Southwest Georgia Interstate Study

Existing Conditions Final Technical Memorandum

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1.0 Background

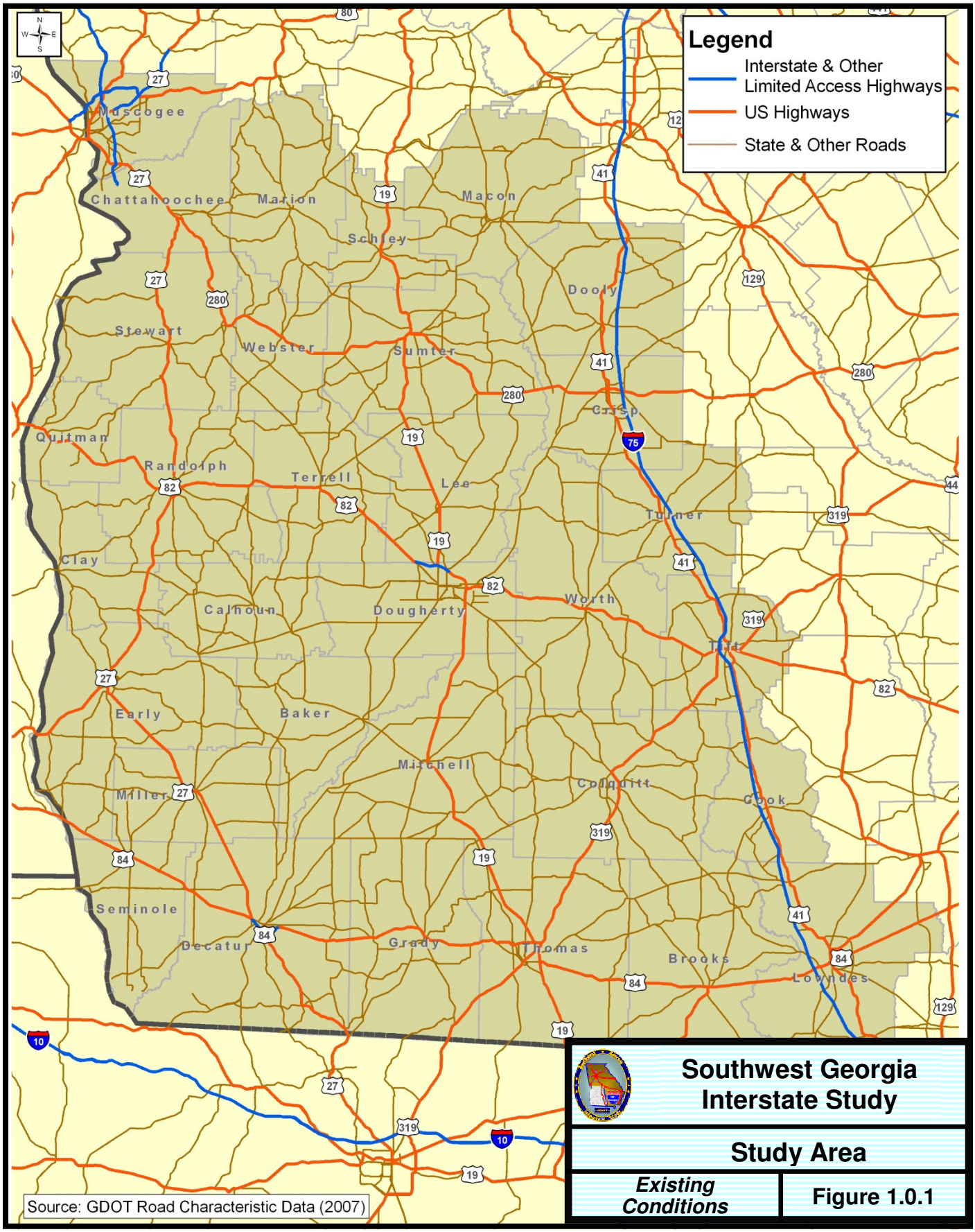
The Georgia Department of Transportation identified the need to study the travel conditions within southwest Georgia to determine if a freeway connecting Albany to the Interstate system was warranted. The study will identify transportation needs, examine potential alignments/corridors, and develop cost estimates for study-recommended improvements.

