



COASTAL REGION MPO

## REGIONAL PARK + RIDE INITIATIVE

*park. ride. relax.*



# Technical Memorandum #2 Regional Transit Service Demand *June 2014*



## PARK AND RIDE LOT STUDY

Submitted by:



In Association With:



# Table of Contents

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1. Introduction .....	1
2. Regional Demographics .....	2
2.1 Population Change .....	3
2.2 CORE MPO Area Population and Employment Trends .....	6
3. Regional Travel Patterns .....	13
4. Activity Center Work Force and Travel Patterns.....	16
4.1 LEHD Analysis .....	18
4.2 Employer-Provided Travel Pattern Information .....	29
5. Existing Park and Ride Lots .....	35
6. Conclusions and Proposed Priority Corridors .....	38

# 1. Introduction

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On August 27, 2013, the Chatham County – Savannah Metropolitan Planning Commission executed a contract with Connetics Transportation Group, Inc. to perform transportation consultant services for a park and ride lot study. The Coastal Region Metropolitan Planning Organization (CORE MPO) *Transit Mobility Vision Plan* (TMVP), completed in 2011, presented a regional vision for transit in the Savannah region. This study is intended to advance TMVP recommendations for park and ride lots and supporting transit services in the greater Savannah region, primarily in Bryan, Chatham, and Effingham Counties.

The TMVP included an initial assessment of commuting patterns that was used to identify high and medium priority corridors. Most of the information used was based on 2000 census data. The primary purpose of this Technical Memorandum is to review and update the TMVP's list of priority corridors based on additional and more current information on commuting patterns. It also expands upon the list of major employers identified in the TMVP with more current information regarding existing and anticipated future employment figures.

Specific tasks completed under Task 2 are as follows.

- **Identification of Commuter Travel Sheds.** A preliminary list of radial and non-radial commuter travel sheds were identified at the project kick-off meeting for travel pattern analysis. Commuter sheds have been defined for the greater Savannah area, including the following Georgia and South Carolina Counties: Chatham, Effingham, Bulloch, Bryan, Liberty, Jasper and Beaufort.
- **Commuter Shed Trip Analysis.** A combination of U.S. Census Longitudinal Employer-Household Dynamic (LEHD) data, demographic data from the Savannah regional travel demand model, and employee zip code information that has been provided from major employers has been used to quantify estimates of existing work-related person trip travel in each commuter travel shed.
- **Prioritization of Corridors.** Existing and future work-related travel patterns and roadway travel information were then used to prioritize corridors for park-and-ride lot development and potential transit services.

## 2. Regional Demographics

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A comprehensive assessment of existing population and employment patterns and trends is the first step in assessing park-and-ride lot and regional commuter transit service needs. For this project, regional demographics have been evaluated with U.S. Census data and demographic data that is available from the CORE MPO travel demand model. As noted in the Introduction of this Tech Memo, demographic information has been collected for the following five Georgia Counties:

- Chatham County
- Bryan County
- Effingham County
- Bulloch County
- Liberty County

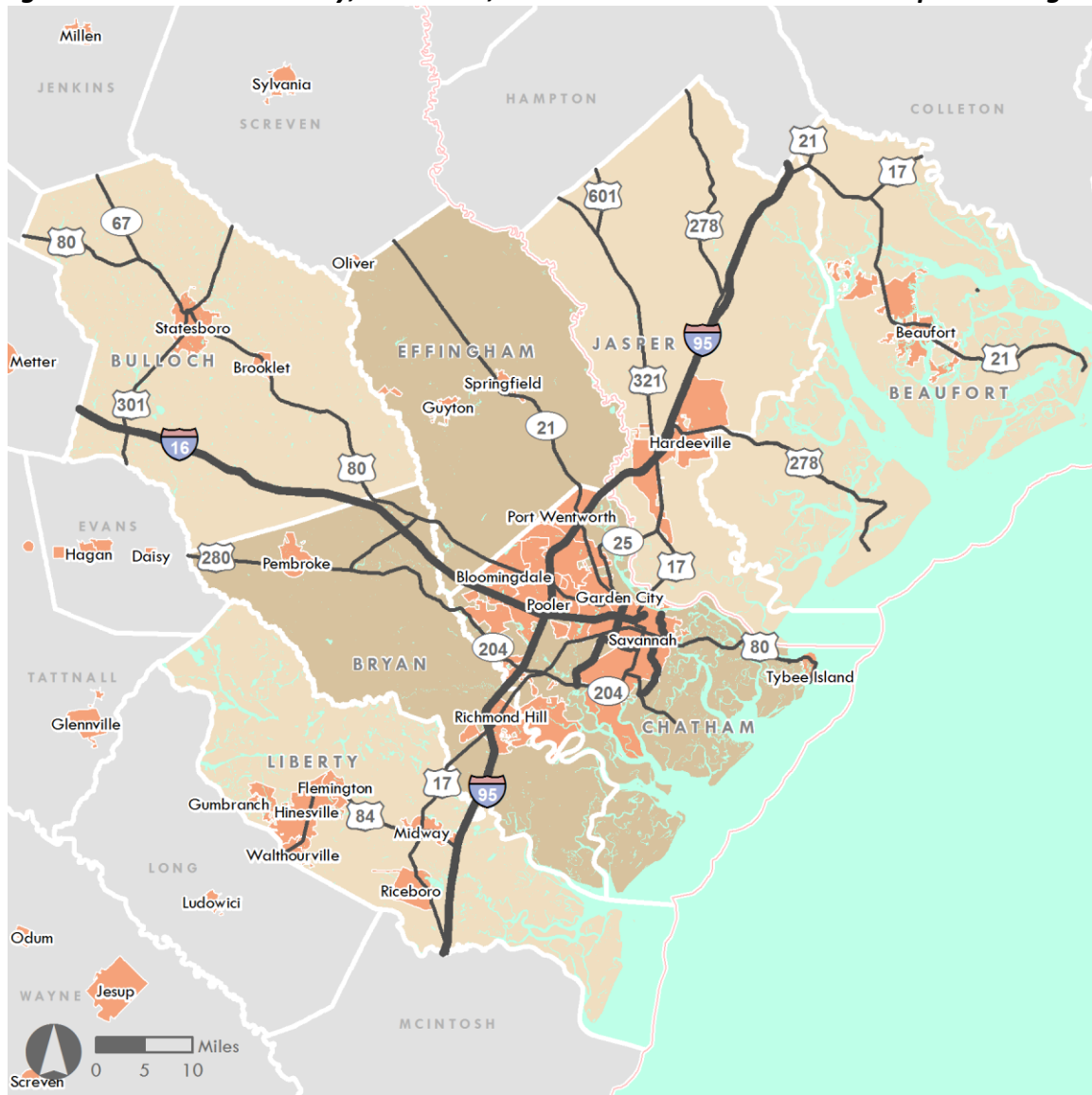
In addition, Jasper and Beaufort Counties in South Carolina have been included in this analysis.

Chatham, Effingham and Bryan Counties are defined as the Savannah Metropolitan Statistical Area (MSA) by the U.S. Census Bureau (defined as areas with a centralized urban core, a population nucleus of at least 50,000, and with a high degree of economic or commuting patterns among adjacent counties). Hinesville and the surrounding areas of Liberty and Long Counties are a separate Metropolitan Statistical Area (MSA), as is Hilton Head and the surrounding areas of Beaufort and Jasper Counties. Statesboro/Bulloch County is defined as a Micropolitan Statistical Area (defined as having an urban cluster with a population between 10,000 and 50,000).

The Coastal Region Metropolitan Planning Organization (CORE MPO) also has a regional travel demand model that encompasses Chatham, Bryan and Effingham Counties. Additional demographic data was collected and evaluated from the CORE MPO travel demand model. **Figure 2-1** shows the seven-county study area.



**Figure 2-1: Chatham County, Savannah, and the Greater Economic-Metropolitan Region**



## 2.1 Population Change

Population estimates for the 2000 to 2010 decade from the U.S. Census Bureau show a steady population increase for the seven-county region, as shown in **Table 2-1**. Overall, the region grew by 21%, adding nearly 116,000 people. From 2000 to 2010, each of the counties experienced double-digit growth, with the exception of Liberty County (which grew by 3%). In terms of percentage growth, Effingham and Beaufort Counties led the region with 39% and 34% growth, respectively. Beaufort and Chatham Counties support the largest share of population and led the region in terms of absolute population growth, growing by 41,300 and 32,800, respectively.

Focusing on annual population estimates and growth rates presented in **Table 2-1**, most counties saw annual increases of between 1% and 3% on average throughout the past decade. The one exception

was Liberty County, which had a somewhat stagnant growth rate over the past decade at only 0.4%. It had negative rates for 2003, 2005, and 2010 followed by increases in the following years, most likely due to the presence of Fort Stewart and waves of military deployment. Percentage changes are color-coded with the darkest green indicating highest growth rates and the darkest red indicating highest population loss rates.

**Table 2-1: 2000 to 2010 Population Estimates and Growth Rates for the Seven-County Region**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Bryan	23,430	23,867	24,377	25,069	26,061	26,557	27,346	28,302	29,178	29,987	30,233
Bulloch	55,961	56,808	57,361	59,314	60,832	63,048	64,304	65,768	67,092	68,598	70,217
Chatham	232,372	234,150	236,510	237,348	240,818	242,242	246,896	251,981	255,269	262,122	265,128
Effingham	37,522	39,116	40,757	42,168	43,674	45,729	47,823	49,660	50,738	51,908	52,250
Liberty	61,661	61,388	62,505	60,403	63,254	64,718	63,047	63,708	62,635	67,061	63,453
Beaufort	120,931	125,550	129,290	130,998	136,331	141,498	147,213	151,411	156,399	159,737	162,233
Jasper	20,672	21,024	21,102	21,236	21,456	21,845	22,406	22,971	23,620	24,234	24,777
<b>Total</b>	<b>552,549</b>	<b>561,903</b>	<b>571,902</b>	<b>576,536</b>	<b>592,426</b>	<b>605,637</b>	<b>619,035</b>	<b>633,801</b>	<b>644,931</b>	<b>663,647</b>	<b>668,291</b>

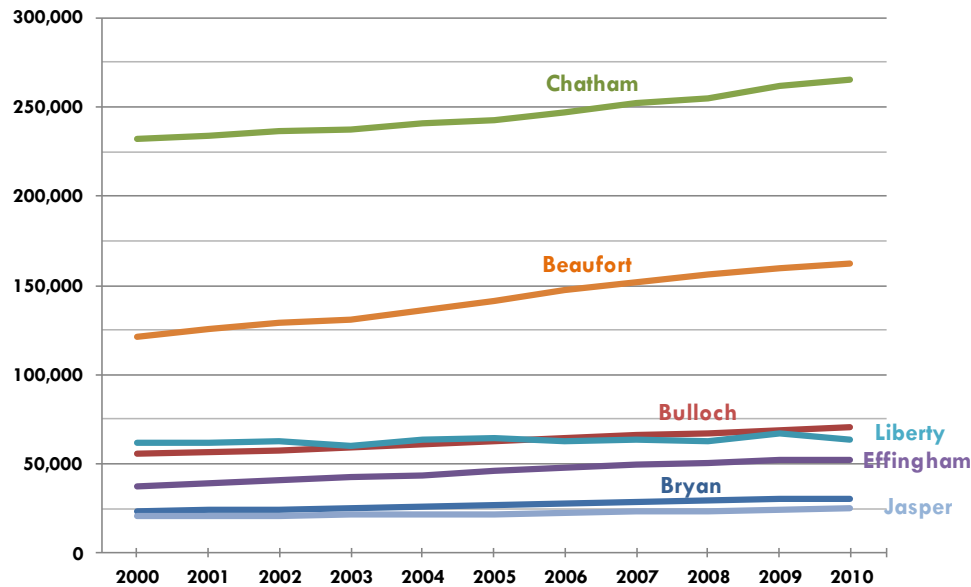
  

	'00-'01	'01-'02	'02-'03	'03-'04	'04-'05	'05-'06	'06-'07	'07-'08	'08-'09	'09-'10	'00-'10 Avg
Bryan	1.9%	2.1%	2.8%	4.0%	1.9%	3.0%	3.5%	3.1%	2.8%	0.8%	2.6%
Bulloch	1.5%	1.0%	3.4%	2.6%	3.6%	2.0%	2.3%	2.0%	2.2%	2.4%	2.3%
Chatham	0.8%	1.0%	0.4%	1.5%	0.6%	1.9%	2.1%	1.3%	2.7%	1.1%	1.3%
Effingham	4.2%	4.2%	3.5%	3.6%	4.7%	4.6%	3.8%	2.2%	2.3%	0.7%	3.4%
Liberty	-0.4%	1.8%	-3.4%	4.7%	2.3%	-2.6%	1.0%	-1.7%	7.1%	-5.4%	0.4%
Beaufort	3.8%	3.0%	1.3%	4.1%	3.8%	4.0%	2.9%	3.3%	2.1%	1.6%	3.0%
Jasper	1.7%	0.4%	0.6%	1.0%	1.8%	2.6%	2.5%	2.8%	2.6%	2.2%	1.8%

Source: U.S. Census Bureau

When examining the population change from 2000 to 2010 for all counties, it is clear that Chatham and Beaufort Counties gained the largest share of population and thus saw large increases, even though growth rates were similar across the region. **Figure 2-2** shows the upward decadal population trend with Chatham and Beaufort accounting for 64% of all population increase in the past ten years.

**Figure 2-2: 2000 to 2010 Population Change for the Seven-County Region**



The current Savannah MSA encompasses Bryan, Chatham, and Effingham Counties and contains just over half of this region's population. Between 2000 and 2010, this three-county area grew by 19% from 293,300 to 347,600 persons. While absolute growth was greatest in Chatham County, on a percentage basis, Effingham County led the area's growth at 39% followed by Bryan County at 29%.

Turning to more recent estimates and future projections, **Table 2-2** presents state estimates for 2010 and 2012 and projections for 2040. The 2010 population estimates shown in **Table 2-2** differ slightly from those shown in **Table 2-1** because they come from different sources (**Table 2-1's** source is the U.S. Census and **Table 2-2's** sources are the Georgia Office of Planning and Budget and the South Carolina Budget and Control Board). In 2010, State population estimates for the seven-county region was approximately 669,000 and had climbed to around 694,000 two years later.

**Table 2-2: County-Level Population Estimates and 2040 Projections**

State	County	2010	2012	2040	2012-2040 % Change
Georgia	Bryan	30,412	32,214	44,028	36.7%
	Bulloch	70,635	72,694	93,689	28.9%
	Chatham	265,998	276,434	321,107	16.2%
	Effingham	52,420	53,292	71,202	33.6%
	Liberty	62,773	65,471	77,655	18.6%
	<b>Subtotal</b>	<b>482,238</b>	<b>500,105</b>	<b>607,681</b>	<b>21.5%</b>
South Carolina	Beaufort	162,233	168,049	210,718	25.4%
	Jasper	24,777	25,833	32,175	24.6%
	<b>Subtotal</b>	<b>187,010</b>	<b>193,882</b>	<b>242,893</b>	<b>25.3%</b>
<b>TOTAL</b>		<b>669,248</b>	<b>693,987</b>	<b>850,574</b>	<b>22.6%</b>

Sources: 2010 & 2012: Georgia Office of Planning and Budget, South Carolina Budget & Control Board; 2040: Georgia Statewide Model and CORE MPO model demographic data

Between 2010 and 2040, the Georgia Statewide model and the CORE MPO model project the population in the seven-county region will grow by nearly 23% to approximately 850,500. Bryan and Effingham Counties are projected to lead the region in percentage growth, at 37% and 34%, respectively.

