are shown in Table 4-5.

1 http://www.scdhec.gov/health/chcdp/obesity/docs/StatePlanComplete.pdf

Table 4-5. Benefits of Current Walking and Bicycling Trips

Benefits from Walking and Bicycling Trips	
Yearly vehicle miles reduced	1,069,821
Air Quality Reduction[2]	
Hydro-carbons (lbs/year)	3,208
Particulate Matter (lbs/year)	24
Nitrous Oxides (lbs/year)	2,241
Carbon Monoxide (lbs/year)	29,246
Carbon Dioxide (lbs/year)	870,306
Economic Benefits of Air Quality	
Particulate Matter	$2,001
Nitrous Oxides	$4,481
Carbon Dioxide	$14,922
Reduced External Costs of Vehicle Travel (Thousands)	
Traffic Congestion[1]	$202,196
Vehicle Crashes	$1,453,887
Roadway Maintenance Costs[2]	$150
Household Transportation Savings[3] (Thousands)	
Reduction in Household Transportation Spending	$535
Total Current Benefits for Walking and Bicycling (Thousands)	$1,659,789

1 EPA report 420-F-05-022 "Emission Facts: Average Annual Emissions and Fuel Consumption for Gasoline-Fueled Passenger Cars and Light Trucks." 2005 and NHTSA Corporate Average Fuel Economy for MY 2011 Passenger Cars and Light Trucks, Table VIII-5 (http://www.nhtsa.dot.gov/portal/site/nhtsa/ menuitem.d0b5a45b55bfbe582f57529 cdba046a0/).
2 Crashes vs. Congestion – What's the Cost to Society?" http://www.aaanewsroom.net/Assets/Files/20083591910.CrashesVsCongestionFullRe
3 Kitamura, R., Zhao, H., and Gubby, A. R. (1989). Development of a Pavement Maintenance Cost Allocation Model. Institute of Transportation Studies – University of California, Davis (http://pubs.its.ucdavis.edu/publication_detail.php?id=19). $0.08/mile (1989), adjusted to 2010 dollars using the Bureau of Labor Statistics Inflation Calculator
4 IRS operational standard mileage rates for 2010 http://www.irs.gov/newsroom/article/0,,id=216048,00.html

Potential Future Walking and Bicycling Trips

Estimating future walking and bicycling trips requires additional assumptions regarding ARTS's future population and anticipated commuting patterns in 2025 (the latest year for which estimates are available). Future population predictions were determined by ARTS staff for the 2035 Long Range Transportation Plan (LRTP) and incorporated into the regional demand model by the Georgia Department of Transportation.

The LRTP uses Transportation Analysis Zones (TAZ's) to estimate the 2035 population and employment numbers from 2006 numbers. Because more recent Census (ACS) data were used in the current model, the LRTP estimate was used to determine the change in population and employment in the parts of the counties that make up the ARTS region.

The LRTP estimates that 2006 employment in Aiken County was 36,934 jobs. The Plan projects that there will be 51,160 jobs in 2035, representing a 38.5 percent increase in regional employment since 2006.

Table 4-6 shows the projected future demographics used in the future analysis. The population of school students (K-12) and college/university students was assumed to be the same proportion of the total population for each county as in the 2004-2009 estimate.

The walking and bicycling mode shares are likely to increase in the future because the addition of new facilities and enhancements to the existing system. The model assumes that Aiken County can increase the walking share above the 1.86 percent state average to four percent. For bicycling, the average bicycling mode share for Bronze-level Bicycle Friendly Communities (BFC's) is 1.1 percent. The analysis assumes that Aiken County can achieve these levels by 2035 (and likely much sooner).

The results of the model for future walking and bicycling trips are shown in Table 4-7.

Table 4-6. Projected Future (2035) Demographics

	Number	Change from 2006 Population	Source
Population	177,498	48.7%	2035 Long Range Transportation Plan
Employed Population	71,633	38.5%	2035 Long Range Transportation Plan
School population, K-12	28,317	16.0%	Assumes same percent as from ACS 2009 estimate
College student population	10,553	5.9%	Assumes same as 2009 ACS estimate

Table 4-7. Model Estimate of Future 2035 Walking and Bicycling Trips

	Walking	Bicycling
Commute Trips		
Walking/bicycling commuters [1]	2,865	788
Weekday walking/bicycling trips	5,731	1,576
School Trips		
K-12 walking/bicycling commuters [2]	2,994	311
Weekday K-12 walking/ bicycling trips	5,988	623
College Trips		
College walking/bicycling commuters [3]	422	116
Weekday walking/bicycling college trips	844	232
Daily adult walking/bicycling commute trips [4]	6,575	1,808
Utilitarian Trips		
Daily walking/bicycling utilitarian trips [5]	23,112	2,832
Social/Recreational Trips		
Daily walking/bicycling social/ recreational trips [6]	27,721	8,329
Total Future Daily Walking/ Bicycling Trips	**63,396**	**13,589**
Total Current Daily Walking/ Bicycling Trips	**18,197**	**2,132**
Percent Change	**248.7%**	**537.5%**

1 Population and employment estimates for 2035 based on ARTS 2035 Long Range Transportation Plan and multiplied by assumed future mode split.
2 School children population multiplied by NHTS 2009 mode split for school/daycare/religious trips.
3 Assumes same mode split as employed population.
4 Number of walking/bicycling commute trips plus number of walking/bicycling college trips.
5 Utilitarian walking/bicycling trips multiplied by ratio of utilitarian to work trips (NHTS). Weekly trips distributed over entire week (vs. commute trips over 5 days).
6 Social/recreational walking/bicycling trips multiplied by ratio of social/recreational to work trips (NHTS). Weekly trips distributed over entire week (vs. commute trips over 5 days).

Future Benefits

The trip replacement factors remain the same as in the model of current trips. Since bicycling is among the most popular forms of recreational activity in the U.S.,[1] when bicycling is available as a daily mode of transportation, substantial health benefits result. The health benefit of bicycling for exercise can reduce the employer cost of spending on health care

1 Almost 80 million people walking and 36 million people bicycling for recreation or exercise nationally, and 27.3 percent of the population over 16 bicycling at least once over the summer. (National Sporting Goods Association survey, 2003)

by as much as $514 a year, which provides a financial incentive to businesses that provide health coverage to their employees.[2] Table 4-8 shows the air quality benefits of the future projected walking and bicycling trips in Aiken County.