The study area includes 32 counties in southwest Georgia located west of I-75, from the City of Columbus south to the Florida state line and west to the Alabama state line. Counties included in the study area are: Baker, Brooks, Calhoun, Chattahoochee, Clay, Colquitt, Cook, Crisp, Decatur, Dooly, Dougherty, Early, Grady, Lee, Lowndes, Macon, Marion, Miller, Mitchell, Muscogee, Quitman, Randolph, Schley, Seminole, Stewart, Sumter, Terrell, Thomas, Tift, Turner, Webster, and Worth. The study will investigate all of southwest Georgia and identify the various capacity and operational needs to improve the region's access to the existing interstate system (I-75, I-185, and I-10). Figure 1.0.1 identifies the study area.

A detailed analysis of the existing conditions was performed for the Southwest Georgia Interstate Study area. This analysis included all facets of conditions in the study area from demographics, to land use to travel conditions. Some of the information presented in this Technical Memorandum summarizes information from previous technical memorandums as well as the results from the analysis of travel conditions. In addition, previous studies were collected and reviewed to build upon prior work. A list of the previous studies collected and reviewed is listed in Appendix A.

2.0 Socio-Economic Data

A comprehensive collection and review of socioeconomic and demographic data for the study area was performed. These data provided valuable insights to the unique characteristics of the residents and employees of the study area. In addition, this information was used to assist with the development and application of the travel demand model as well as the development of the Public Involvement Plan.


Legend
Interstate & Other Limited Access Highways
US Highways
State & Other Roads
Muscogee
Chattahoochee
Marion
Macon
Schley
Dooly
Stewart
Webster
Sumter
Crisp
Quitman
Randolph
Terrell
Lee
Turner
Clay
Calhoun
Dougherty
Worth
Tift
Early
Baker
Mitchell
Colquitt
Cook
Miller
Seminole
Decatur
Grady
Thomas
Brooks
Lowndes
Source: GDOT Road Characteristic Data (2007)
Southwest Georgia Interstate Study
Study Area
Existing Conditions
Figure 1.0.1

2.1 Population

Population and employment data are some of the key data inputs to the development and application of the travel demand model used for this study. The base year (2006) population and employment information was developed for the application of the travel demand model for the Southwest Georgia Interstate Study (SWGIS) area transportation system to evaluate existing conditions. Reliable data is needed to ensure that the transportation model accurately reflects current transportation system conditions. Population and employment data was collected and developed for the study area as well as the rest of the country. The travel demand model developed for this study encompasses the entire continental United States to improve the model's representation of inter- and intra-state trips as well as freight and goods movements. The detailed summary of the collection and preparation of the base year data is documented in the *Socio-Economic and Demographic Technical Memorandum.*