## ***2.2 CORE MPO Model Area Population and Employment Trends***

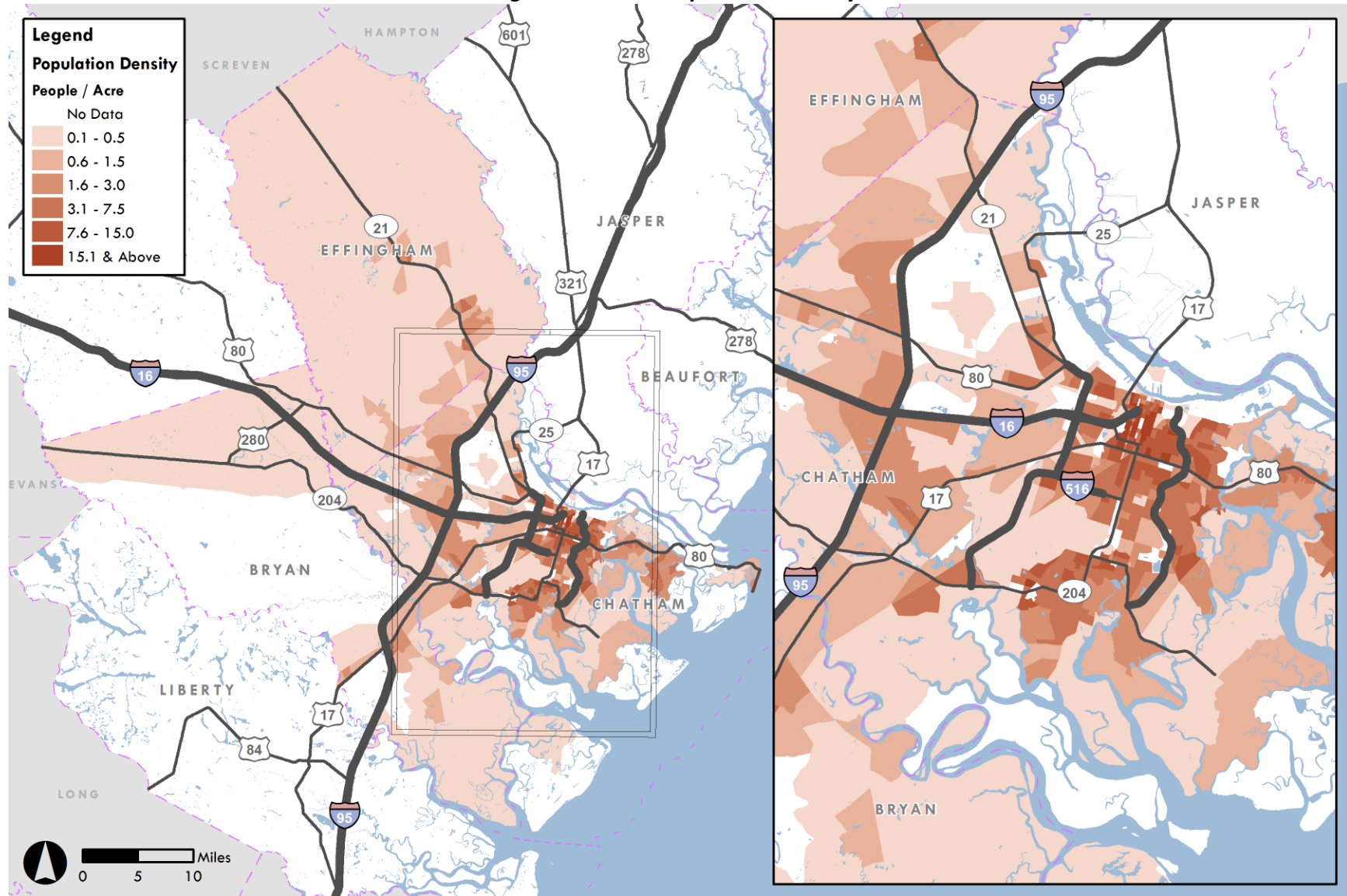
Socioeconomic characteristics such as population and employment are essential to identifying transit needs and developing transit services which address those needs. Between 2010 and 2040, the three-county CORE MPO model area is expected to see a population increase of over 27% to 436,000 people. A similar increase of 25% is expected in terms of employment and by 2040 the CORE MPO model area is expected to employ over 253,000 people.

In order to examine potential transit markets in detail, it is important to look at demographic data in greater detail. The remainder of this section focuses on locations within the three-county CORE MPO model area that are likely to be most supportive of transit, using population and employment estimates for 2010 and projections for 2040 provided by CORE MPO staff based on Traffic Analysis Zones (TAZs). The maps that follow show the spatial distribution of population and employment.

Population densities in the three-county area range from a baseline of between 0.1 and 0.5 persons per acre to over 15.1 persons per acre in the historic Downtown Savannah area. Many of the areas with highest population densities occur in the historic Downtown Savannah and throughout the most central portions of Savannah, Southside Savannah, the island communities of Whitmarsh and Wilmington Islands, areas between I-95 and US 17, and areas outside of Rincon, Bloomingdale, and Pooler. Between 2010 and 2040, it is expected that most of the increase in population will occur in areas along and northwest of US 17 toward I-95, and continue beyond I-95 northwest into Effingham County, generally along and between US 80 and SR 21. Areas with high densities will see more density and already-developed areas will see more internal and surrounding growth. Remaining undeveloped areas in Chatham County will see new residential developments such as along US 17 and US 80. The areas of greatest expansion will occur along the north end of Jimmy Deloach Parkway and around the interchange of I-95 with I-16. It is also expected that development in Bryan County along Bryan Neck Road will see large influxes of residents. **Figures 2-3** through **2-5** show the population densities in 2010 and 2040 and the total change expected by 2040.

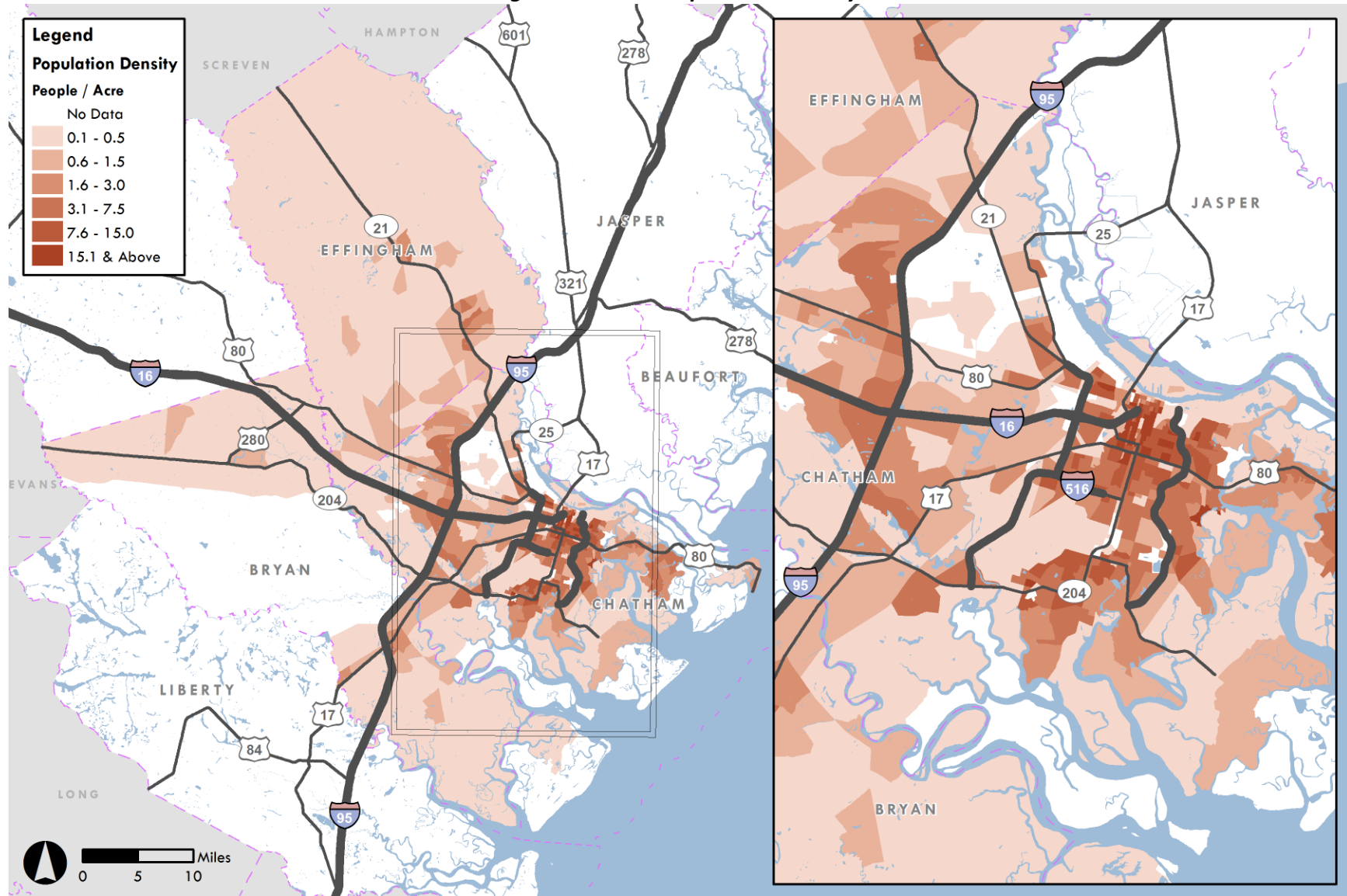
Employment densities range from a baseline of 1 job per acre to a high of over 150 jobs per acre in the Downtown Savannah core. Many of the densest areas of employment are in Downtown Savannah and along the SR 204 (Abercorn) corridor through Southside Savannah, along SR 21 and the Savannah River, and along I-16. By 2040, more jobs are added along the I-16 and US 80 corridors, west toward and along I-95. **Figures 2-6** and **2-7** show, respectively, 2010 and 2040 employment densities, and **Figure 2-8** shows the total employment change expected by 2040.