2 Feifei, W., McDonald, T., Champagne, L.J., and Edington, D.W. (2004). Relationship of Body Mass Index and Physical Activity to Health Care Costs Among Employees. Journal of Occupational and Environmental Medicine. 46(5):428-436

Table 4-8. Benefits of Future Walking and Bicycling Trips

	Benefits from Walking and Bicycling Trips
Yearly vehicle miles reduced	8,730,893
Air Quality Reduction [1]	
Hydrocarbons (lbs/year)	26,178
Particulate Matter (lbs /year)	194
Nitrous Oxides (lbs /year)	18,286
Carbon Monoxide (lbs /year)	238,679
Carbon Dioxide (lbs /year)	7,102,632
Economic Benefits of Air Quality (Thousands)	
Particulate Matter	$2.0
Nitrous Oxides	$11,865,283
Carbon Dioxide	$122
Reduced External Costs of Vehicle Travel (Thousands)	
Traffic Congestion [2]	$1,650,139
Vehicle Crashes	$11,865,283
Roadway Maintenance Costs [3]	$1,222
Household Transportation Savings (Thousands) [4]	
Reduction in HH trans. spending	$4,365
Reduced Healthcare Costs (Thousands)	
New adult walkers/bikers [5]	3,250
New student walkers/bikers	1,164
Healthcare savings of active adults [6]	$467
Healthcare savings of active children	$80
Total (Thousands)	**$25,386,964**

1 Population and employment estimates for 2035 based on ARTS 2035 Long Range Transportation Plan and multiplied by assumed future mode split.
2 School children population multiplied by NHTS 2009 mode split for school/daycare/religious trips.
3 Assumes same mode split as employed population.
4 Number of walking/bicycling commute trips plus number of walking/bicycling college trips.
5 Utilitarian walking/bicycling trips multiplied by ratio of utilitarian to work trips (NHTS). Weekly trips distributed over entire week (vs. commute trips over 5 days).
6 Social/recreational walking/bicycling trips multiplied by ratio of social/recreational to work trips (NHTS). Weekly trips distributed over entire week (vs. commute trips over 5 days).

Additional Benefits of Bicycling and Walking

Bicycling and walking are low-cost and effective means of transportation that are non-polluting, energy-efficient, versatile, healthy, and fun. Everyone is a pedestrian at some point, whether walking to a parked car, taking a lunch break, or accessing transit. In addition, bicycles offer low-cost mobility to the non-driving public. Bicycling and walking as a means of transportation has been growing in popularity as many communities work to create more balanced transportation systems. In addition, more people are willing to cycle more frequently if better bicycle facilities are provided. [1]

In addition to the tangible economic benefits estimated in previous sections of this memorandum, bicycling and walking have many other benefits that are challenging to quantify, but some communities or organizations have studied.

- Walking and bicycling support job creation and create economic benefits for a region:
  - o The League of American Bicyclists reports that bicycling makes up $133 billion of the US economy, funding 1.1 million jobs.[2] The League also estimates bicycle-related trips generate another $47 billion in tourism activity.
  - o Many communities have enjoyed a high return on their investment in bicycling: the Outer Banks of North Carolina spent $6.7 million to improve local bicycle facilities, and reaped the benefit of $60 million of annual economic activity associated with bicycling.[3]
  - o Multiple studies show that walkable, bikeable neighborhoods are more liveable and attractive, increasing home values,[4] resulting in increased wealth for individuals and additional property tax revenue.
  - o Walkable, bikeable communities attract the young creative class,[5] which can help cities gain a competitive edge and diversify economic base.
  - o Patrons who walk and bicycle to local stores have been found to spend more money to visit local businesses than patrons who drive.[6]
- By replacing short car trips, bicycling and walking (especially when combined with transit) can help middle-class families defray rising transportation costs. Families that drive less spend 10 percent of their income on transportation, compared to 19 percent for households with heavy car use,[7] freeing additional income for local goods and services.
- Increased bicycling leads to a reduction in crashes. Concerns about safety have historically been the single greatest reason people do not commute by bicycle; a Safe Routes to School survey in 2004 found that 30 percent of parents consider traffic-related danger to be a barrier to allowing their children to walk or bike to school. In a community where twice as many people walk, an individual walking has a 66 percent reduced risk of being injured by a motorist.[8]

1 Pucher, J., Dill, J. and Handy, S. (2010). Infrastructure, programs, and policies to increase bicycling: An international review. Preventative Medicine 50:S106-S125.
2 Flusche, Darren for the League of American Bicyclists. (2009). The Economic Benefits of Bicycle Infrastructure Investments.
3 N.C. Department of Transportation, Division of Bicycle and Pedestrian Transportation. (No Date). The Economic Impact of Investments in Bicycle Facilities. atfiles.org/files/pdf/NCbikeinvest.pdf
4 Cortright, Joe for CEOs for Cities. (2009). Walking the Walk: How Walkability Raises Home Values in U.S. Cities.
5 Cortright, Joe for CEOs for Cities. (2007). Portland's Green Dividend.
6 The Clean Air Partnership. (2009). Bike Lanes, On-Street Parking and Business: A Study of Bloor Street in Toronto's Annex Neighborhood.
7 Center for Neighborhood Technology. (2005). Driven to Spend: Pumping Dollars out of Our Households and Communities.
8 barrier to allowing their children to walk or bike to school. In a community where twice as many people walk, an individual walking has a 66 percent reduced risk of being injured by a motorist.

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Bicycle and Pedestrian Counts

To fully comprehend existing conditions in Aiken County, it is important to understand the number of non-motorized users and the patterns in which they interact with the existing roadway network. To do so, the Bicycle and Pedestrian Plan Project Steering Committee and volunteers performed a comprehensive count of bicyclists and pedestrians at 15[1] locations in Aiken County during September 2011. The effort included:

- Careful identification of count locations
- A bicycle and pedestrian count form
- One training session
- One weekday and one weekend count at each location
- Data synthesis and analysis

Bicycle and pedestrian counting is important for several reasons. The U.S. Census reports that in Aiken County bicycle mode share is less than 1 percent and pedestrian mode share is less than 2 percent, as shown in Table 4-9. While this information can be useful for comparative analysis, the data is very limited. The Census measures commute to work trips only, which account for less than 15 percent of all trips taken in the U.S. By conducting its own bicycle and pedestrian counts, Aiken County can account for trips taken by bicycling and walking that are not commute to work trips, as well as better understand where bicycling and walking is occurring. Counts are also helpful to analyze existing bikeway/walkway facility use and where future facilities may be justified

Aiken County's bicycle and pedestrian counts provide a valuable snapshot for the level of bicycling and walking that occurs. This serves as baseline data for future comparison and evaluation of trends. Analysis of the counts and count location characteristics additionally provides useful information regarding the relationship between bicycle ridership levels and the bicycling environment.

Process

Weekday and weekend tallies at the 15 locations were conducted during a two week period between September 10, 2011 and September 24, 2011. The weekday morning count was conducted from 7:00 a.m. to 9:00 a.m. and the weekend count from 10:00 a.m. to noon. The morning rather than the evening peak period was chosen as the focus because of the variety of trips, such as school-commutes and morning exercise, as well as work-related commutes.

The count times and overall guidelines were developed in conjunction with the National Bicycle and Pedestrian Documentation Project (NBPDP), a joint collaboration between Alta Planning + Design and the Institute of Transportation Engineers. The NBPDP guidelines will be used for all subsequent counts within Aiken County. All data from the counts will be forwarded to the NBPDP for further analysis and to add to the growing collection of consistent information about people who are bicycling and walking in different parts of the country.

Screenline counting is the methodology that is recommended by NBPDP and was determined to be most appropriate for the ARTS Bicycle and Pedestrian Plan Update.

Table 4-9: Commute Mode Share in ARTS Counties

	Aiken	Columbia	Edgefield	Richmond	All Counties	Georgia	South Carolina
Drive Alone	82.8%	85.0%	79.8%	77.3%	80.6%	89.7%	92.2%
Walk	1.4%	0.8%	0.6%	6.0%	3.33%	1.7%	1.9%
Bicycle	0.2%	0.2%	0.0%	0.4%	0.3%	0.2%	0.3%

Source: ACS 2005-2009 Five-Year Estimates

Note: analysis excludes areas of counties outside the ARTS boundary.