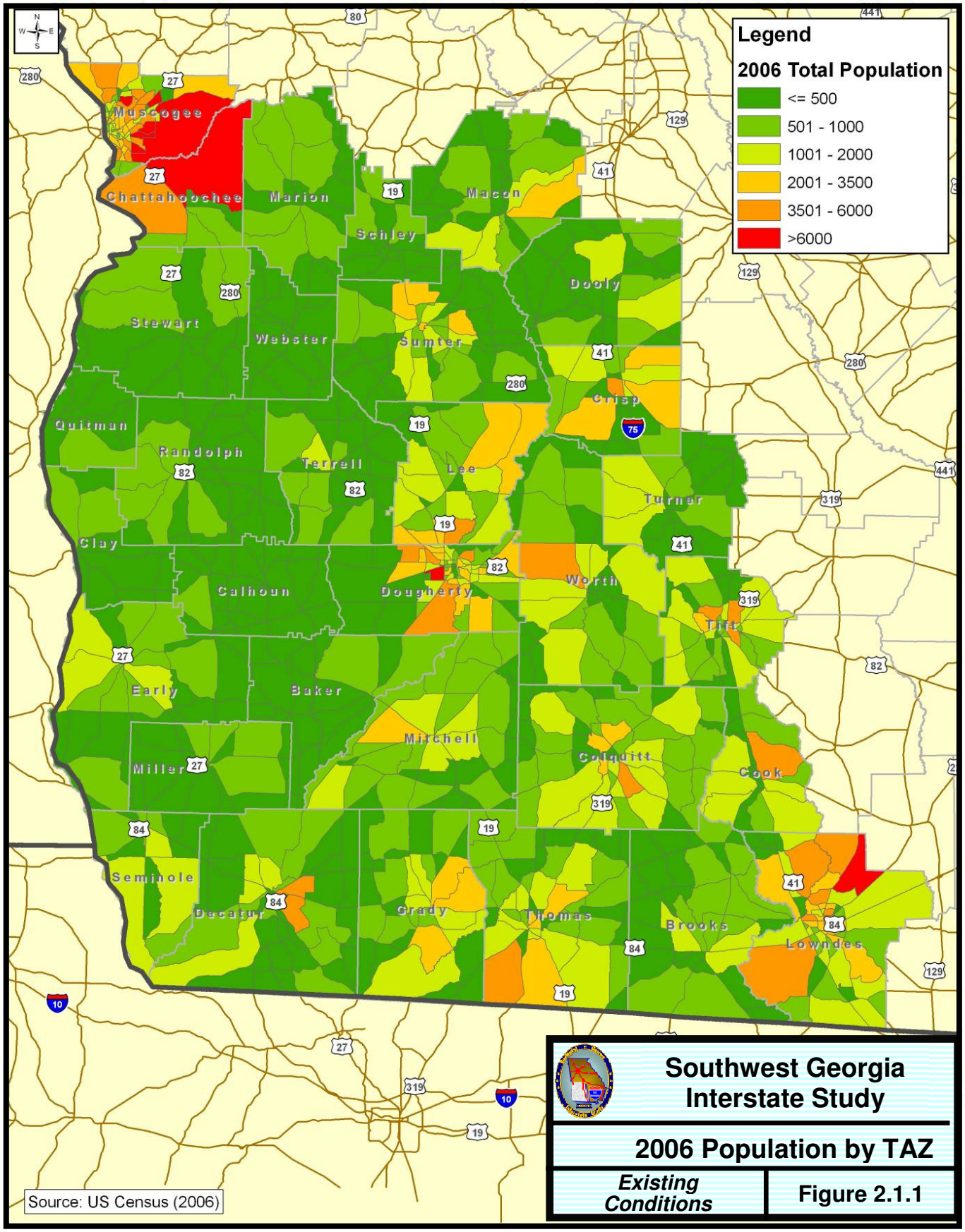
The county level population was collected for the years 1970, 1980, 1990 and 2000. The 2006 population data was prepared based on the Census data county estimates for 2000 and 2006. Census tract forecasts were disaggregated from 2006 county level population estimates based on their share of 2000 population. Traffic analysis zones (TAZ) were defined as subdivisions of census tracts within the study area. Population by county is listed in Table 2.1.1 and Figure 2.1.1 shows the 2006 population estimates by TAZ. The largest concentrations of population are located in the urban areas of Columbus, Albany and Valdosta.

Figure 2.1.2 illustrates the change in population by county between 1990 and 2006. Population grew by 12.0 percent between 1990 and 2006 from 769,120 to 861,040. There has been a slow but steady growth in population in the study area. The largest rate of growth occurred in Lee County which doubled in population from 16,250 to 32,495. However, the largest increase in population occurred in Lowndes County which increased by 21,863 from 75,981 to 97,844.