**Figure 2-3: 2010 Population Density**



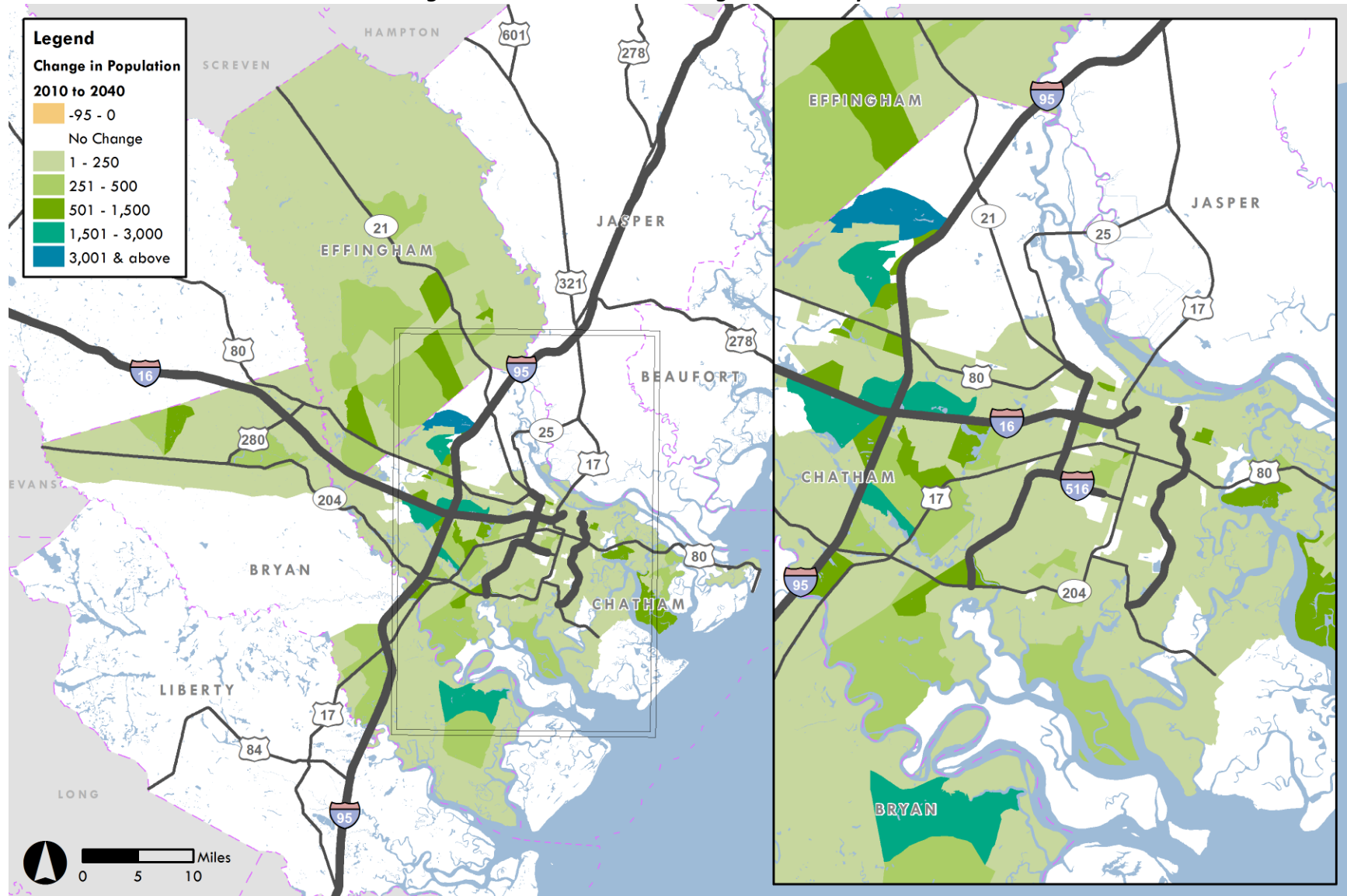


**Figure 2-4: 2040 Population Density**

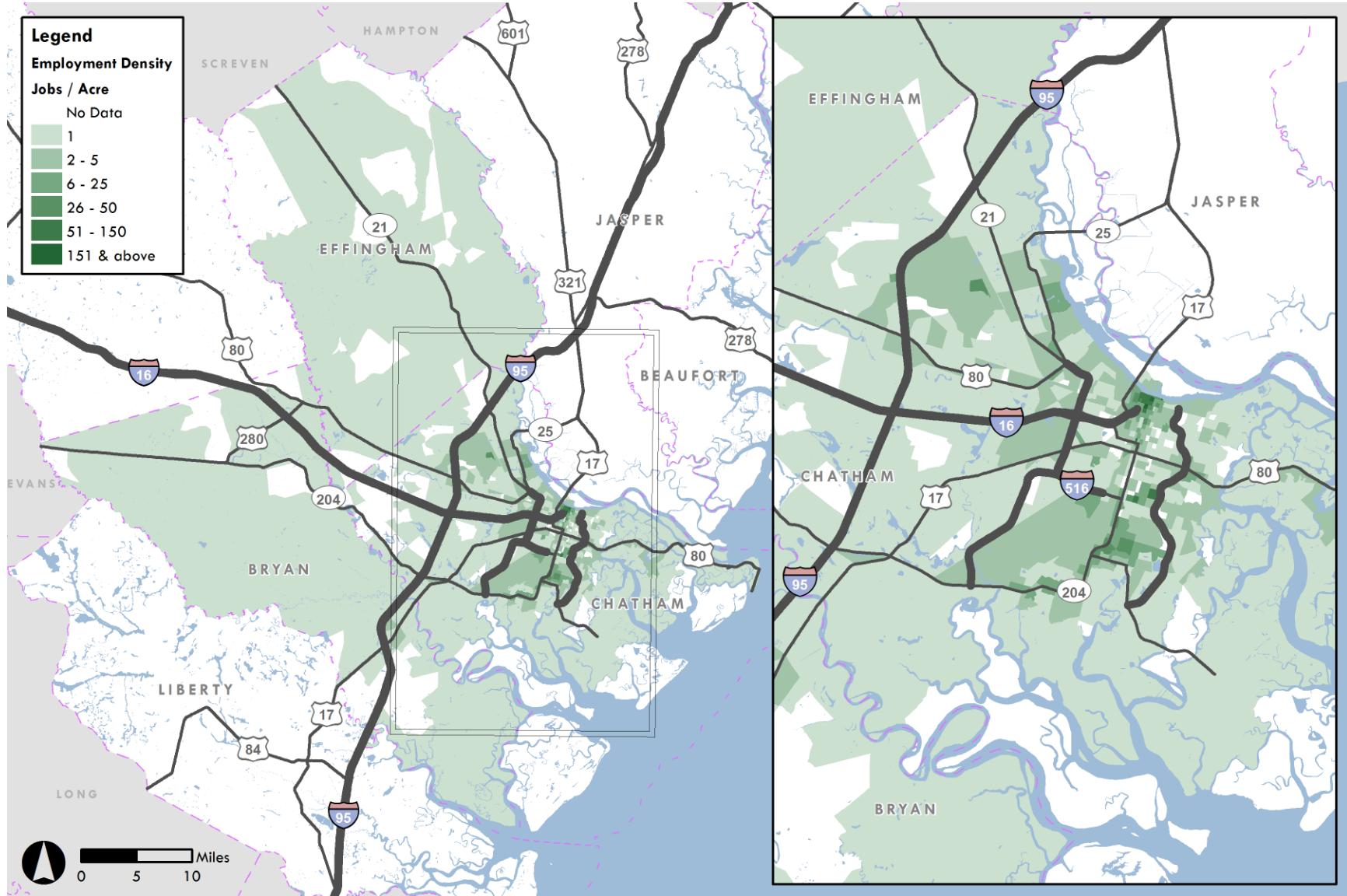




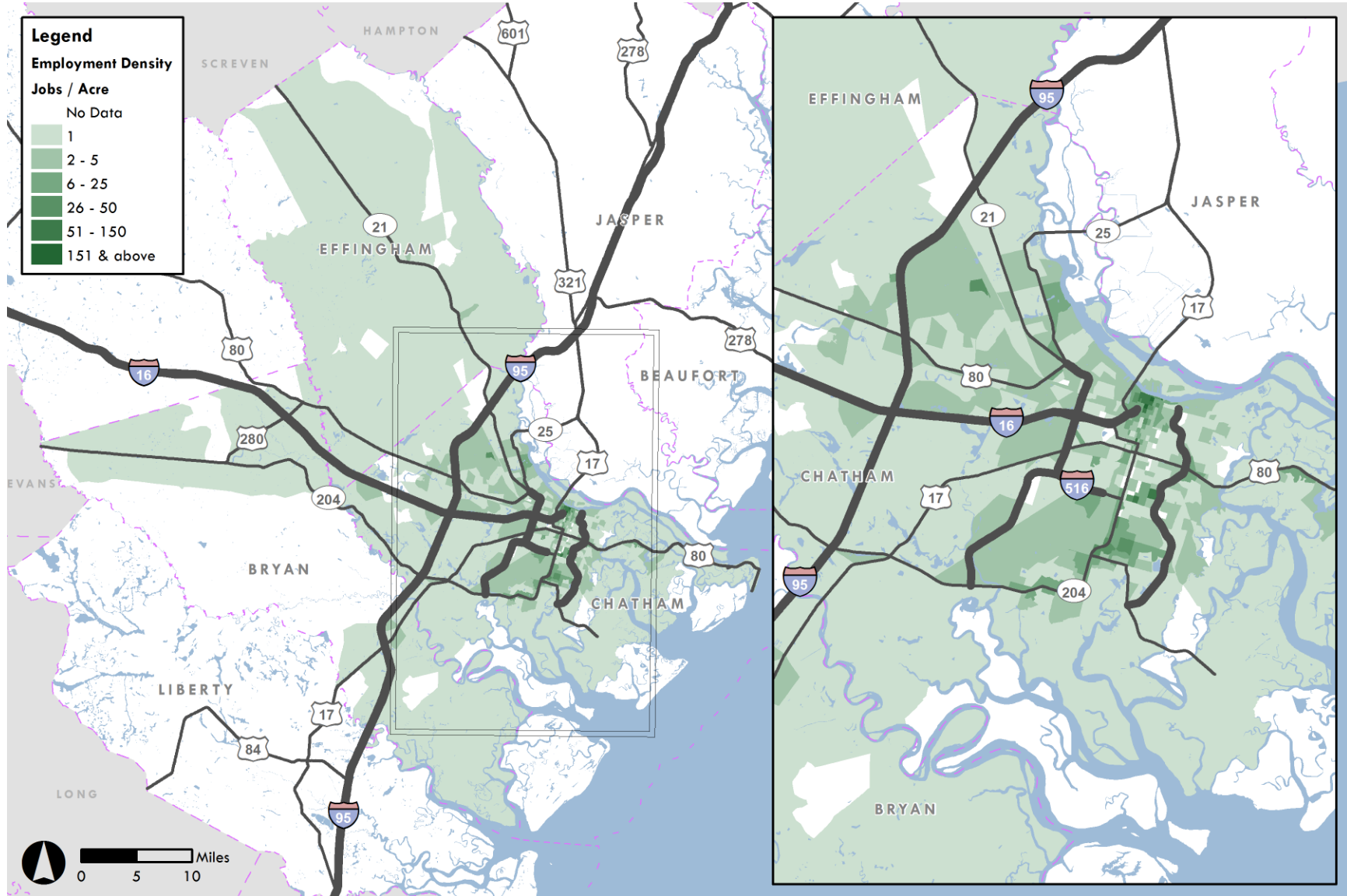
**Figure 2-5: 2010 to 2040 Change in Total Population**



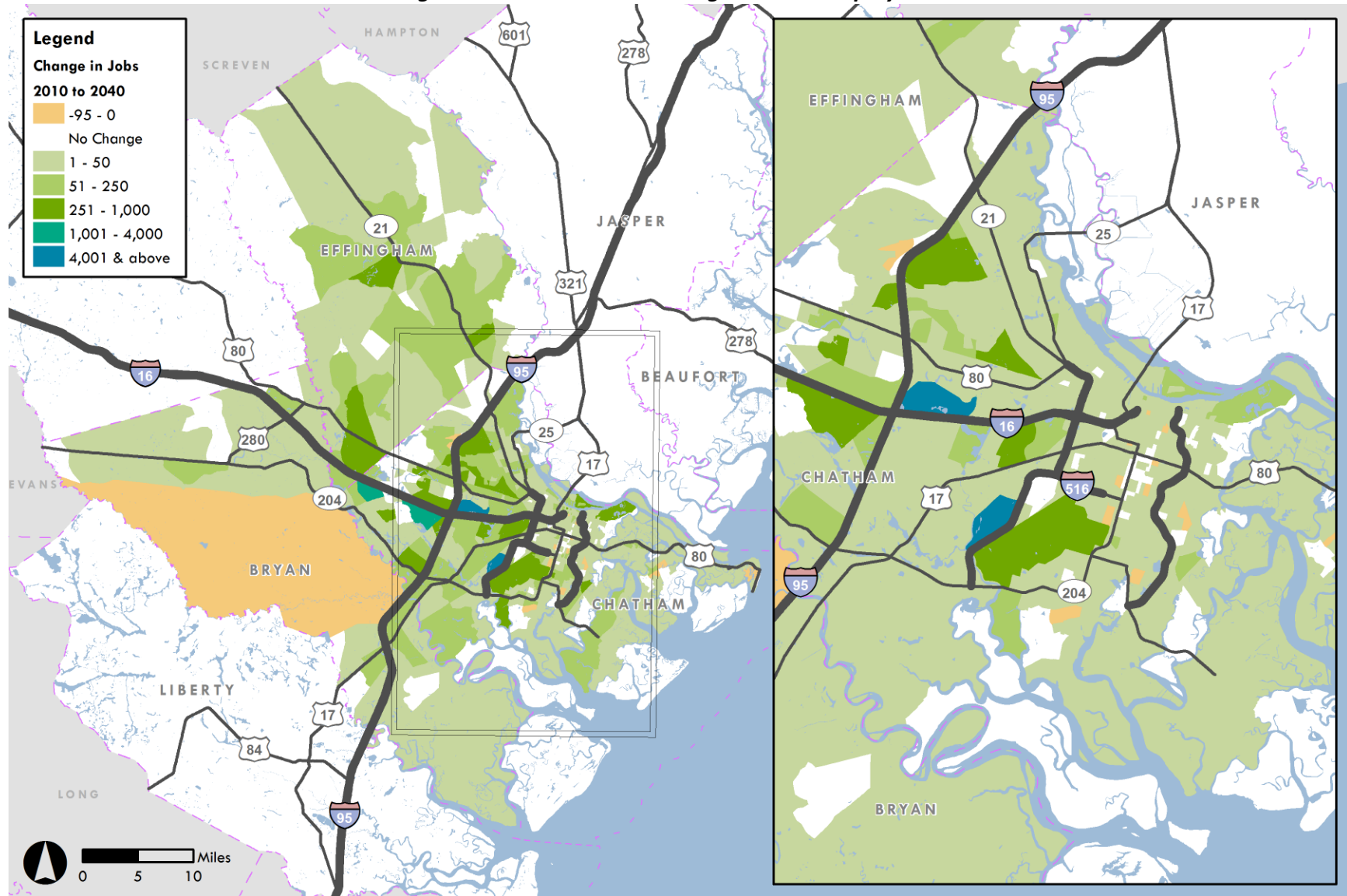
**Figure 2-6: 2010 Employment Density**



**Figure 2-7: 2040 Employment Density**



**Figure 2-8: 2010 to 2040 Change in Total Employment**





### 3. Regional Travel Patterns

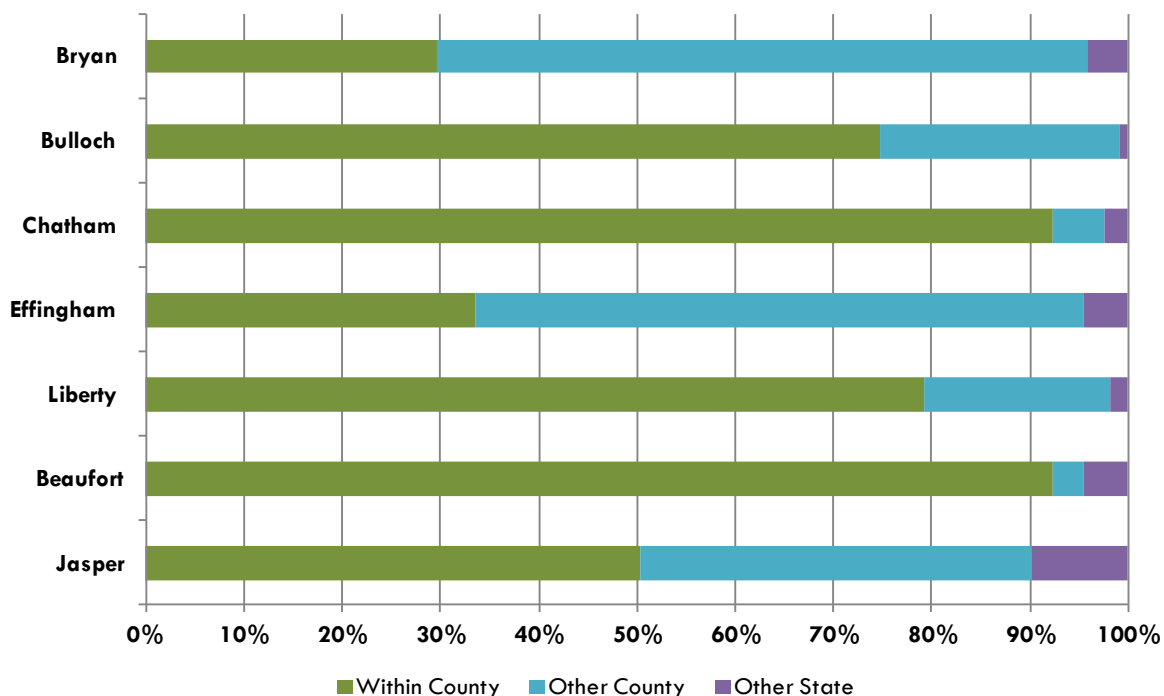
Where people work and how long it takes them to travel there are two important questions when attempting to address access needs in a greater region. Data from the 2009 through 2011 American Community Survey (ACS) was assessed in order to answer those questions. **Table 3-1** presents proportions of employment for the greater seven-county region by where people worked. The data shows whether workers stayed within the county they listed as their permanent residence, traveled to a county outside of their resident county, or traveled into a different state, which in this case was more than likely between South Carolina and Georgia. **Figure 3-1** graphically illustrates the same data.

**Table 3-1: Proportion of Employment by Location, 2009-2011 ACS**

	2009-11 Employees	Within County	Other County	Other State
Bryan	14,078	29.70%	66.10%	4%
Bulloch	28,822	74.80%	24.40%	0.80%
Chatham	115,905	92.30%	5.30%	2.40%
Effingham	23,488	33.50%	61.90%	4.60%
Liberty	28,328	79.10%	18.90%	1.90%
Beaufort	70,703	92.50%	3.10%	4.50%
Jasper	10,455	50.30%	39.90%	9.80%

Source: U.S. Census Bureau, American Community Survey

**Figure 3-1: Proportion of Employment by Location, 2009-2011 ACS**



It is evident that workers living in Bulloch, Chatham, Liberty, and Beaufort Counties overwhelmingly stay within their own county to work, illustrating a strong local presence of employment. Workers in Bryan, Effingham, and Jasper Counties, however, overwhelmingly travel outside of their home counties in order to get to work. Jasper County has the largest percentage (9.8%) of workers crossing state lines in order to get to employment. In this case, the most likely crossing is from South Carolina into Georgia.