1 Counts were taken at 29 locations, but due to errors, six count locations are excluded from this analysis. See page 29 for details.

Screenline counts are primarily used to identify general trends in volumes, and to see how demographics, land use, and other factors influence walking and bicycling. During screenline counts, one volunteer identifies the number of bicyclists and pedestrians that pass through a single, imaginary line running across the street, thereby capturing all cyclists and pedestrians traveling in either direction along a single corridor. A person who passes by a point more than once is counted each time they pass by the point.

Count Locations

The National Bicycle and Pedestrian Documentation project recommends one count per 15,000 of population. This is considered a reasonable balance between obtaining representative counts and budget limitations. For Aiken County, NBPD methodology results in a recommendation of 11 count locations. Based on the availability of staff and volunteers, the Aiken County count includes a total of 17 locations (or screenlines), 15 of which resulted in complete count data.

Criteria used to select count locations include:

- Pedestrian and bicycle activity areas or corridors (downtowns, near schools, parks, etc.)
- Representative locations in urban, suburban, and rural locations
- Key corridors that can be used to gauge the impacts of future improvements
- Locations where counts have been conducted historically
- Locations where there are on-going counts being conducted by other agencies through a variety of means, including video taping
- Gaps and pinch points for bicyclists and pedestrians (potential improvement areas)
- Locations where bicycle and pedestrian collision numbers are high
- Select locations that meet as many of the criteria as possible.

For both bicyclists and pedestrians, counters noted if the person was male or female.

Additionally, the Aiken County Bicycle and Pedestrian Count Form recorded the following information:

- Name of Counter
- Corridor
- Date
- Start and end time
- Weather conditions
- Existing facilities

Results

The combined total count of bicyclists for both count days was 248 (Table 4-10) and the combined total count of pedestrians for both count days was 757 (Table 4-11). While this number provides an important snapshot of non-motorized transportation in Aiken County, it does not provide a comprehensive count of all bicyclists and pedestrians. Instead, the data offers clues as to where and when the community is bicycling and walking. See Appendix G for detailed count results by location.

Table 4-10: Bicycle Count Results

Characteristic	Total Count
Total Bicyclists Combined	248
Total Bicyclists Weekday	67
Total Bicyclists Weekend Day	181
Total Female Bicyclists (combined)	67
Total Male Bicyclists (combined)	181

Table 4-11: Pedestrian Count Results

Characteristic	Total Count
Total Pedestrians Combined	757
Total Pedestrians Weekday	355
Total Pedestrians Weekend Day	402
Total Female Pedestrians (combined)	371
Total Male Pedestrians (combined)	386

SCREENLINE COUNT FORM

ARTS/Aiken County Bicycle and Pedestrian Plan Update

Name: _____ Corridor: _____ @ _____

Date: _____ Start Time: _____ End Time: _____

Weather: _____ Existing Facilities: _____

Please fill in your name, count location, date, time period, and weather conditions (fair, rainy, very cold). For existing facilities, list any bicycle or pedestrian specific features such as sidewalks, bike lanes, multi-use trail, or paved shoulder. Count all bicyclists and pedestrians crossing your screen line under the appropriate categories.

- Count for two hours in 15 minute increments.
- Count bicyclists who ride on the sidewalk.
- Count the number of people on the bicycle, not the number of bicycles.
- Pedestrians include people in wheelchairs or others using assistive devices, children in strollers, etc.
- People using equipment such as skateboards or rollerblades should be included as "Others."

	Bicyclists		Pedestrians		Others
Time Increments	Female	Male	Female	Male	
00-:15					
15-:30					
30-:45					
45-1:00					
1:00-1:15					
1:15-1:30					
1:30-1:45					
1:45-2:00					
Total					

Promptly return form to: Marya Moultrie, Augusta-Richmond County Planning Commission
525 Telfair St.
Augusta, GA 30901
Phone: 706-821-1807
Scan and send by e-mail to: mmoultrie@augustaga.gov

ARTS/Aiken County's Bicycle and Pedestrian Plan Update Count Form captured bicycle and pedestrian gender

On the weekday count, two locations counted zero bicyclists and on the weekend count, three locations counted zero bicyclists. No locations on the weekday or weekend counts had zero pedestrians. The highest numbers of bicycle and pedestrian counts and the count averages are described below.

- On the weekday count, the highest number of bicyclists recorded at a location was 18 and the highest number of pedestrians recorded was 99.
- On a weekend, the highest number of bicyclists counted at a location was 116 and the highest number of pedestrians counted was 117.
- The average weekday count was 4 bicyclists and 24 pedestrians, and the median weekday count was 1 bicyclist and 11 pedestrians.
- The average weekend count was 12 bicyclists and 27 pedestrians, and the median weekend count was 5 bicyclists and 11 pedestrians.

Figure 4-8 and Figure 4-9 show each of the bicycle and pedestrian count locations and include icons that vertically represent the total number of bicyclists counted at each location on the weekend (yellow) and the weekday (purple). A geographic analysis of count data is discussed in the following section.

Count Errors

Human error is a common issue in all studies. Two count locations of the Aiken County bicycle and pedestrian count are excluded from the analysis due to errors. Both the Two Notch at Marie Drive and the Marie Drive at Two Notch locations are excluded because volunteers only attended the weekend count. The count results for the excluded count locations are shown in Table 4-12.

Table 4-12: Exclude Count Location Results

Location	Period	Total Bicyclists	Total Pedestrians
Two Notch at Marie Drive	Weekend	7	11
Marie Drive at Two Notch	Weekend	8	12

Count Recommendations

This Plan recommends that bicycle pedestrian counts occur annually in Aiken County. The data collected during the 2011 count serves as baseline data for understanding trends overtime and allows for comparative analysis in future years. Aiken County should continue to conduct counts at 15 or more locations each year, and provide analysis of the data to determine key findings. Additionally, the number of counts on downtown streets, such as Park Avenue and Laurens Street in Aiken and Georgia Avenue in North Augusta, should be increased. Municipalities can use count data in downtown commercial districts to quantify "foot traffic" and attract retailers.

Though human error is always possible, the potential for errors during counts can be mitigated by:

- Requiring all volunteers to attend a brief training session prior to the counts
- Providing a map to all volunteers that clearly identifies each count location
- Distributing a list of all count locations, the screenline of each location, and volunteer counter assigned to each location
- Communicating with volunteers prior to the counts to ensure all questions are answered

Key Findings

The results of the Aiken County bicycle and pedestrian count show that:

- The majority of the bicyclists counted were male (73%).
- Bicycling is more common on the weekend than weekdays.
- The most popular areas for bicycling are Greenway at Pisgah (North Augusta) and the intersection of Hampton Avenue and York Street (Aiken).
- There was a relatively equal amount of female pedestrians (49%) and male pedestrians (51%)
- There were slightly more pedestrians walking on the weekend (53%) than during the week (47%).
- The most popular areas for walking are Laurens at Richland Avenue (Aiken), Greenway at Pisgah (North Augusta), and Hampton Avenue at York Street (Aiken).