Table 2.1.1
County Population 1970 - 2006

County	1970	1980	1990	2000	2006
Baker	3,875	3,808	3,615	4,074	4,098
Brooks	13,739	15,255	15,398	16,450	16,464
Calhoun	6,606	5,717	5,013	6,320	6,094
Chattahoochee	25,813	21,732	16,934	14,882	14,041
Clay	3,636	3,553	3,364	3,357	3,180
Colquitt	32,200	35,376	36,645	42,053	44,821
Cook	12,129	13,490	13,456	15,771	16,333
Crisp	18,087	19,489	20,011	21,996	22,051
Decatur	22,310	25,495	25,511	28,240	28,665
Dooly	10,404	10,826	9,901	11,525	11,748
Dougherty	89,639	100,718	96,311	96,065	94,773
Early	12,682	13,158	11,854	12,354	12,065
Grady	17,826	19,845	20,279	23,659	25,082
Lee	7,044	11,684	16,250	24,757	32,495
Lowndes	55,112	67,972	75,981	92,115	97,844
Macon	15,276	14,003	13,114	14,074	13,817
Marion	12,933	5,297	5,590	7,144	7,276
Miller	6,397	7,038	6,280	6,383	6,239
Mitchell	18,956	21,114	20,275	23,932	23,852
Muscogee	167,377	170,108	179,278	186,291	188,660
Quitman	2,180	2,357	2,209	2,598	2,486
Randolph	8,734	9,599	8,023	7,791	7,357
Schley	3,097	3,433	3,588	3,766	4,198
Seminole	7,059	9,057	9,010	9,369	9,168
Stewart	6,511	5,896	5,654	5,252	4,754
Sumter	26,931	29,360	30,228	33,200	32,490
Terrell	11,416	12,017	10,653	10,970	10,657
Thomas	34,515	38,098	38,986	42,737	45,135
Tift	27,288	32,862	34,998	38,407	41,685
Turner	8,790	9,510	8,703	9,504	9,322
Webster	2,362	2,341	2,263	2,390	2,252
Worth	14,770	18,064	19,745	21,967	21,938
TOTAL	705,694	758,272	769,120	839,393	861,040

Source: US Department of Commerce, Census Bureau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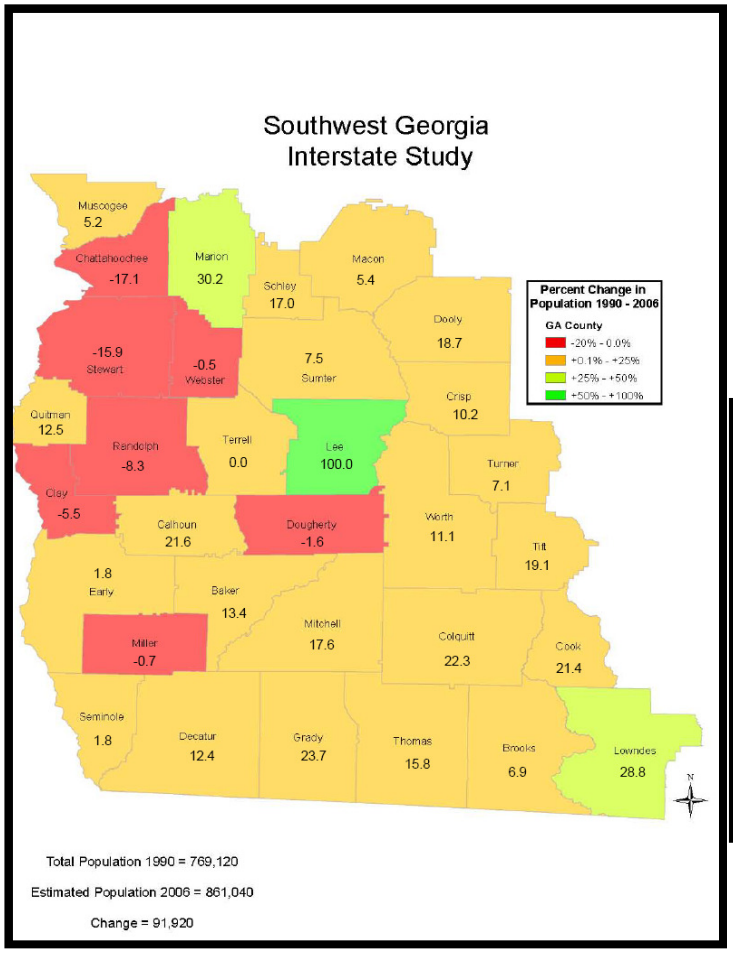
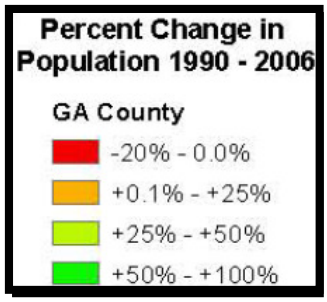
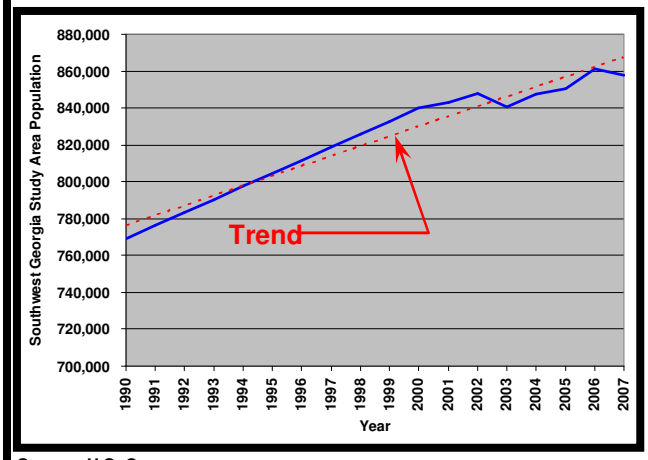
2006 Total Population
<= 500
501 - 1000
1001 - 2000
2001 - 3500
3501 - 6000
>6000
Muscogee
Chattahoochee
Marion
Schley
Macon
Dooly
Stewart
Webster
Sumter
Crisp
Quitman
Randolph
Terrell
Lee
Turner
Clay
Calhoun
Dougherty
Worth
Tift
Early
Baker
Mitchell
Colquitt
Cook
Miller
Seminole
Decatur
Grady
Thomas
Brooks
Lowndes
Source: US Census (2006)
Southwest Georgia Interstate Study
2006 Population by TAZ
Existing Conditions
Figure 2.1.1