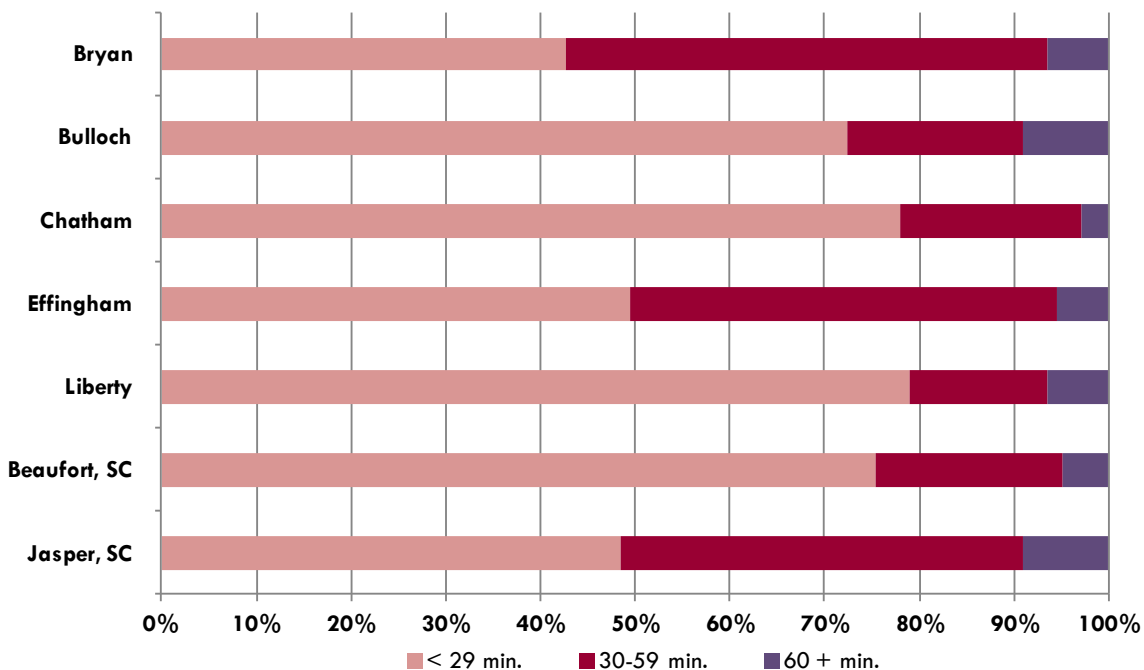
Travel time to work closely matches the proportions of workers stratified by employment location. **Table 3-2** details the proportions of commute time for each county, while **Figure 3-2** graphically depicts the commute time proportion for each county.

**Table 3-2: Proportion of Employment by Time to Work, 2009-2011 ACS**

	2009-11 Employees	< 29 min.	30-59 min.	60 + min.
Bryan	14,078	42.7%	50.8%	6.5%
Bulloch	28,822	72.4%	18.6%	9.0%
Chatham	115,905	78.0%	19.1%	2.9%
Effingham	23,488	49.4%	45.2%	5.4%
Liberty	28,328	78.9%	14.7%	6.4%
Beaufort, SC	70,703	75.5%	19.7%	4.8%
Jasper, SC	10,455	48.4%	42.6%	9.0%

Source: U.S. Census Bureau, American Community Survey

**Figure 3-2: Proportion of employment by time to work, 2009-2011 ACS**



Bulloch, Chatham, Liberty, and Beaufort Counties again have the largest share of workers who commute fewer than 29 minutes to work. This correlates well with workers who work within their own county and who probably work within 20 miles of their houses. Workers in Bryan, Effingham, and Jasper



Counties are those who must travel between 30 and 60 minutes to get to work. Again, workers in Jasper County have some of the longest commutes since 9% of its workers commute for more than 120 minutes each day.

## 4. Activity Center Work Force and Travel Patterns

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Although much employment is centered in the expected traditional Savannah central business district as well as the commercial corridor along Abercorn Extension to the south of Downtown Savannah, many other areas are strong employment centers that are anchored by manufacturing, trade, retail, or institutional uses. In order to gauge the impact of certain employment areas on local transportation corridors, analysis areas were created around major employment areas deemed to greatly contribute to local economic activity.

Including the central business district of Downtown Savannah, a total of ten activity centers comprised of transportation analysis zones (TAZs) were cordoned and analyzed. The ten defined areas are:

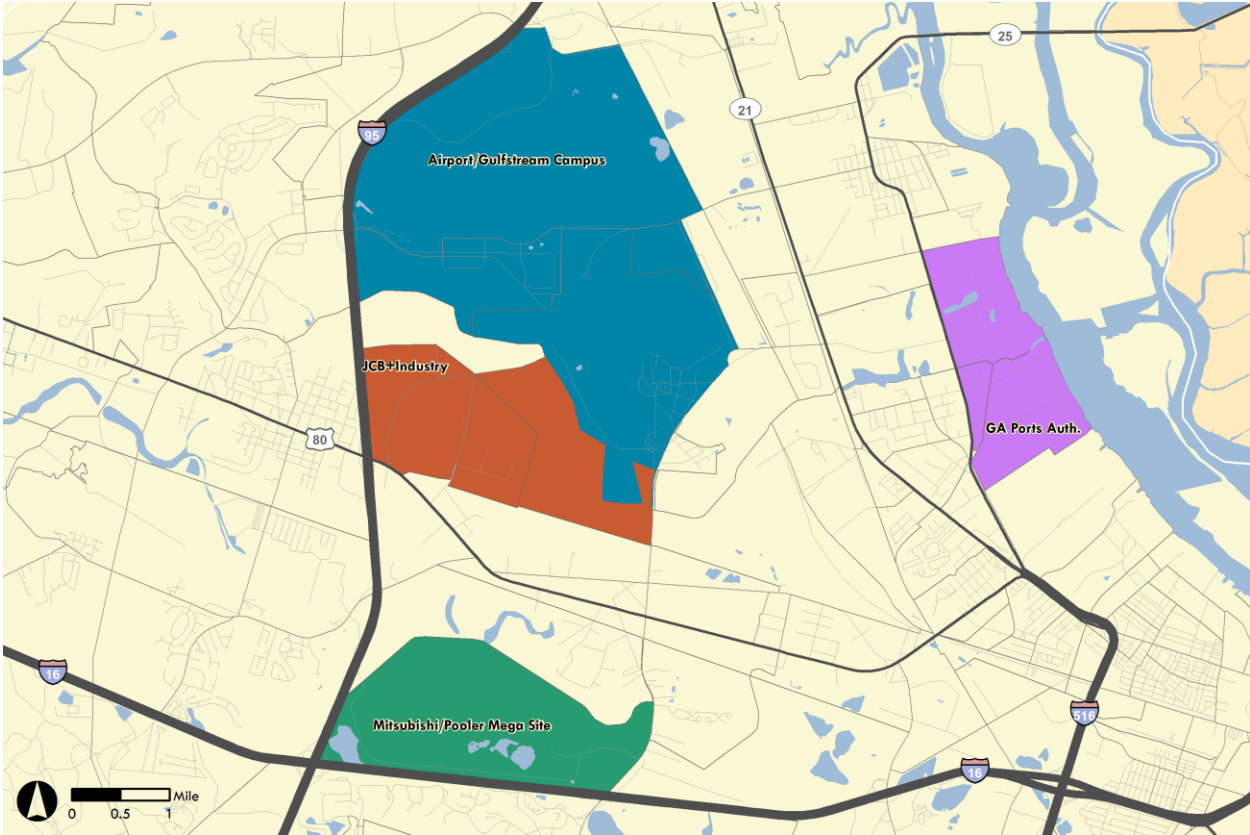
- Downtown Savannah
- Savannah International Airport/Gulfstream/Crossroads Area
- JCB Plant area
- Mitsubishi Plant area
- Oglethorpe Mall area
- Southside/Savannah Mall
- Hunter Army Airfield
- Memorial/St. Joseph's Hospitals Area
- Port of Savannah
- Savannah State University area

The defined shape and location of each employment activity center is shown in **Figures 4-1** through **4-3**. The CORE MPO model was used to assess existing and projected employment for each activity center. Employment totals are shown in **Table 4-1**. Employment attraction areas are listed by size in **Table 4-1**. As seen in this table, there is a significant drop in employment and employment densities after the Airport/Gulfstream area.

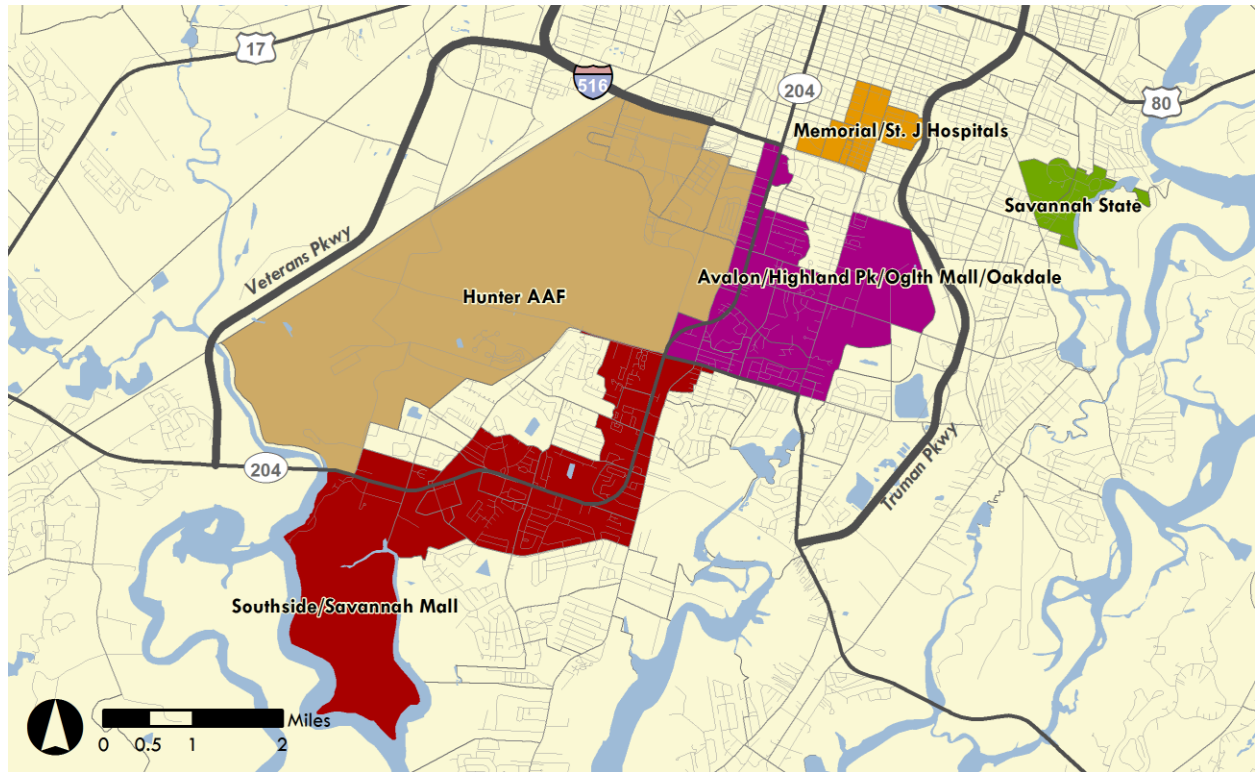
**Figure 4-1: Downtown Savannah Area**



**Figure 4-2: Airport/Gulfstream/Crossroads, JCB Plant and Mitsubishi Areas, Port of Savannah**



**Figure 4-3: Oglethorpe Mall, Southside/Savannah Mall, Hunter AAF, Memorial/St. Joseph's Hospitals and Savannah State University Areas**



**Table 4-1: CORE MPO Model Employment Data**

Attraction Area	2010		2040	
	Employment	Empl./Acre	Employment	Empl./Acre
Downtown Savannah	22,799	6.09	24,193	6.47
Oglethorpe Mall Area	22,649	6.05	24,461	6.54
Hunter Army Airfield	14,711	3.93	15,461	4.13
Memorial/St. Joseph's Hospital	13,340	3.57	13,678	3.66
Southside/Savannah Mall	11,306	3.02	12,764	3.41
Airport/Gulfstream/Crossroad	11,148	2.98	12,292	3.29
Port of Savannah	4,659	1.25	5,099	1.36
JCB Plant Area	2,886	0.77	3,298	0.88
Savannah State University	850	0.23	896	0.24
Mitsubishi Plant Area	209	0.06	7,013	1.87

## 4.1 LEHD Analysis

The Longitudinal Employer-Household Data (LEHD) program is part of the Center for Economic Studies at the U.S. Census Bureau.<sup>1</sup> This program provides public-use information by combining federal, state, and U.S. Census Bureau data on employers and employees under the Local Employment Dynamics (LED)

<sup>1</sup> U.S. Census Bureau. 2013. OnTheMap Application. Longitudinal-Employer Household Dynamics Program. <http://onthemap.ces.census.gov/>

Partnership. Employee work locations and residential locations are primarily collected from Unemployment Insurance earnings data and the Quarterly Census of Employment and Wages. For this analysis, each of the ten activity areas was surveyed for worker movement, destination, and dispersion. It is important to note that LEHD information does not include federal employee or military personnel nor does it include sole proprietors. Work site locations are sometimes reported as the place where payroll is processed, and not specifically where the job is located. For example, an employee at a public high school may show up in LEHD as working at the School Board administrative office. Thus, LEHD employment information typically underreports total employment, and workplace destinations can sometimes be distorted by major employers (primarily public sector employment).

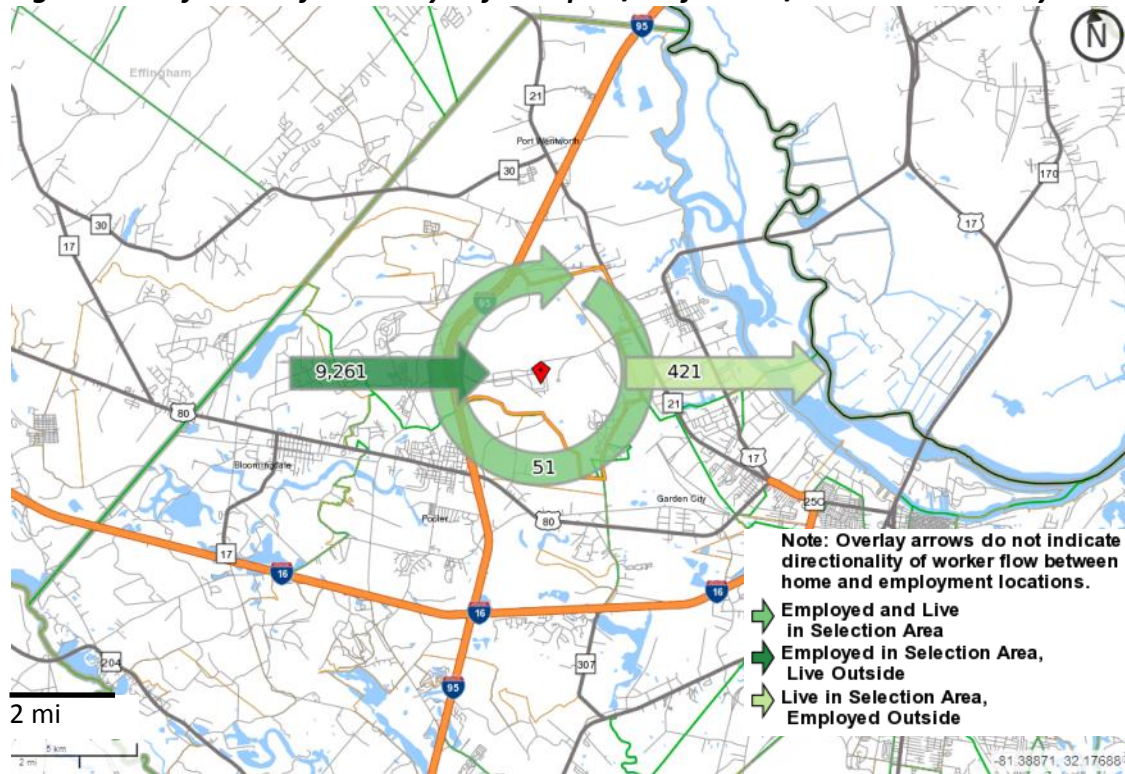
Each activity area is associated with two maps depicting 2011 LEHD data: origination/destination and dispersion. The first map presents the total worker flow to, within, and outside of the activity cordon area. For instance, in **Figure 4-4**, the map for the Savannah International Airport/Gulfstream Campus and hotel area indicates that approximately 9,300 workers live outside of the activity area and are traveling there on a daily basis for work. Another 51 live and work within the activity area boundaries, and approximately 421 workers live within the area but travel outside of the activity area for work.