Based on the count, Aiken County's ratio of male cyclists to female is just under 3:1. This ratio is consistent with count data and anecdotal evidence from cities throughout the country. While bike-friendly cities in Northern Europe have an even split between men and women (in some cases more women cyclists than men), in North American cities with limited bicycling infrastructure, the number of men is higher in all cases. In cities that strive to create a fully-integrated network of bike facilities such as Portland, Oregon or Montreal, the number of female cyclists has inched closer to male cyclists but continues to be approximately half of the gross number of men. The expectation in Aiken County is that the ratio of men to women will, in time, begin to balance out as the number of less traffic-tolerant female cyclists increase as improvements to bicycle infrastructure along important corridors continues.

Aiken County's ratio of male pedestrians to female pedestrians is approximately 1:1, which means about the same number of males as females are walking. This suggests that there is less of a barrier to walking for females than with bicycling.

Figure 4-8: Aiken County Bicycle Counts

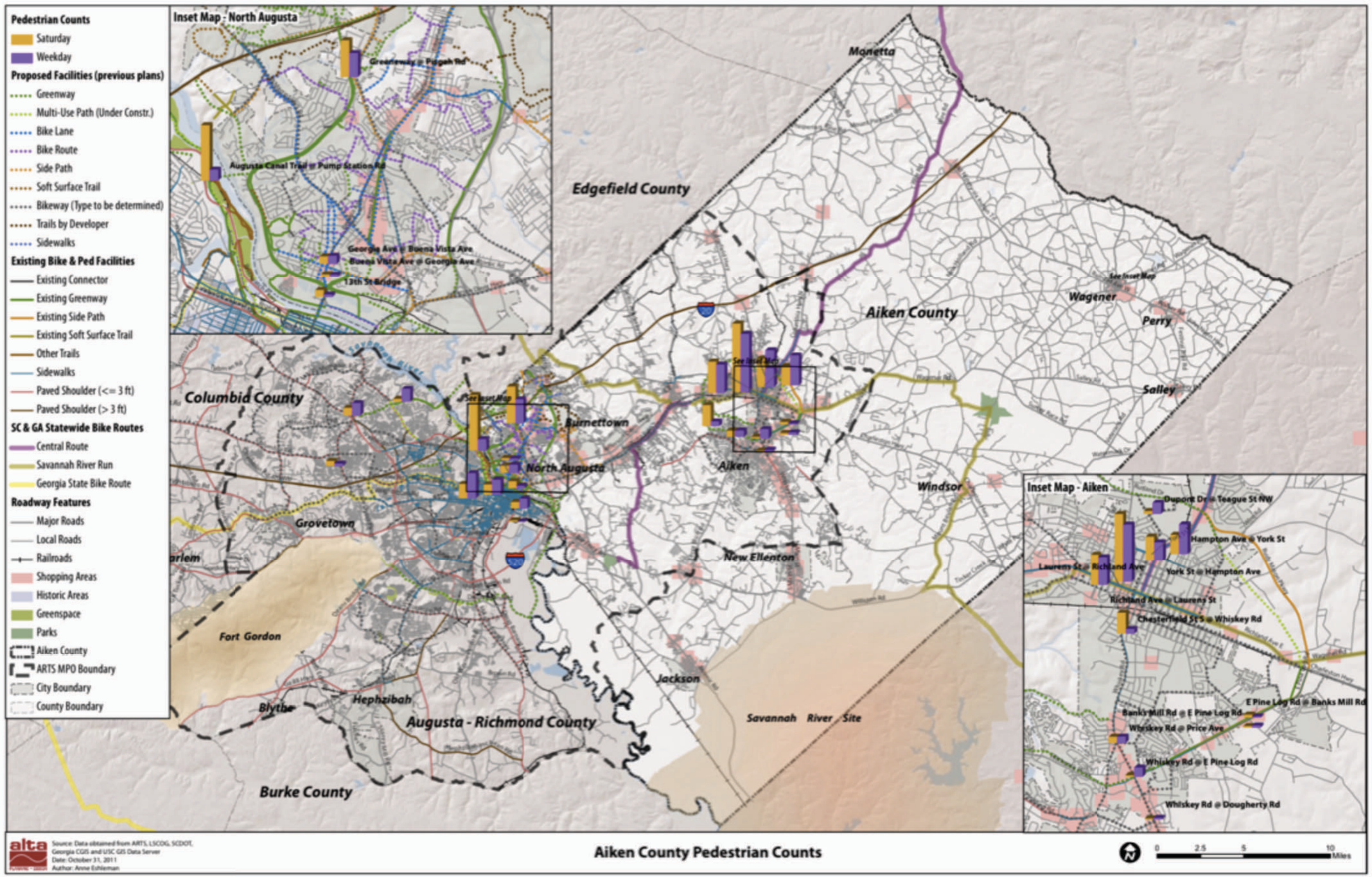
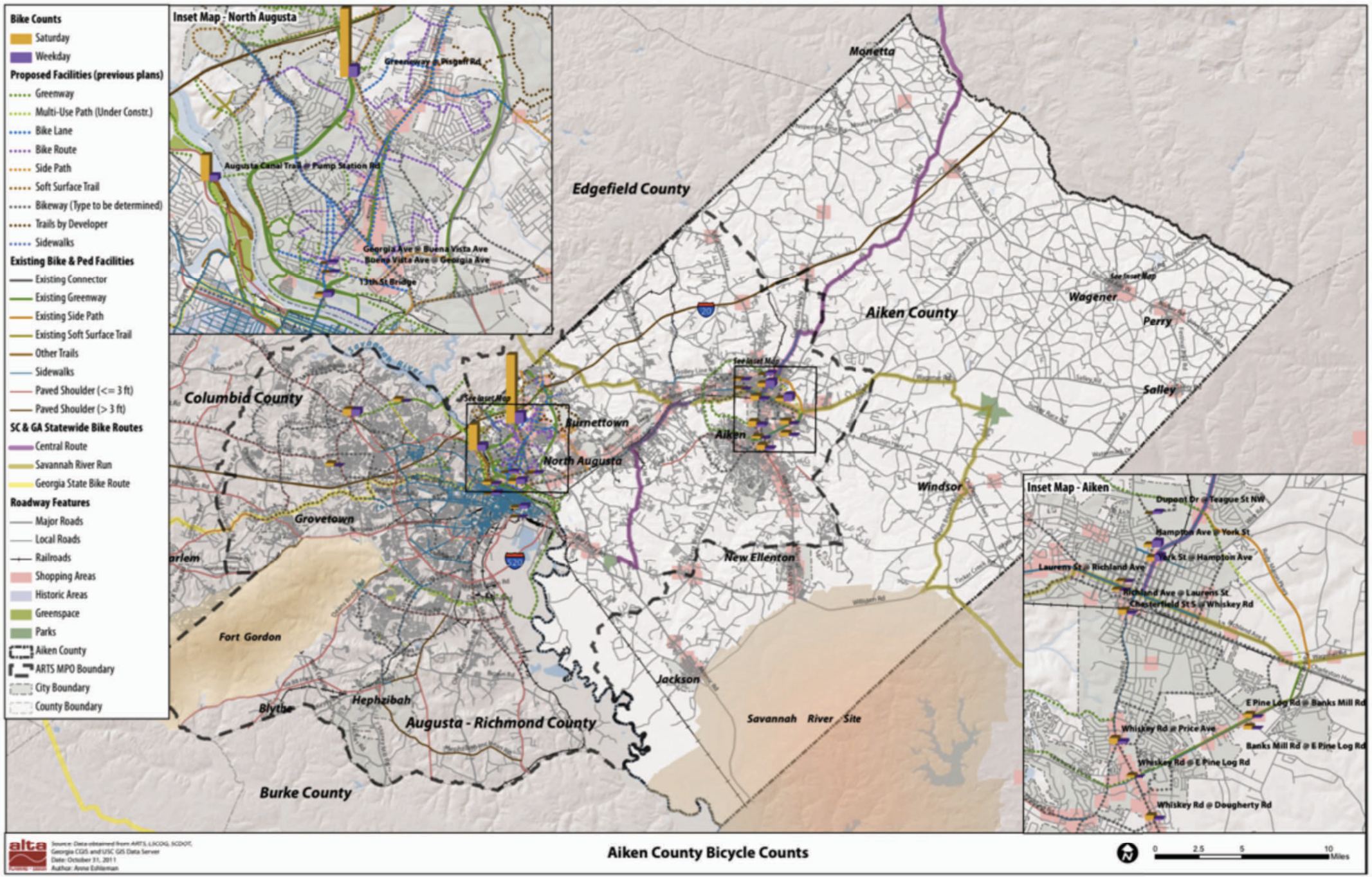