1990 - 2006 Population Change







Source: U.S. Census

Southwest Georgia Interstate Study

Population Trend

Existing Conditions | **Figure 2.1.2**

2.2 Households

The number of households by county for 2006 was not available from the census. The number of households for 2006 was estimated by factoring the 2006 census county population estimates by the ratio of population to households from the 2000 census and applying this to the TAZ level estimated 2006 population. Households by county are listed in Table 2.2.1 below and Figure 2.2.1 shows the 2006 household estimates by TAZ.

Table 2.2.1
County Households 1970 - 2006

County	1970	1980	1990	2000	2006
Baker	1,057	1,208	1,300	1,514	1,520
Brooks	3,992	4,990	5,392	6,155	6,303
Calhoun	1,824	1,833	1,794	1,962	2,478
Chattahoochee	2,035	3,012	2,884	2,932	4,364
Clay	1,073	1,193	1,210	1,347	1,370
Colquitt	9,769	12,152	12,980	15,495	15,990
Cook	3,564	4,476	4,825	5,882	5,974
Crisp	5,465	6,559	7,287	8,337	8,526
Decatur	6,430	8,315	8,962	10,380	10,657
Dooly	3,030	3,529	3,557	3,909	4,399
Dougherty	25,190	33,043	34,163	35,552	37,234
Early	3,716	4,303	4,263	4,695	4,788
Grady	5,394	6,620	7,354	8,797	8,894
Lee	1,879	3,642	5,199	8,229	8,508
Lowndes	15,945	22,609	26,311	32,654	35,293
Macon	3,474	4,371	4,388	4,834	5,193
Marion	1,410	1,687	1,962	2,668	2,696
Miller	1,919	2,405	2,336	2,487	2,543
Mitchell	5,343	6,486	6,798	8,063	8,799
Muscogee	52,303	59,112	65,858	69,819	73,343
Quitman	588	772	857	1,047	1,048
Randolph	2,623	3,126	2,815	2,909	3,032
Schley	908	1,125	1,315	1,435	1,437
Seminole	2,117	3,051	3,137	3,573	3,689
Stewart	1,782	1,891	1,982	2,007	2,118
Sumter	7,613	9,465	10,484	12,025	12,576
Terrell	3,256	3,839	3,738	4,002	4,078
Thomas	10,112	12,789	14,323	16,309	16,760
Tift	7,877	10,737	12,184	13,919	14,493
Turner	2,611	3,078	3,043	3,435	3,494
Webster	641	756	798	911	912
Worth	4,224	5,811	6,895	8,106	8,197
TOTAL	199,164	247,985	270,394	305,389	320,704