The next map displays a measure of dispersion and graphically shows where workers are traveling from. For instance, in **Figure 4-5**, areas in darker blue thermal patterns show where more workers are residing. The radar map in the upper left corner shows how many and from what cardinal direction workers are coming from. In this case, we see many workers live within 24 miles of the activity center, and most come from northwest and southeast directions, indicating residences in Southside Savannah and possibly the islands as well as locations such as within Effingham or Bulloch Counties.

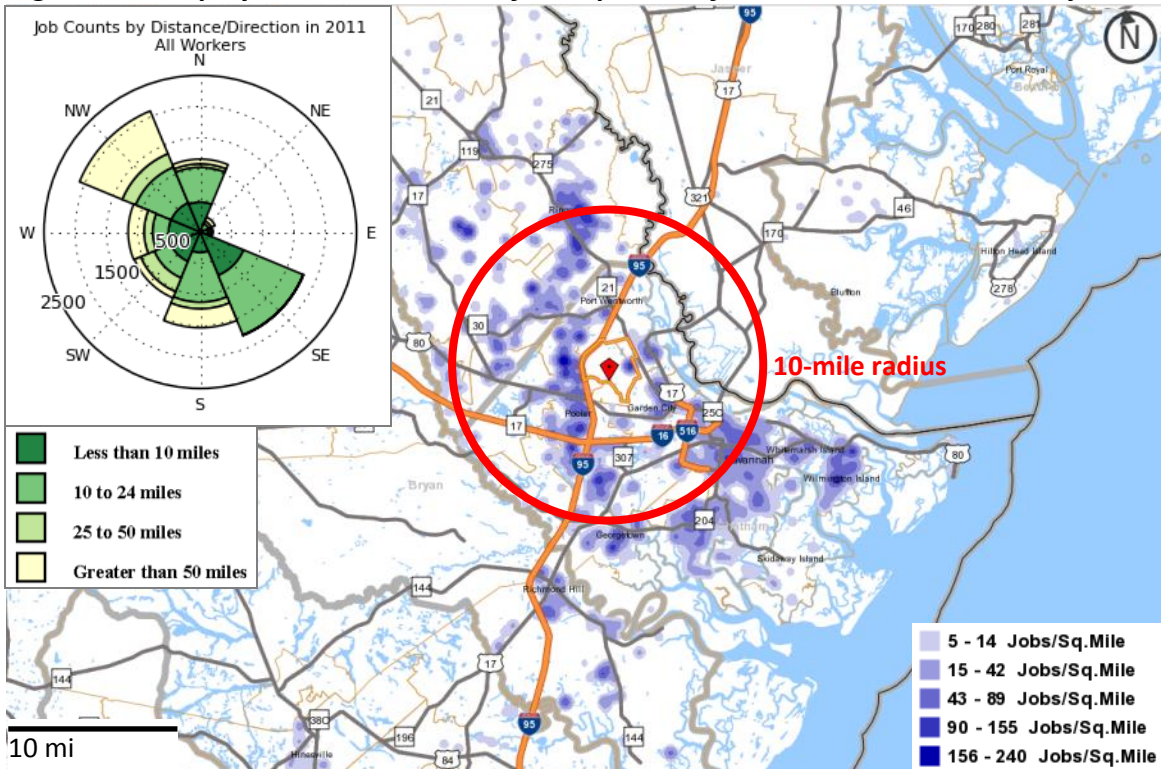
**Figures 4-4 through 4-21** present LEHD maps for nine of the ten defined employment activity centers. LEHD maps were not created for the Hunter Army Airfield activity center. As noted earlier, LEHD information does not include military personnel. Thus, LEHD significantly underreports employment activity for Hunter Army Airfield.



**Figure 4-4: Inflow-Outflow Analysis for Airport/Gulfstream/Crossroads Activity Area**

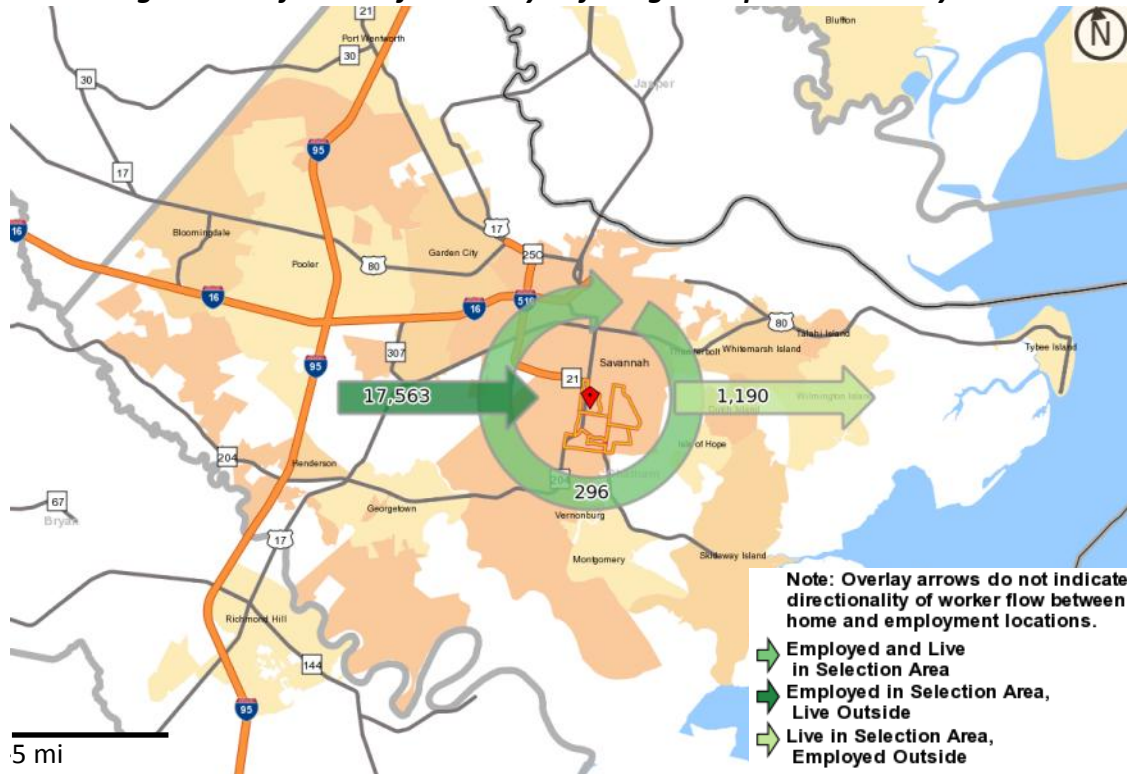


**Figure 4-5: Employee Home Locations for Airport/Gulfstream/Crossroads Activity Area**

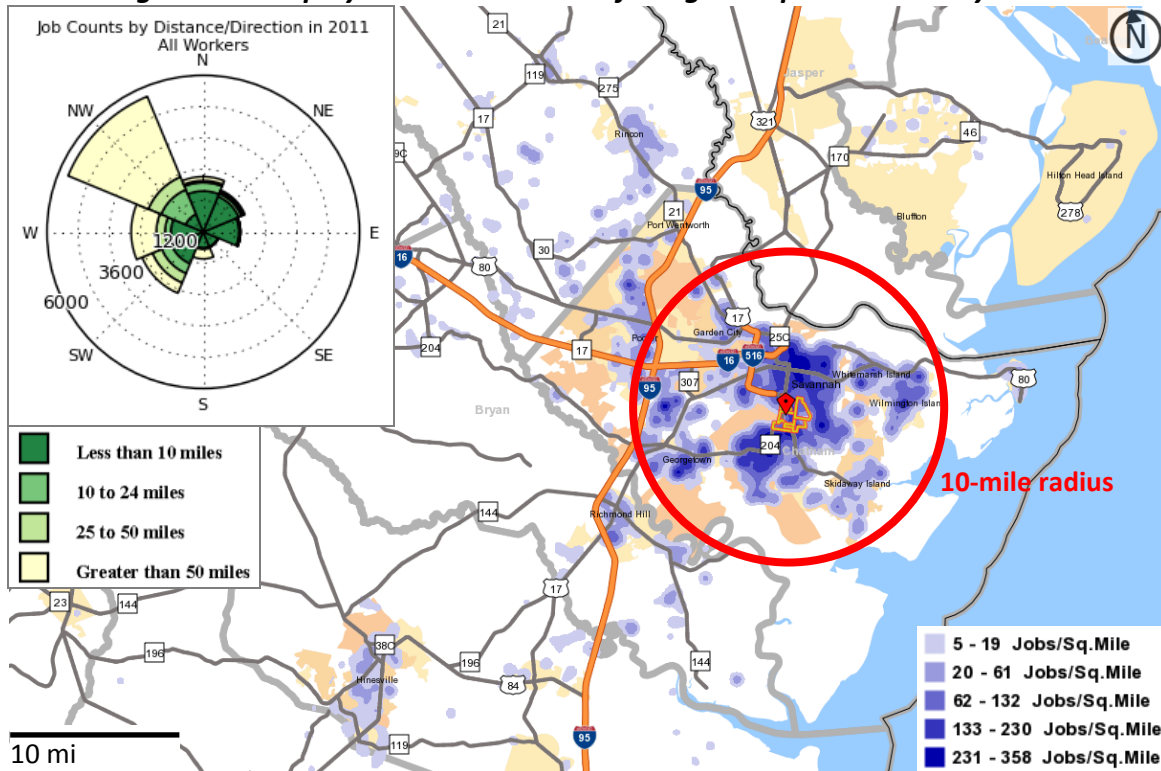




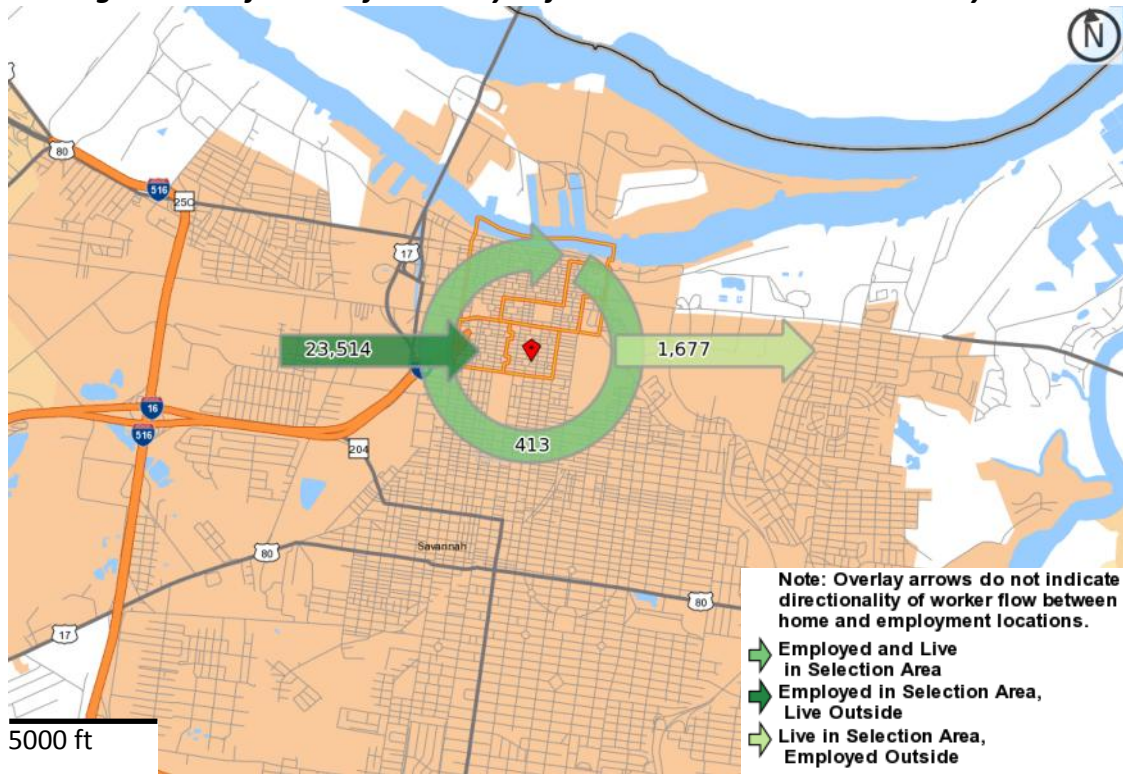
**Figure4-6: Inflow-Outflow Analysis for Oglethorpe Mall Activity Area**



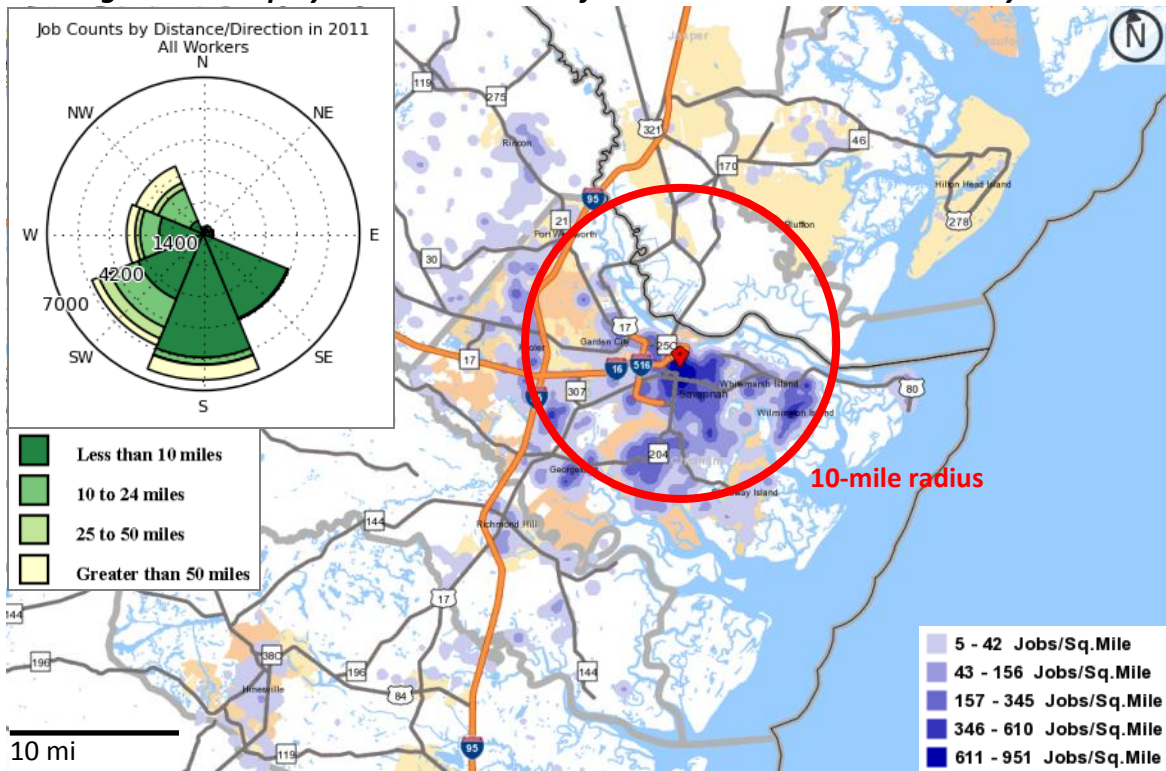
**Figure 4-7: Employee Home Locations for Oglethorpe Mall Activity Area**