Figure 4-9: Aiken County Pedestrian Counts

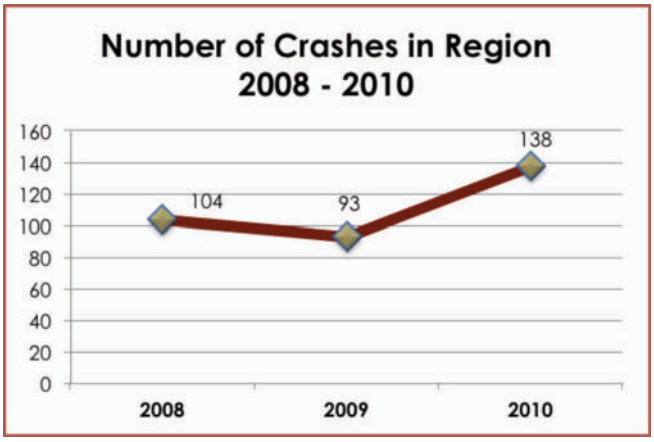


Bicycle and Pedestrian Crash Analysis Overview

Safety for pedestrians and bicyclists is a major concern for citizens of Aiken County and a main priority in developing a successful Bicycle and Pedestrian Master Plan. Just over the last year, the region has witnessed a number of alarming fatalities. These recent events indicate a clear safety problem for the region to address, and a Safety Analysis was undertaken to identify trends for Aiken County so that clear and decisive action can be taken to make Aiken safer for bicyclists and pedestrians alike.

Crash data was collected from the South Carolina Department of Public Safety for 2008, 2009, and 2010 to provide the needed insight into crashes in the region. As shown in Table 4-13, crashes within the region are on the rise after a minor decrease in 2009, with 138 total crashes reported in 2010 alone.

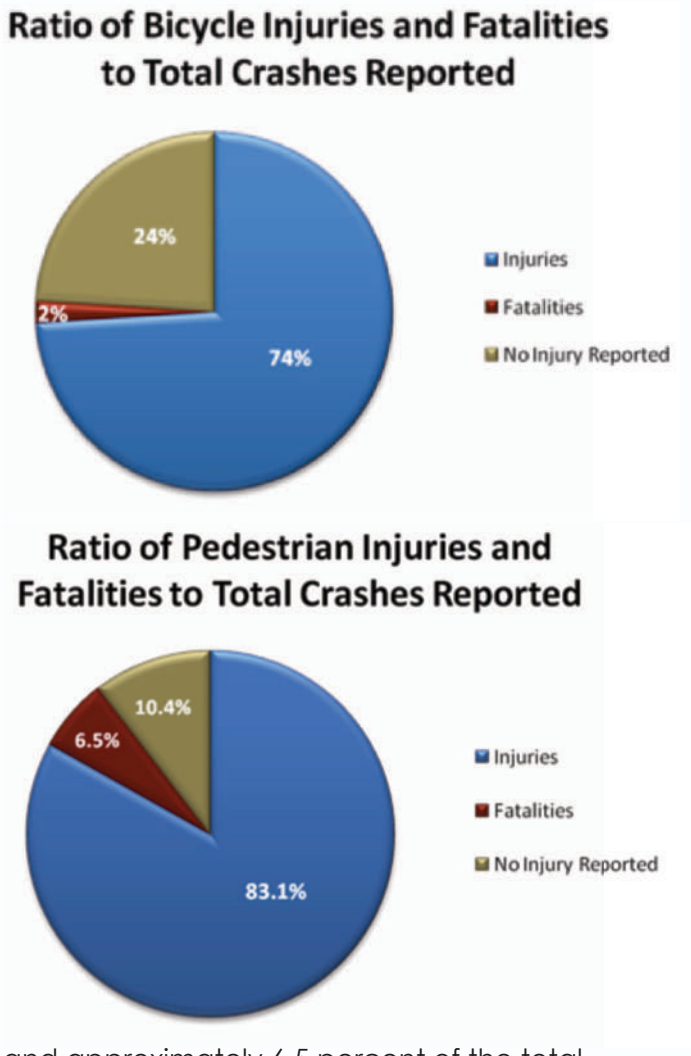
Table 4-13: Number of Crashes in the ARTS Region, 2008-2010



Over this three-year period, there have been 104 bicycle crashes and 231 pedestrian crashes. 38 crashes involving bicyclists and 75 pedestrian crashes have occurred in Aiken County alone, indicating unsafe conditions in need of attention.

A ratio of bicycle and pedestrian crashes within the region, shown in Figure 4-8, indicates that these crashes are resulting in a number of injuries and fatalities. Over 83 percent of the pedestrian crashes reported in the region have resulted in one or more injuries,

Figure 4-8: Ratio of Pedestrian and Bicycle Injuries and Fatalities



and approximately 6.5 percent of the total crashes reported have ended in pedestrian fatalities. The outlook for bicyclists is similar, with 74 percent of bicycle crashes resulting in injury and approximately 2 percent of bicycle crashes resulting in fatalities.

Bicycle and Pedestrian Crash Analysis

The Aiken County crash data provides details on crash types and locations. A few considerations should be noted when reviewing the provided crash data. First, crash data often under-reports the actual occurrence of crashes, especially those crashes that do not result in a serious injury. As such, specific locations identified in the crash analysis may not present all potentially unsafe areas for bicyclists and pedestrians. Local knowledge from bicycle and pedestrian advocacy groups

such as running and cycling clubs should be sought when possible to obtain additional information on unsafe environments.