Source: Estimated from US Department of Commerce, Census Bureau data

Again the largest concentrations of households occur in the urban areas of Albany, Columbus and Valdosta.

2.3 Employment

Employment records from the Georgia Department of Labor (GDOL) were obtained by GDOT for specific use in the Southwest Georgia Interstate Study. The records were reviewed for reasonableness and accurracy. Addresses were reviewed and revised as necessary. A database was built containing the employment information. The summary of the review and analysis of this data set is contained in the *Socioeconomic and Demographic Data Technical Memorandum*. As a final check, the total employment estimate from this database was compared to the total employment from the GDOL County Profiles for the SWGIS study area. Employment was adjusted to 355,999 to reflect the total study area employment control total. Table 2.3.1 shows the estimated employment by type for each of the counties in the study area while Figure 2.3.1 shows the distribution of estimated 2006 employment by TAZ.

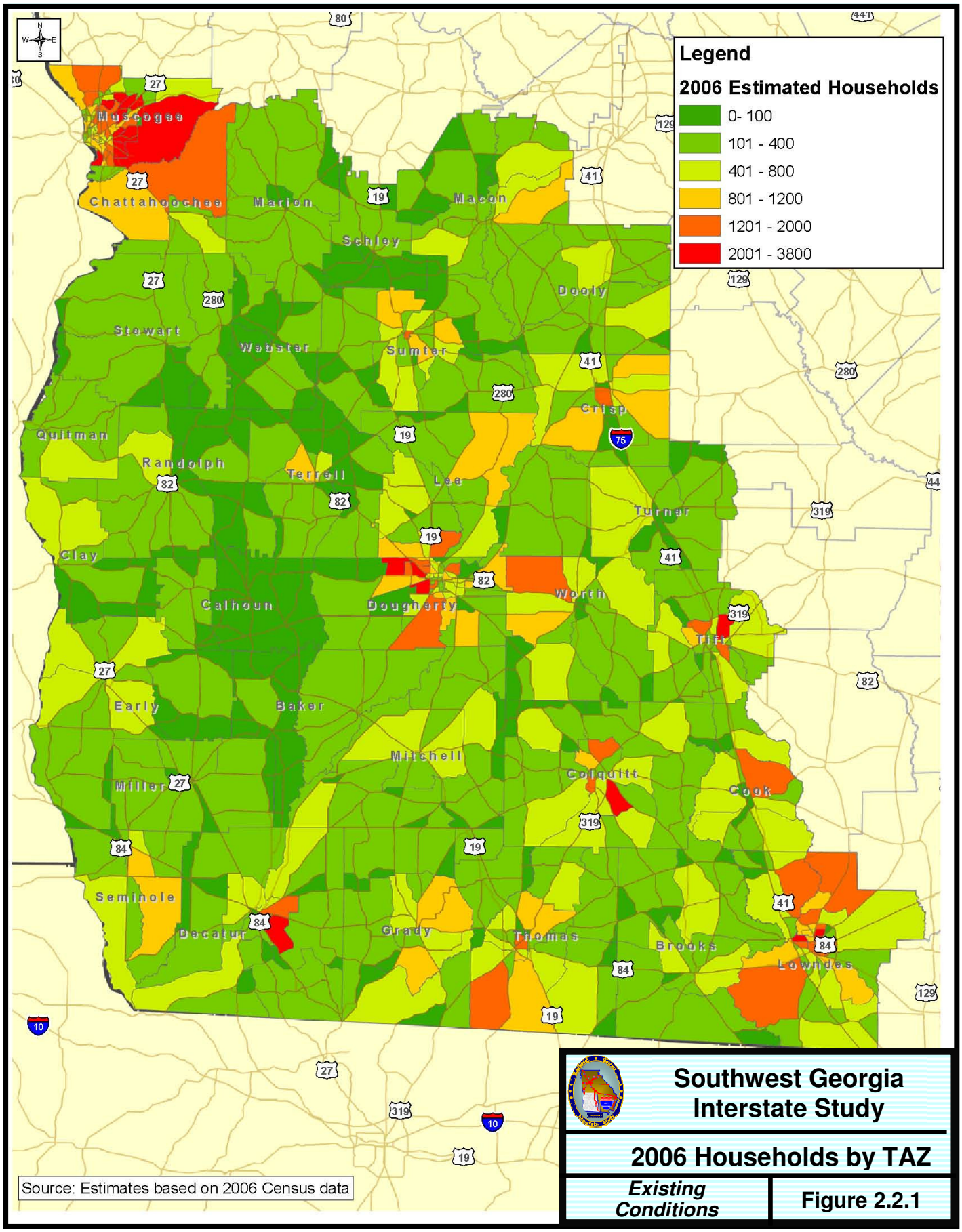

Legend
2006 Estimated Households
0- 100
101 - 400
401 - 800
801 - 1200
1201 - 2000
2001 - 3800
Muscogee
Chattahoochee
Marion
Schley
Macon
Dooly
Stewart
Webster
Sumter
Crisp
Quitman
Randolph
Terrell
Lee
Turner
Clay
Calhoun
Dougherty
Worth
Tift
Early
Baker
Mitchell
Colquitt
Cook
Miller
Seminole
Decatur
Grady
Thomas
Brooks