**Figure 4-8: Inflow-Outflow Analysis for Downtown Savannah Activity Area**

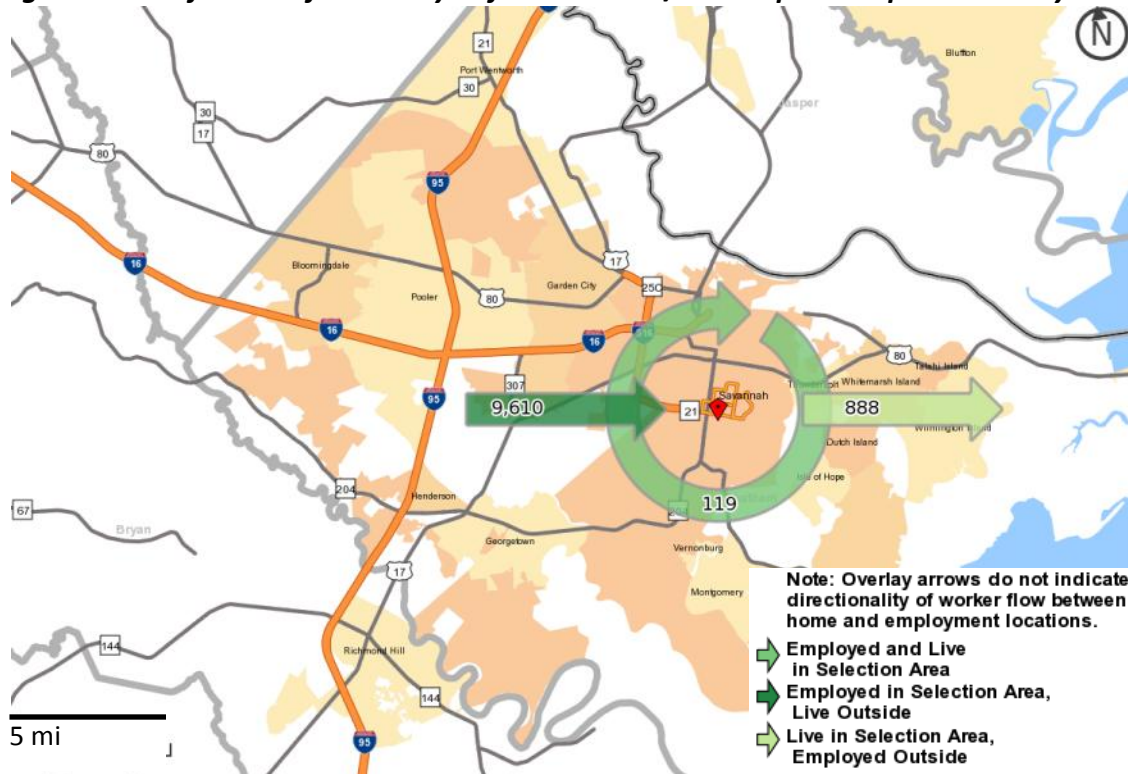


**Figure 4-9: Employee Home Locations for Downtown Savannah Activity Area**

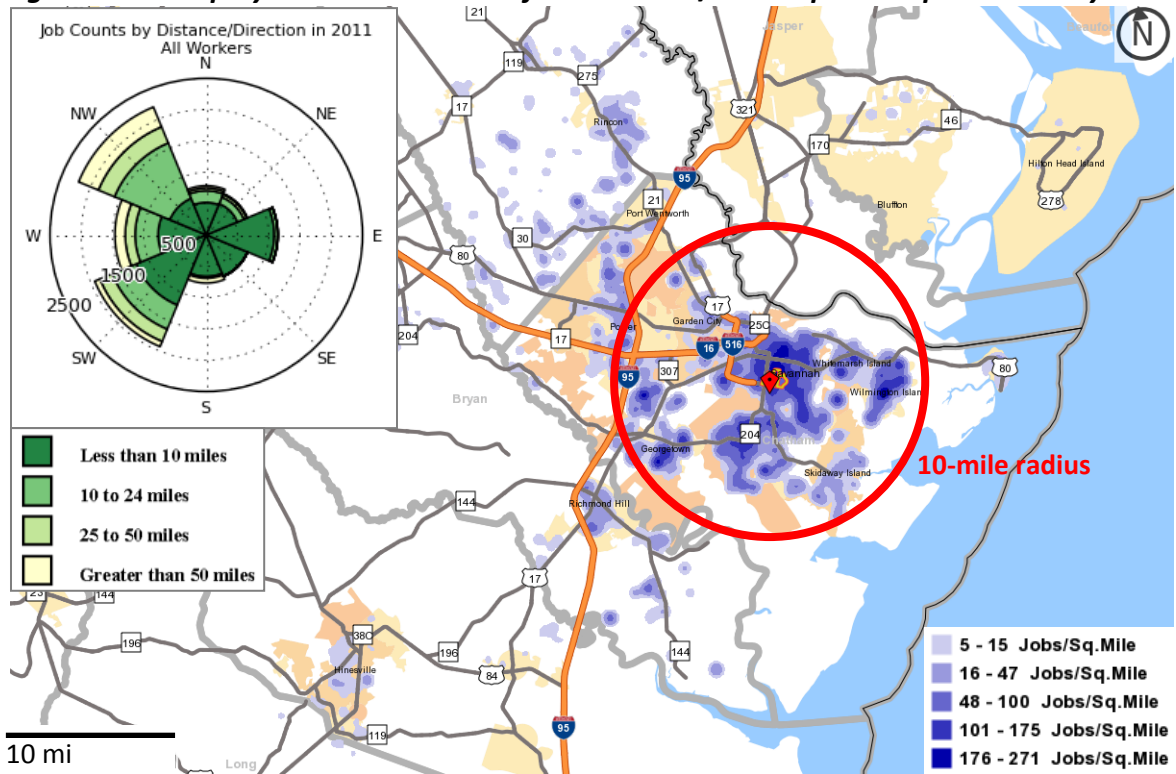




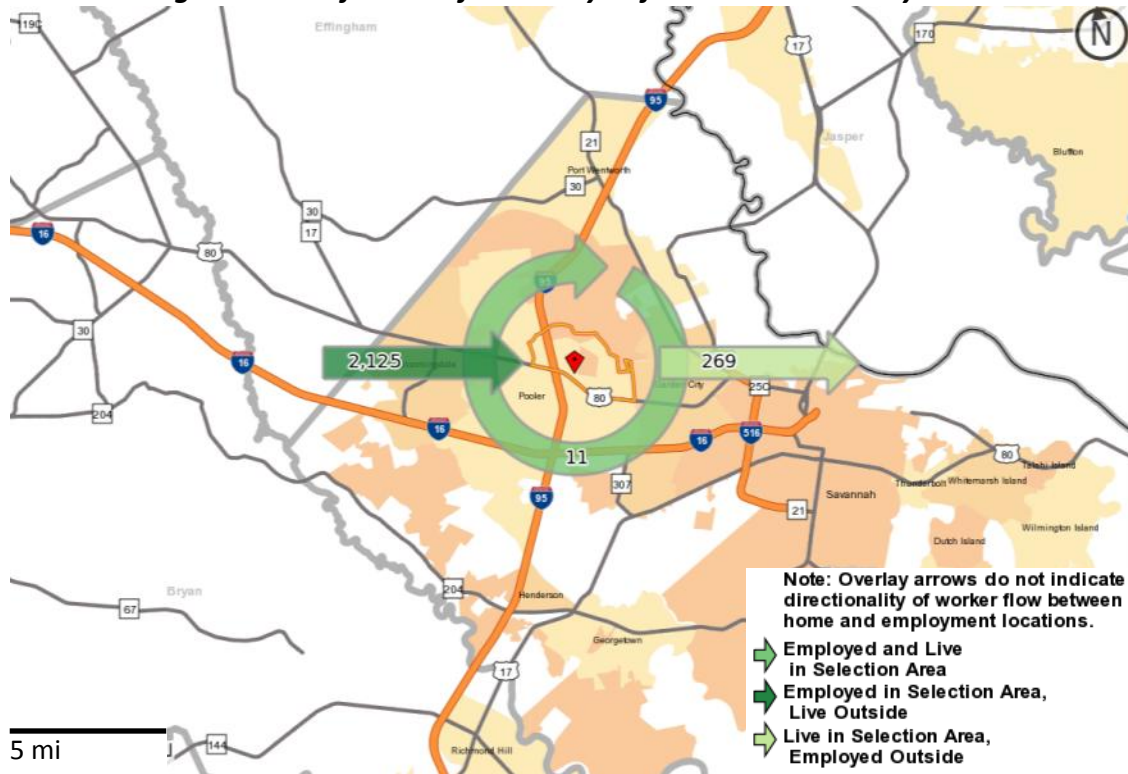
**Figure 4-10: Inflow-Outflow Analysis for Memorial/St. Joseph's Hospitals Activity Area**



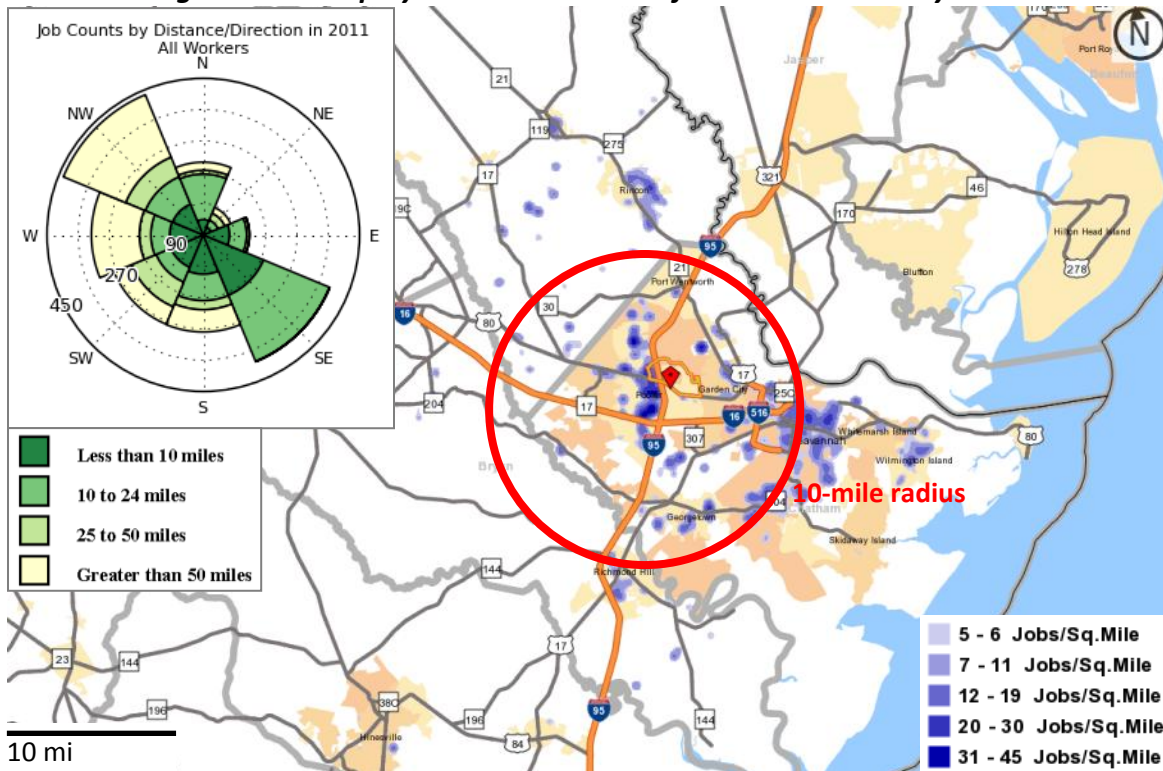
**Figure 4-11: Employee Home Locations for Memorial/St. Joseph's Hospitals Activity Area**



**Figure 4-12: Inflow-Outflow Analysis for JCB Plant Activity Area**

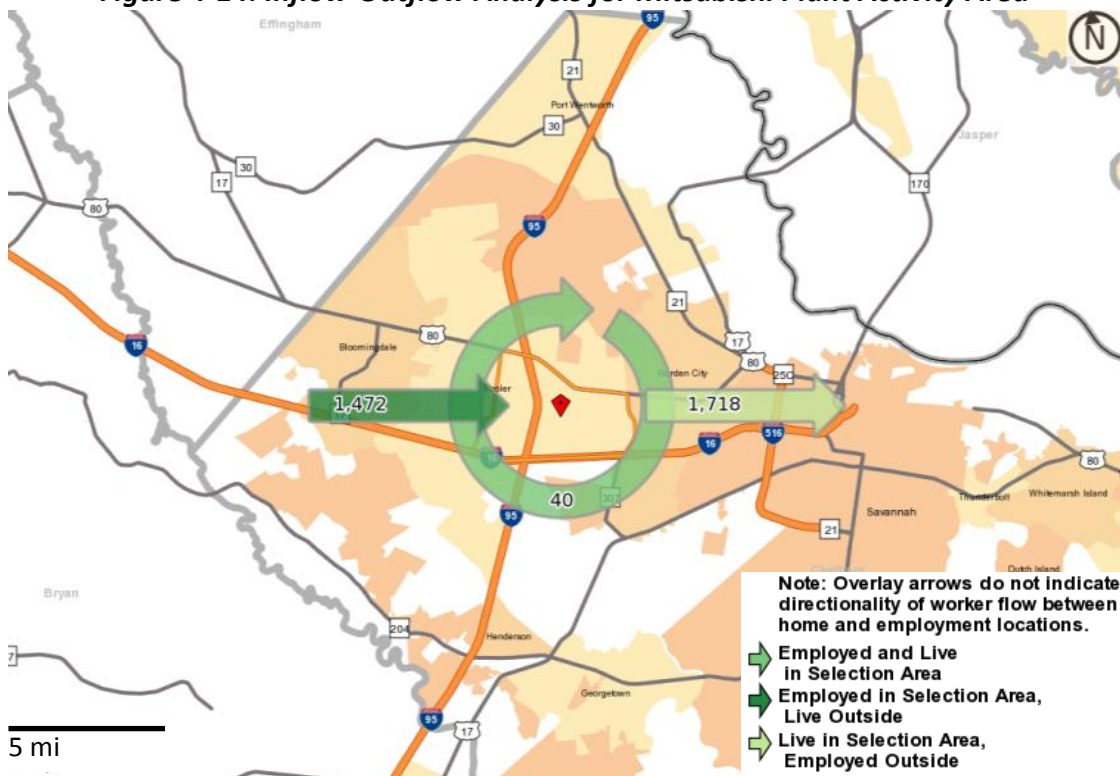


**Figure 4-13: Employee Home Locations for JCB Plant Activity Area**

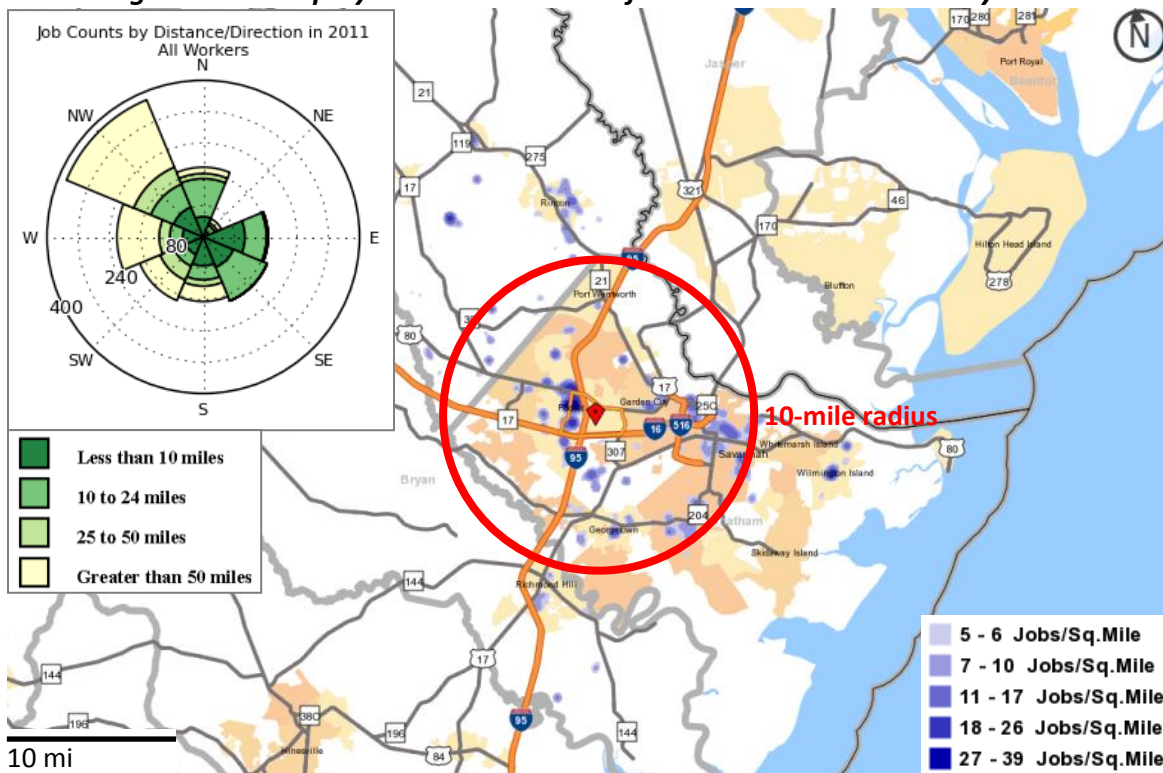




**Figure 4-14: Inflow-Outflow Analysis for Mitsubishi Plant Activity Area**



**Figure 4-15: Employee Home Locations for Mitsubishi Plant Activity Area**







Map of the Chesapeake Bay area showing worker flow between home and employment locations. The map highlights the selection area (Dutch Island) and surrounding regions. Three green arrows indicate worker flow: 791 workers employed and live in the selection area, 703 workers employed in the selection area but live outside, and 14 workers living in the selection area but employed outside. A scale bar indicates 5 miles.