Secondly, local crash data does not provide details on geographic concentrations of pedestrian or bicycle use and because of this, does not help to comparatively look at safe environments for pedestrians and bicyclists. For instance, although two streets may exhibit the same number of crashes, the level of safety at these two streets may be different depending upon the level of bicycle and pedestrian activity. This can be tested when there is sufficient bicycle and pedestrian count data available. Ironically, areas with greater bike and pedestrian activity are often considered safer than ones without much foot or bike traffic, and crash data does not provide this level of insight. Again, local knowledge should also be sought to supplement crash analyses in order to get a complete picture of the bicycle and pedestrian environment.

Finally, it should be noted that the data provided for this analysis does not contain certain data that can be helpful in identifying recommendations for awareness programs and engineering improvements. Demographic data such as the age of crash victims can be useful in determining how education plays into potential causes of crashes. Younger bicyclists and pedestrians, in particular, are often less observant of safety practices such as looking left, right, left before crossing a roadway, to check for the presence of cars. Detailed information on causes of crashes is also useful determining common types of collisions in a given area that may indicate a need for engineering improvements. As further reporting and analysis is done on bicycle and pedestrian crash data, data needs should be monitored to ensure that measures important within communities in the region are represented in crash data.

Aiken County

Aiken County bicycle and pedestrian crash data from 2008 to 2010 was used for this regional analysis. A summary of crash statistics for Aiken County is provided in Table 4-14. There were a reported 38 bicycle crashes and 75 pedestrian crashes over the three-year period. Crashes were concentrated in the southern portions of the county in the urbanized area. These crashes resulted in 1 bicycle fatality and 6 pedestrian fatalities. Most crashes for bicyclists and pedestrians occurred during dry conditions (92 and 90 percent, respectively). 71 percent of all bicycle crashes occurred during daylight hours and 45 percent of pedestrian crashes occurred during the day. Approximately 40 percent of the pedestrian crashes occurred at night in areas without adequate lighting, resulting in 3 of the total pedestrian fatalities.

There is an overrepresentation of crashes in dark conditions. Though there is typically less walking occurring then, over 50 percent of all pedestrian crashes occurred during non-daylight hours, which suggests a compelling case for addressing this problem in more detail. The primary factor reported in these night pedestrian crashes is pedestrians illegally in the roadway. The one bicycle fatality was reported in 2008; it occurred at night along Urquhart Drive due to a motorist under the influence. Out of the 6 pedestrian fatalities, 4 occurred during night or at dusk, mostly in unlighted areas. Locations for these pedestrian fatalities included Fairview Avenue, Pine Log Road, Edgefield Road, Seymour Drive, Laurens Street, and Belvedere Clearwater Road. The total number of crashes indicates that the following locations contain concentrations of crashes in the county:

1. East Pine Log Road (9 Crashes)
2. Atomic Road (5 Crashes)
3. Richland Avenue (4 Crashes)
4. Whiskey Road (4 Crashes)
5. Belvedere-Clearwater Road (3 Crashes)
6. Hampton Avenue (3 Crashes)
7. Rutland Drive (3 Crashes)

Other locations where more than one crash was identified include Columbia Highway, Dougherty Road, Edgefield Road, Jefferson Davis Highway, Marion Street, Seymour Drive, and South Aiken Boulevard. Figures 4-10 and Figure 4-11 provide maps of bicycle and pedestrian crash locations in Aiken County.

Table 4-14: Aiken County Crash Characteristics

Crash Characteristics	Bicycle Crashes	Pedestrian Crashes	Bike %	Ped %
Total Crashes Reported	38	75	100%	100%
Fatalities	1	6	3%	8%
Injuries (Possible/ Identified)*	35	77	--	--
Not Injured/ Unknown Injury	42	90	--	--
Dry Roadway Conditions	35	68	92%	90%
Wet Roadway Conditions	2	7	5%	9%
Unknown Roadway Conditions	1	2	3%	3%
Daytime Crashes	27	34	71%	45%
Nighttime Crashes – Lighted	5	10	13%	13%
Nighttime Crashes – Not Lighted/ Unspecified	3	30	8%	40%
Unspecified Lighting Conditions	3	1	8%	1%

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Figure 4-10: Aiken County Bicycle Crash Loctions