Lowndes
Source: Estimates based on 2006 Census data
Southwest Georgia Interstate Study
2006 Households by TAZ
Existing Conditions
Figure 2.2.1

Table 2.3.1
2006 County Employment

COUNTY	AMC	MFG	WFW	RET	SER	TOTAL
Baker	68	0	7	47	401	523
Brooks	579	555	126	282	1,472	3,015
Calhoun	185	254	72	145	936	1,592
Chattahoochee	55	0	55	87	1,186	1,382
Clay	250	0	13	101	467	831
Colquitt	2,328	3,961	715	1,885	7,333	16,221
Cook	839	1,056	138	451	2,294	4,778
Crisp	645	1,219	706	1,551	4,785	8,907
Decatur	1,372	1,379	733	1,556	5,202	10,242
Dooly	140	1,218	368	303	1,416	3,446
Dougherty	2,253	5,907	3,874	6,555	33,053	51,641
Early	524	1,014	476	366	2,315	4,696
Grady	1,107	948	428	787	3,187	6,457
Lee	1,099	228	358	541	2,644	4,870
Lowndes	3,047	5,485	2,760	8,309	29,801	49,402
Macon	344	982	89	425	1,798	3,637
Marion	218	673	30	137	656	1,714
Miller	142	34	193	234	1,094	1,697
Mitchell	576	3,344	445	830	3,654	8,849
Muscogee	4,675	9,895	2,880	11,440	69,046	97,936
Quitman	52	79	45	43	203	422
Randolph	405	194	116	169	1,318	2,202
Schley	36	772	77	73	465	1,423
Seminole	240	123	152	359	1,475	2,349
Stewart	65	110	62	92	734	1,064
Sumter	1,269	2,299	818	1,444	7,006	12,837
Terrell	119	508	256	278	1,254	2,415
Thomas	1,367	3,594	1,341	2,387	15,122	23,811
Tift	1,723	2,913	2,702	2,686	10,991	21,016
Turner	128	405	248	378	1,470	2,628
Webster	30	292	23	27	178	550
Worth	332	242	193	556	2,122	3,446
TOTAL	26,211	49,685	20,500	44,523	215,080	355,999