**Job Counts by Direction/Direction in 2011**  
All Workers

**Distance from City Center**

- Less than 10 miles
- 10 to 24 miles
- 25 to 50 miles
- Greater than 50 miles

**Job Density by Direction**

- 5 - 6 Jobs/Sq.Mile
- 7 - 9 Jobs/Sq.Mile
- 10 - 15 Jobs/Sq.Mile
- 16 - 24 Jobs/Sq.Mile
- 25 - 35 Jobs/Sq.Mile

**10-mile radius**

**10 mi**



## 4.2 Employer-Provided Travel Pattern Information

This project has included extensive outreach to stakeholders, including transit service providers (Chatham Area Transit and Coastal Regional Commission), local government agency staff and major employers. Some major employers have provided additional information for use in this study regarding employee home locations. This information has been mapped to determine actual commute patterns for those employers.

### *Gulfstream Employment Travel Patterns*

Gulfstream provided employee home location data by zip code for 7,576 employees. ZIP codes containing fewer than 20 employees within Georgia or fewer than 10 within South Carolina were redacted in order to protect employee privacy. **Figure 4-22** presents this information. Areas of white are areas with no employees or redacted data. Percentages of employees by county are as follows:

- 10.0 percent from Bryan County
- 2.7 percent from Bulloch County
- 54.1 percent from Chatham County
- 26.9 percent from Effingham County
- 1.3 percent from Liberty County
- 5.0 percent from all other locations

As shown in **Figure 4-22**, there is a large concentration of Gulfstream employees coming from the SR 21 corridor in Effingham County. The employee distribution data provided by Gulfstream appears to be consistent with data that was collected from LEHD for the Airport/Gulfstream area. Although the majority of workers come from Chatham County, higher numbers of employees as a share of total ZIP code population come from Effingham County.

### *Home Depot Distribution Center Employment Travel Patterns*

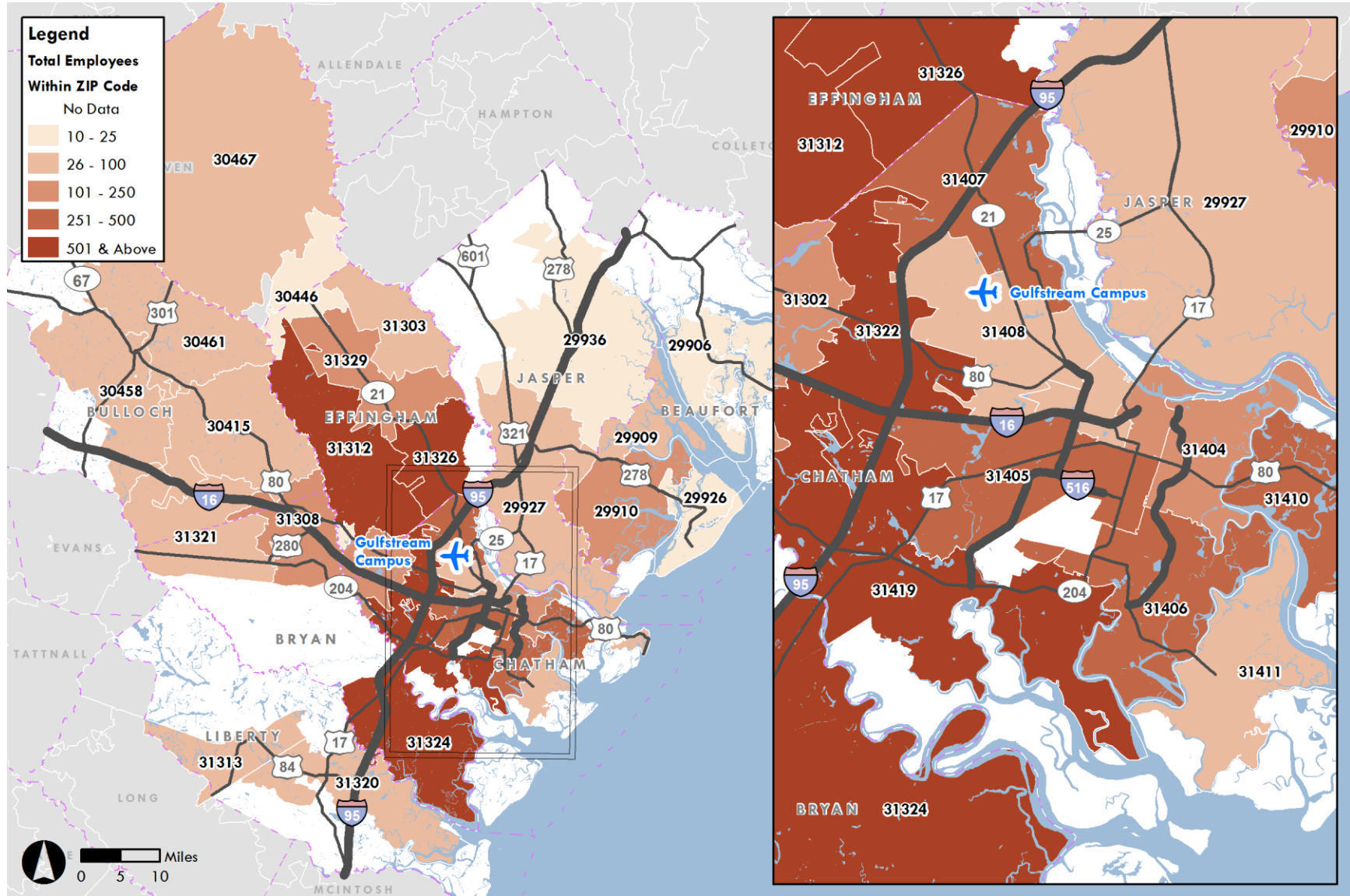
Home Depot also provided employee home location data by zip code for its 240 employees at its distribution center located in the Crossroads Business Park. **Figure 4-23** presents this information. Percentages of employees by county are as follows:

- 5.0 percent from Bryan County
- 4.2 percent from Bulloch County
- 54.6 percent from Chatham County
- 13.3 percent from Effingham County
- 20.8 percent from Liberty County
- 2.1 percent from all other locations

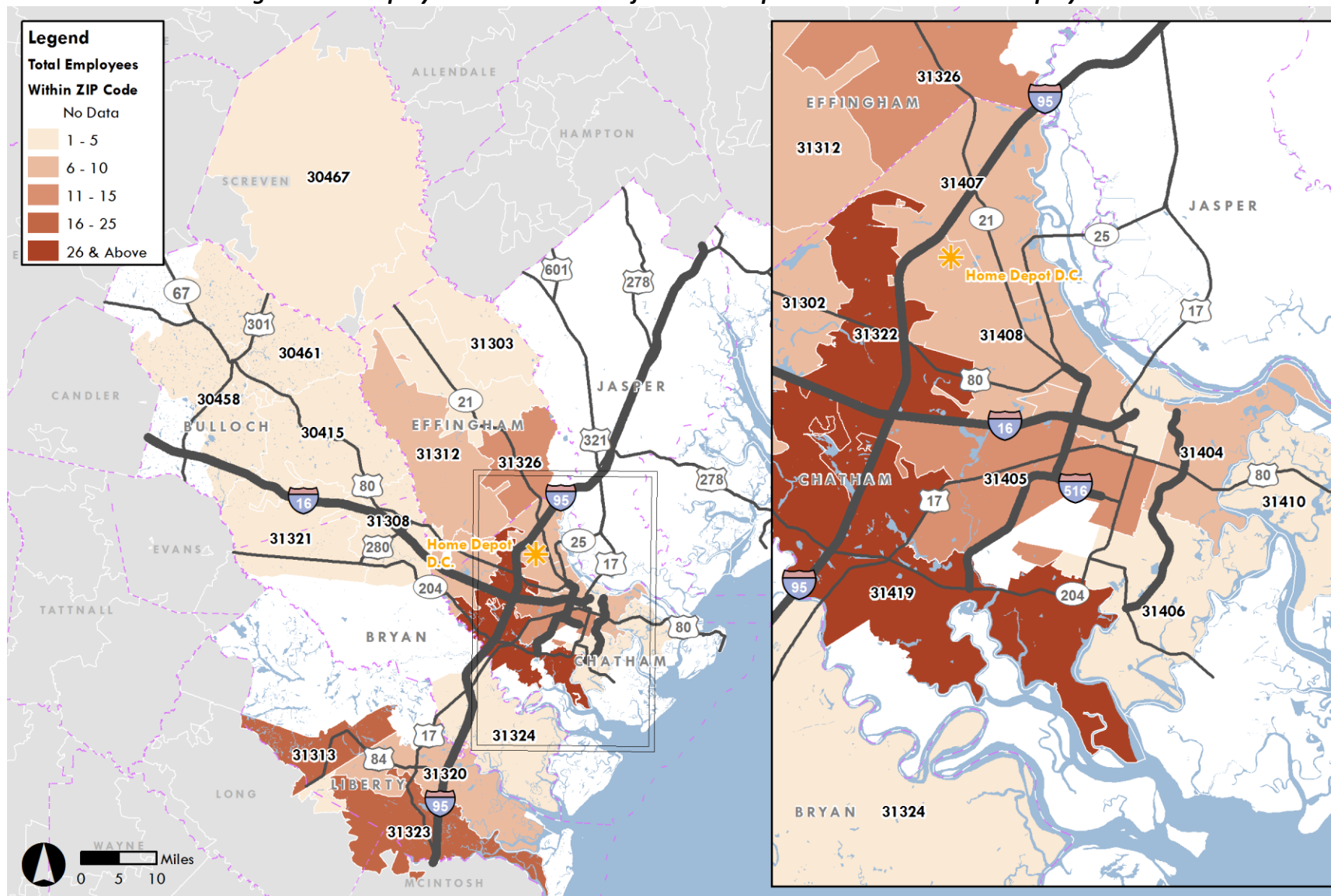
As shown in **Figure 4-23**, there is a large concentration of Home Depot employees coming from the south along the I-95 corridor and from Southside Savannah.



**Figure 4-22 Employee Home Locations for Gulfstream Employees**



**Figure 4-23 Employee Home Locations for Home Depot Distribution Center Employees**





## *Hunter Army Airfield*

As noted earlier in this Tech Memo, LEHD does not include military personnel. However, as part of this project's stakeholder outreach process, the study team was able to collect employment information for Hunter Army Airfield. Representatives of Hunter informed the consultant team that there are presently 5,900 service members assigned to the base. A small number of these service members live on-base (there are 642 homes on-base). There are an additional 4,000 civilian employees that work on-base. Thus, total employment (military and civilian) coming on-base on a daily basis typically exceeds 9,000. Of the service members assigned on-base, approximately 75 percent reside either in Savannah or unincorporated Chatham County. A large portion of the remaining 25 percent is estimated to come from the Richmond Hill area. Resident location information was not available for civilian employment but is assumed to be similar.

## *Fort Stewart*

Representatives of Hunter Army Airfield were also able to provide some employment information for Fort Stewart. There are over 19,000 military personnel assigned to Fort Stewart. Approximately 75 percent reside off post. There are an additional 3,900 civilian employees working at Fort Stewart. Of the military personnel residing off base, approximately one half live in the Hinesville area. Another 15 percent live in Savannah and an additional 15 percent live in Richmond Hill. The remaining 20 percent reside in other communities such as Ludowici, Midway, Pembroke and Glennville.