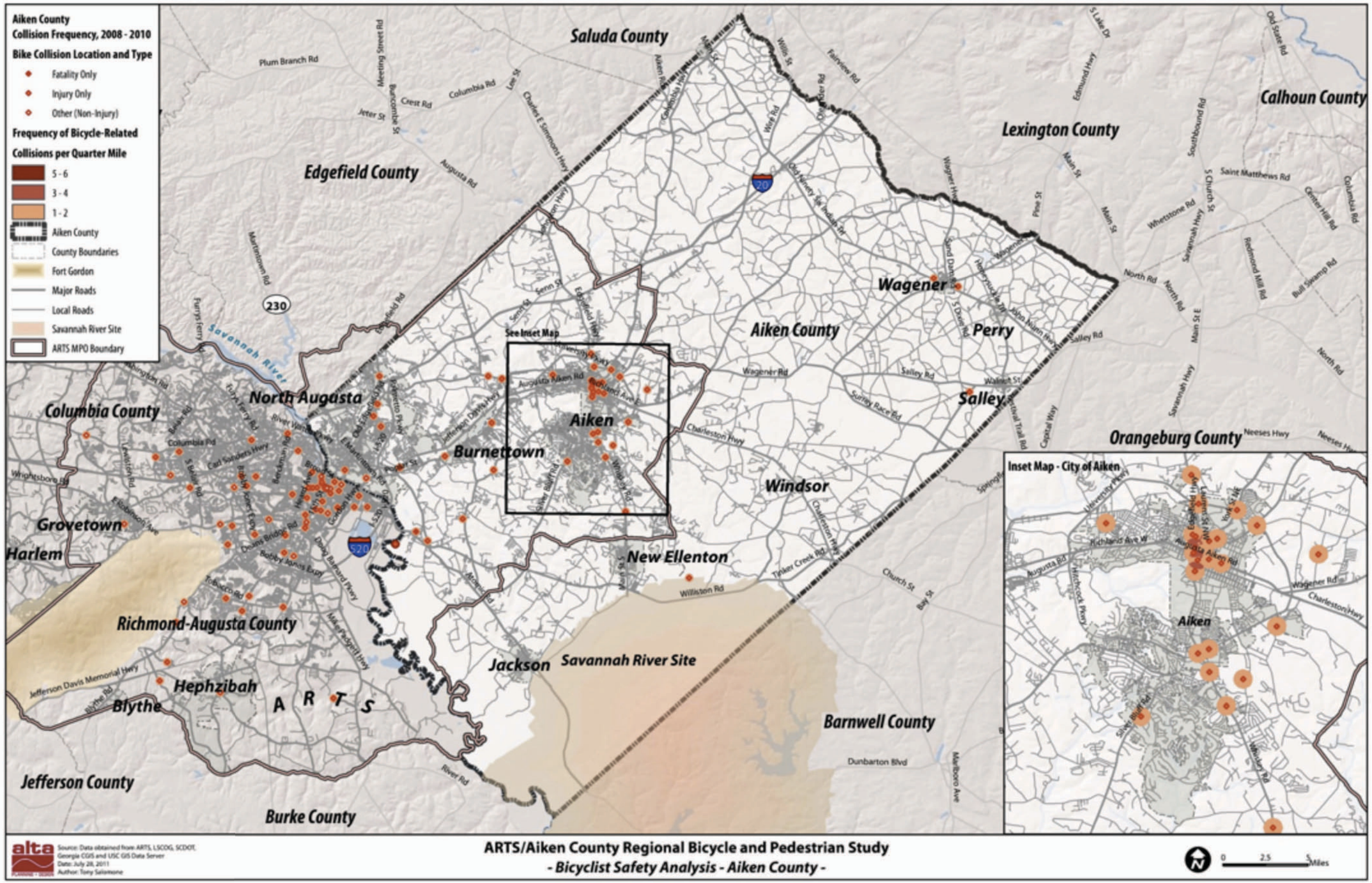


Figure 4-11: Aiken County Pedestrian Crash Loctions

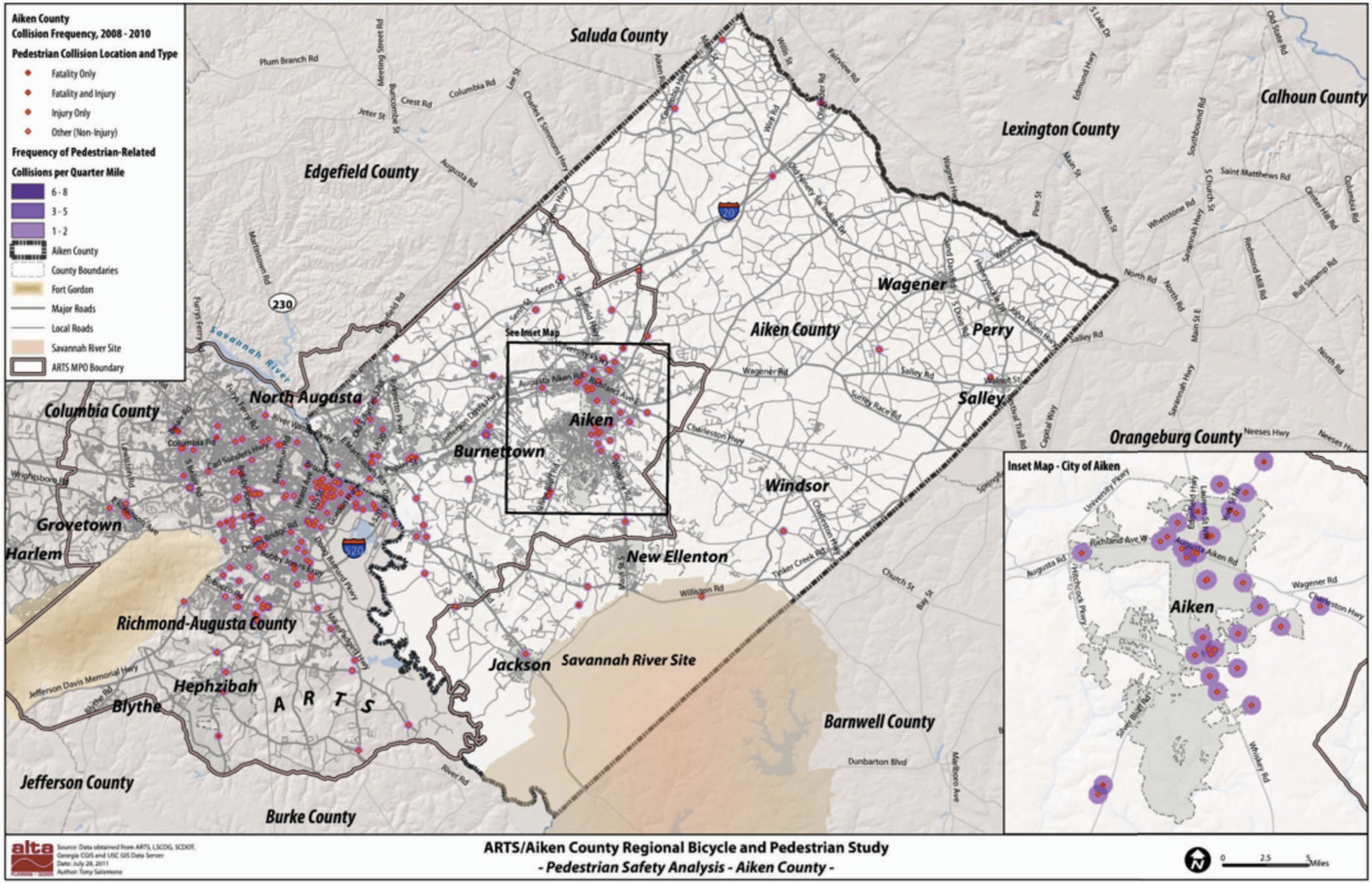
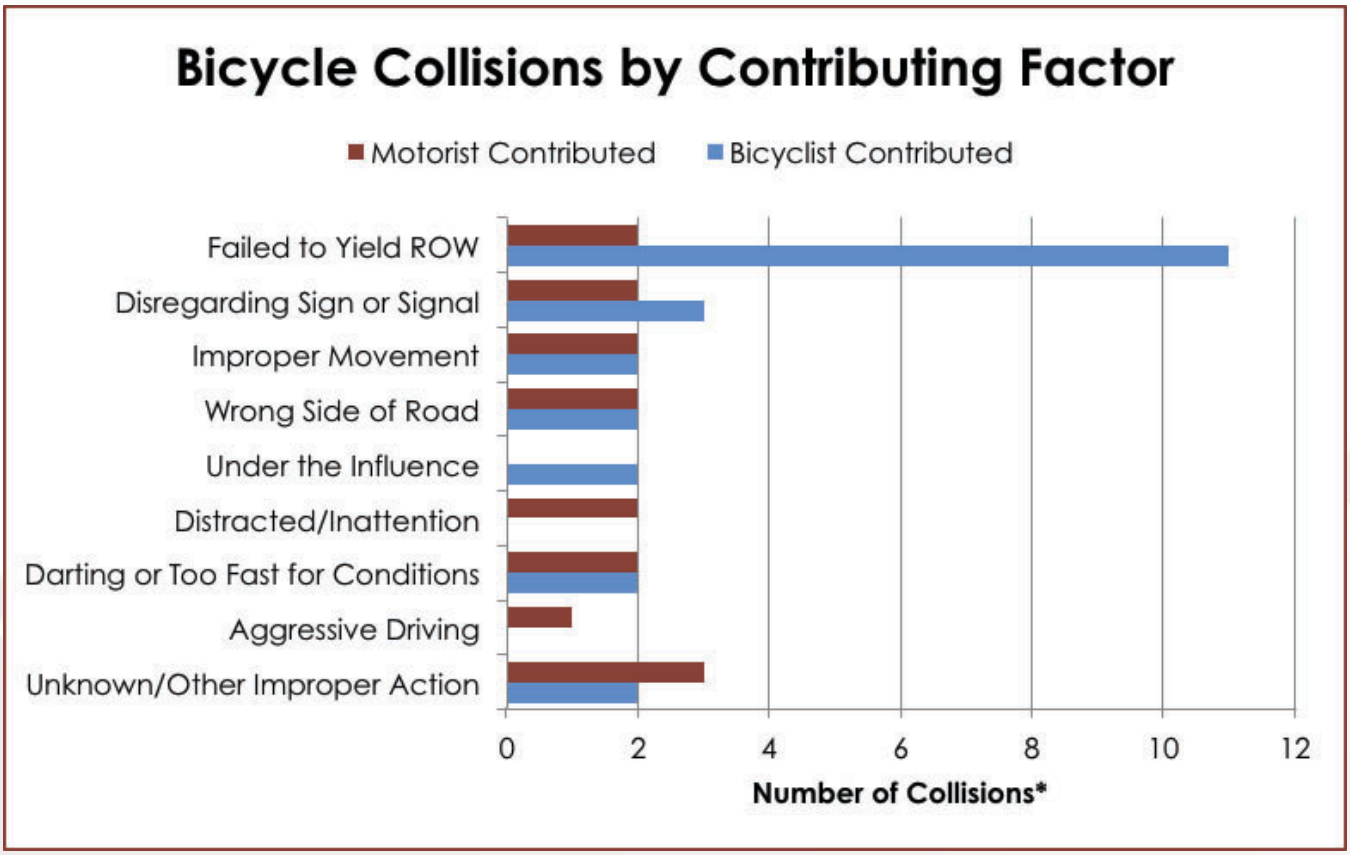


Table 4-15 and Table 4-16 provide details on the primary factors in bicycle and pedestrian crashes. In bicycle crashes, over 80 percent of the automobile contributing factors included improper action or movement by driver (31 percent), driving too fast (13 percent), distracted driving (13 percent), failing to yield to right of way (13 percent), or disregarding a sign or signal (13 percent). Approximately 45 percent of bicyclist contributing factors were from failing to yield right of way and 13 percent resulted from bicyclists disregarding a sign or signal.

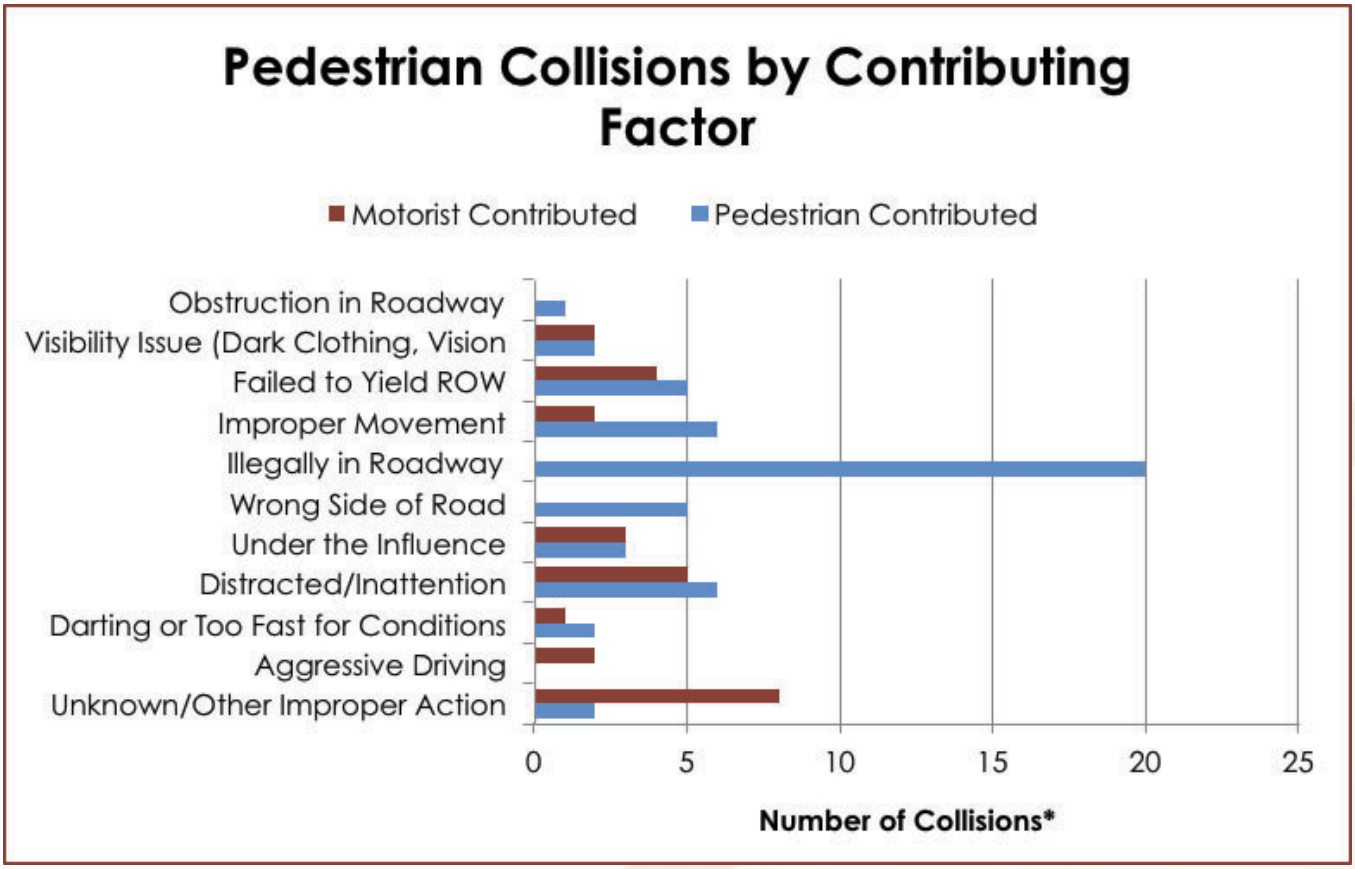
For pedestrian collisions, the most prominent automobile contributing factors included improper actions by drivers (30 percent), distracted driving (19 percent), failing to yield right of way to bicyclists (15 percent), and motorists under the influence (11 percent). The most prominent factors in pedestrian collisions where pedestrians contributed to the collision included pedestrians illegally in the roadway (38 percent), improper crossings (12 percent), or distracted/inattentive actions by pedestrians (12 percent). It should be noted that in many cases, the "pedestrians illegally in roadway" code can be misleading. It technically could apply to a pedestrian crossing midblock to get to a bus stop when the "block" is a half mile long. In such cases, it is misleading to code this as a primary collision factor. Reviewing police reports for these pedestrian crashes may provide further insight into countermeasures that may be provided to enhance safety.

Table 4-15: Aiken County Bicycle Collisions by Contributing Factor



**Please note that totals are in excess of the total number of bicycle crashes reported. This is due to cases where both motorists and bicyclists were determined to have contributed to the crash.*

Table 4-16: Aiken County Pedestrian Collisions by Contributing Factor



*Please note that totals are in excess of the total number of crashes reported. This is due to cases where multiple motorists and/or pedestrians were involved in a single crash.

Crash Analysis Findings

The following streets are locations where at least 5 crashes have been reported during the three-year period in the region:

1. East Pine Log Road, Aiken County (9 Crashes)

2. Atomic Road, Aiken County (5 Crashes)

These locations, in particular, will deserve attention to improve safety for pedestrians and bicyclists in the county.

There is an overrepresentation of crashes in dark conditions in Aiken County, with 50 percent of all pedestrian crashes occurring during non-daylight hours yet there is typically less walking occurring then. With 100 percent of the pedestrian fatalities also occurring in dark conditions, there is a compelling case for addressing this problem in more detail.