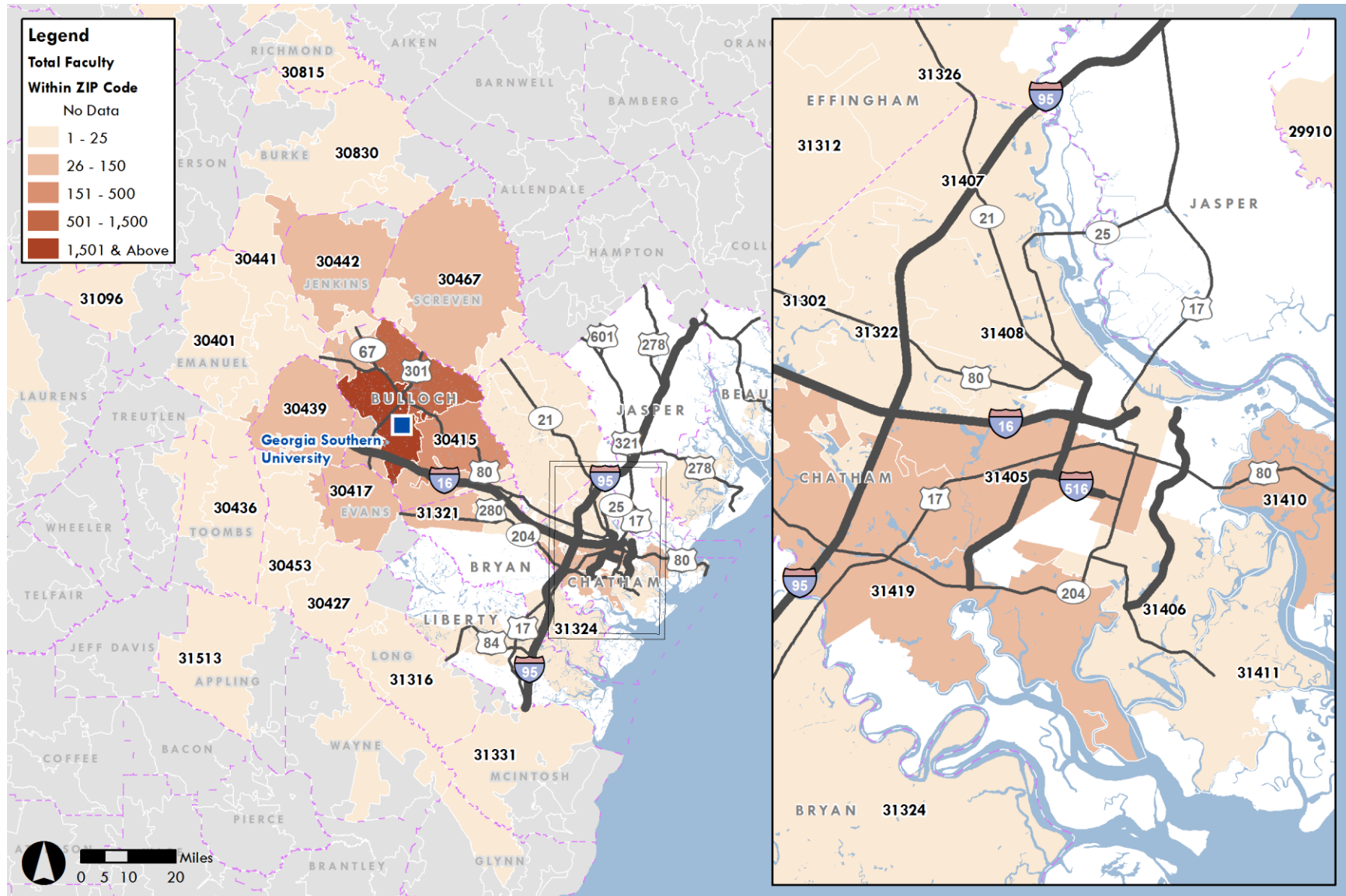
## *Georgia Southern*

Georgia Southern University is located in Statesboro with an enrollment of 20,500 students. Faculty and student parking permits by ZIP code were provided by university staff. Of 5,299 provided faculty parking permits, 5,265 were identifiable after removing erroneous data or permits that were missing ZIP code information (i.e., 0.6 percent of the permits were unidentifiable). Of 20,266 provided student parking permits, 19,984 contained identifiable ZIP codes; 242 or 1.2 percent of student permits were not identifiable. Because students may be from out-of-state or may list a parent's or guardian's address in other counties, ZIP code data for students is not as accurate as faculty data. Over 51.6 percent of Georgia Southern students, compared to just 9.8 percent of faculty, list a ZIP code outside of the study area. Percentages of faculty and students by county are as follows:

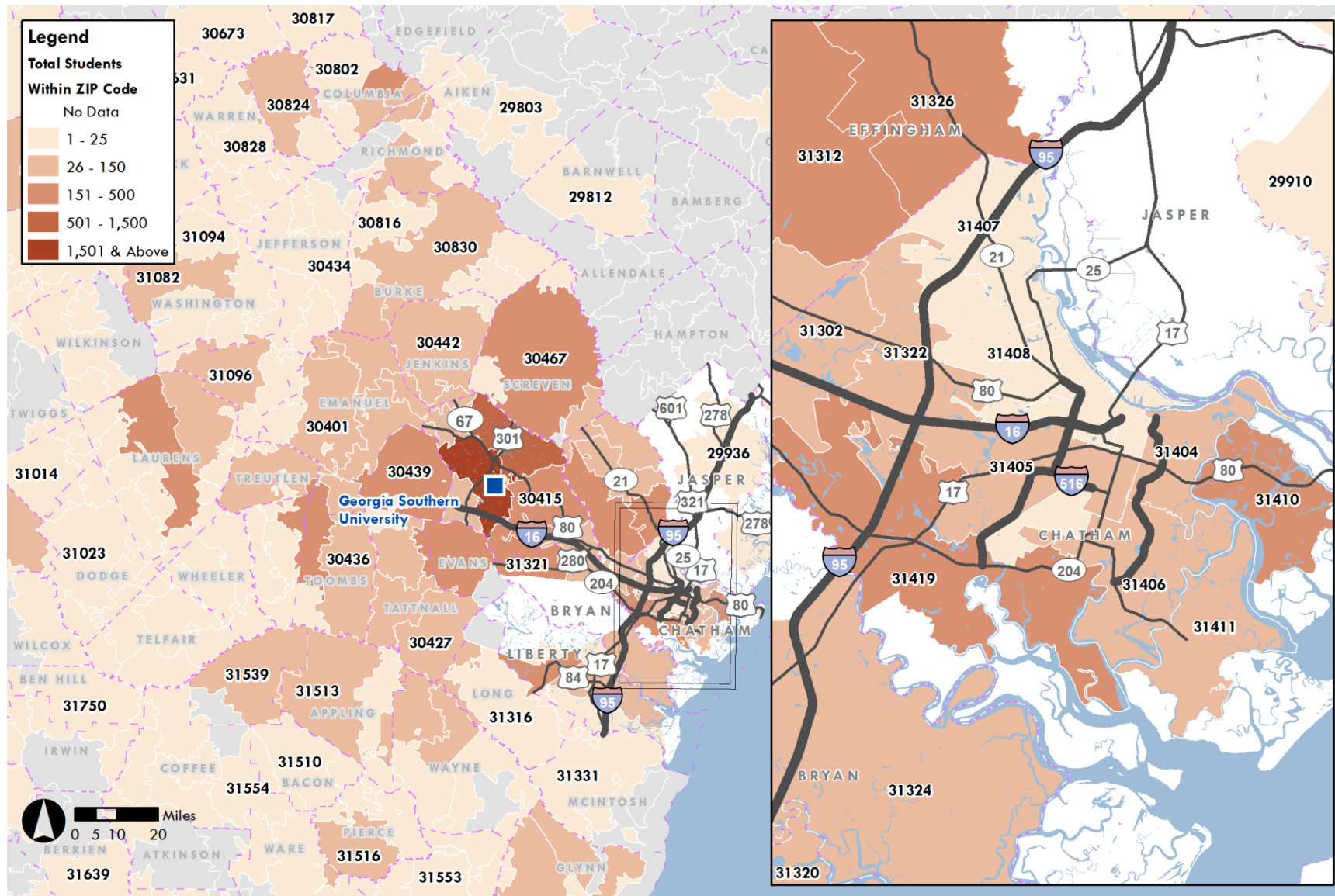
- Bulloch County – 84.1% of faculty and 36.0% of students
- Bryan County – 1.8% of faculty and 2.3% of students
- Chatham County – 3.6% of faculty and 4.6% of students
- Effingham County – 0.5% of faculty and 4.2% of students
- Liberty County – 0.1% of faculty and 1.2% of students
- Other Locations – 98% of faculty and 51.6% of students

Faculty home locations are closest to the University's grounds in Bulloch County followed by ZIP codes surrounding Bulloch County and also in Chatham County. Student parking permit filing locations are also mostly in Bulloch County but over 4 percent each come from Effingham and Chatham Counties.

**Figure 4-24 Faculty Home Locations for Georgia Southern University**



**Figure 4-25 Student Home Locations for Georgia Southern University**



## 5. Existing Park and Ride Lots

A park and ride lot is a parking facility serving as a transit or rideshare (i.e., carpool and vanpool) pick-up point for commuters. In rural or suburban settings, park and ride lots typically utilize dedicated parking facilities at convenient locations offering easy freeway access or take advantage of privately owned parking lots such as churches, malls and restaurants in "bedroom" or other local communities where long distance commuting is common.

The Georgia Department of Transportation (GDOT) Intermodal Division offers Georgia residents a network of park & ride lots located throughout the state. Of these, six are located within the five Georgia counties in the study area. **Table 5-1** provides location information and the number of parking spaces at each lot.

**Table 5-1: Georgia DOT Existing Park and Ride Lots in the Study Area**

County	Lot Name/ Location	Number of Parking Spaces
Bryan	I-16 & US 280/SR 30	35
Bulloch	SR 26 North of Statesboro	30
Chatham	I-95 & SR 204	32
	I-95 & SR 21	33
Effingham	County Courthouse	53
	City of Guyton	20

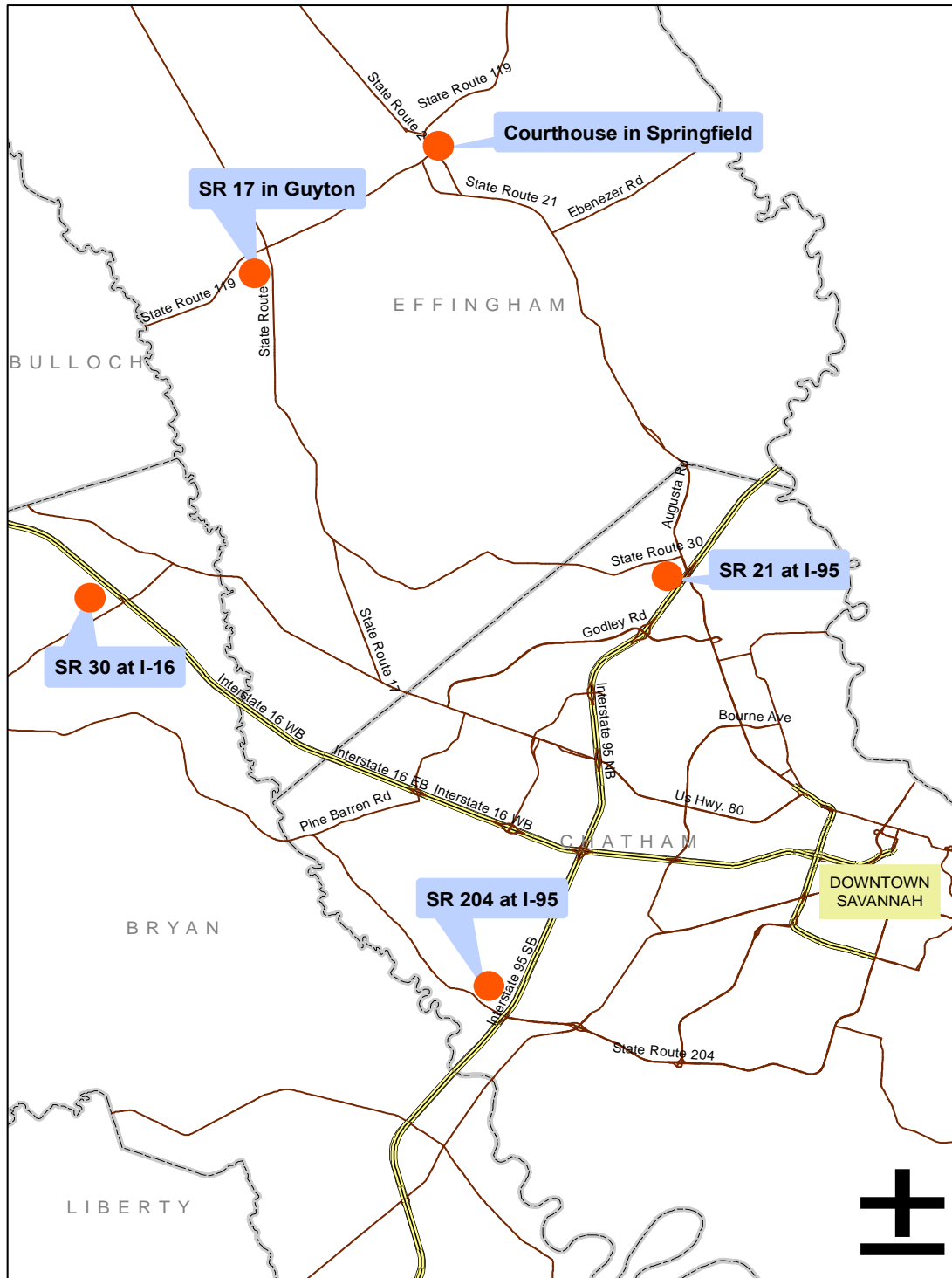
*Sources: Georgia Department of Transportation, Intermodal Division*

Of these, the lots in Bryan, Chatham, and Effingham Counties were examined in more detail due to their proximity to key commute corridors. **Figure 5-1** illustrates the location of these five lots. A windshield survey of these five lots revealed characteristics regarding utilization, lighting, signage, accessibility, and expansion potential, and is summarized in **Table 5-2**.

In general, the windshield survey found the following.

- About 20-35 spaces at each lot
- Utilization varies by location (40% - 110%)
- Limited way-finding signage
- Most require restriping and lighting
- Expansion opportunities may exist

**Figure 5-1: GDOT Rideshare Lots in the Savannah Area**



Created by Chatham County-Savannah MPC  
March 8, 2007

0 2.5 5 10 Miles



**Table 5-2: Existing Park & Ride Lots and Characteristics**

	<b>US 280/GA 30 &amp; I-16</b>	<b>GA 204 &amp; I-95</b>	<b>GA 21 &amp; I-95</b>	<b>Springfield Courthouse</b>	<b>Guyton Lot</b>
<b>Capacity</b>	35	32	33	53	20
<b>Utilization</b>	Approx. 40%	Approx. 60%	At Capacity	Unknown	Approx 40%
<b>Lighting</b>	Yes	None	None	Yes	Yes
<b>Signage</b>	SB only on US 280/GA 30	East of lot on GA 204	Limited (NB on GA 21)	Some directing to general area, but none off Laurel St.	Yes
<b>Accessibility</b>	Good	Difficult	Good	Good	Good
<b>Expansion Potential</b>	Yes	Yes	Yes	No	Yes
<b>Notes</b>	Requires restriping; North of I-16 light industrial uses, sparse land development	Requires restriping	Requires restriping; Mostly Effingham plates, some SC	Not clear which spaces are designated park and ride	Requires restriping

## 6. Conclusions and Proposed Priority Corridors

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Analyses completed in this study and presented in this Tech Memo have been used to identify key commuter corridors that should be the focus for identifying potential locations for park-and-ride lots. Key observations regarding regional demographic and travel patterns (from U.S. Census and CORE MPO travel demand model information) are as follows:

- The highest population growth rates are projected for Effingham and Bryan Counties;
- Forecasts reflect significant population and employment growth along and west of the I-95 corridor;
- Over two-thirds of work trips from Effingham and Bryan Counties are leaving those counties for work in other counties;
- Over three-quarters of work trips from Liberty and Bulloch Counties are remaining within those counties; and
- A majority of work trips originating in Jasper and Beaufort Counties in South Carolina are remaining within that state.

Key findings from the activity center analysis that was conducted with Census LEHD information and with employee home location data from major employers are as follows:

- The highest employment and employment density are in Downtown Savannah;
- Other areas with significant employment and densities include:
  - Gulfstream/Airport
  - Hospitals Area
  - Hunter Army Airfield
  - Oglethorpe Mall and Southside Areas
- Mitsubishi/Mega Site has high forecast for employment and could be a future transit service market should those employment forecasts materialize.

The spatial analysis of work travel patterns completed with LEHD suggests the primary long distance commuter corridors are:

- Northwest (SR 21)
- West (US 80 and I-16)
- South (US 17 and I-95)

These corridors appear to be major commuter shed corridors for multiple employment centers. For example, the SR 21 corridor is a major commuter corridor for Downtown Savannah and Airport/Gulfstream employment trips. The southern I-95 and US 17 corridor is a major commuter corridor for Downtown Savannah, Hunter Army Airfield, Southside employment zones and the Airport Gulfstream area.

There are existing GDOT rideshare lots within these corridors, but these lots tend to be small in size, not well-marked and sometimes difficult to access. It is recommended that park and ride lot site evaluations in the next phase of this study focus on these three key long distance commuter corridors.