Source: Georgia Department of Labor
KEY: AMC = Agricultural/Mining/Construction, MFG = Manufacturing, WFW = Wholesale/Freight/Warehousing, RET = Retail, SER = Service

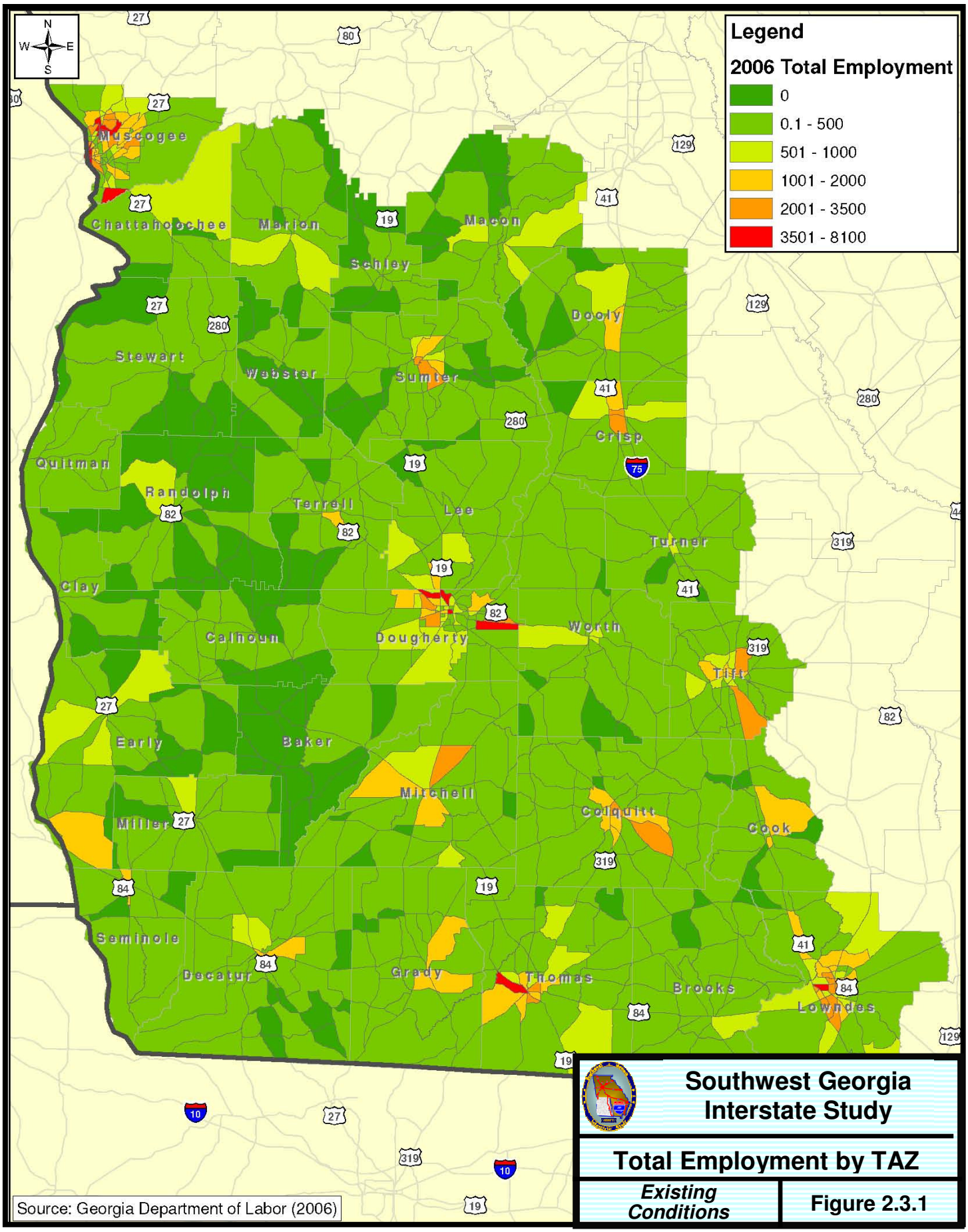
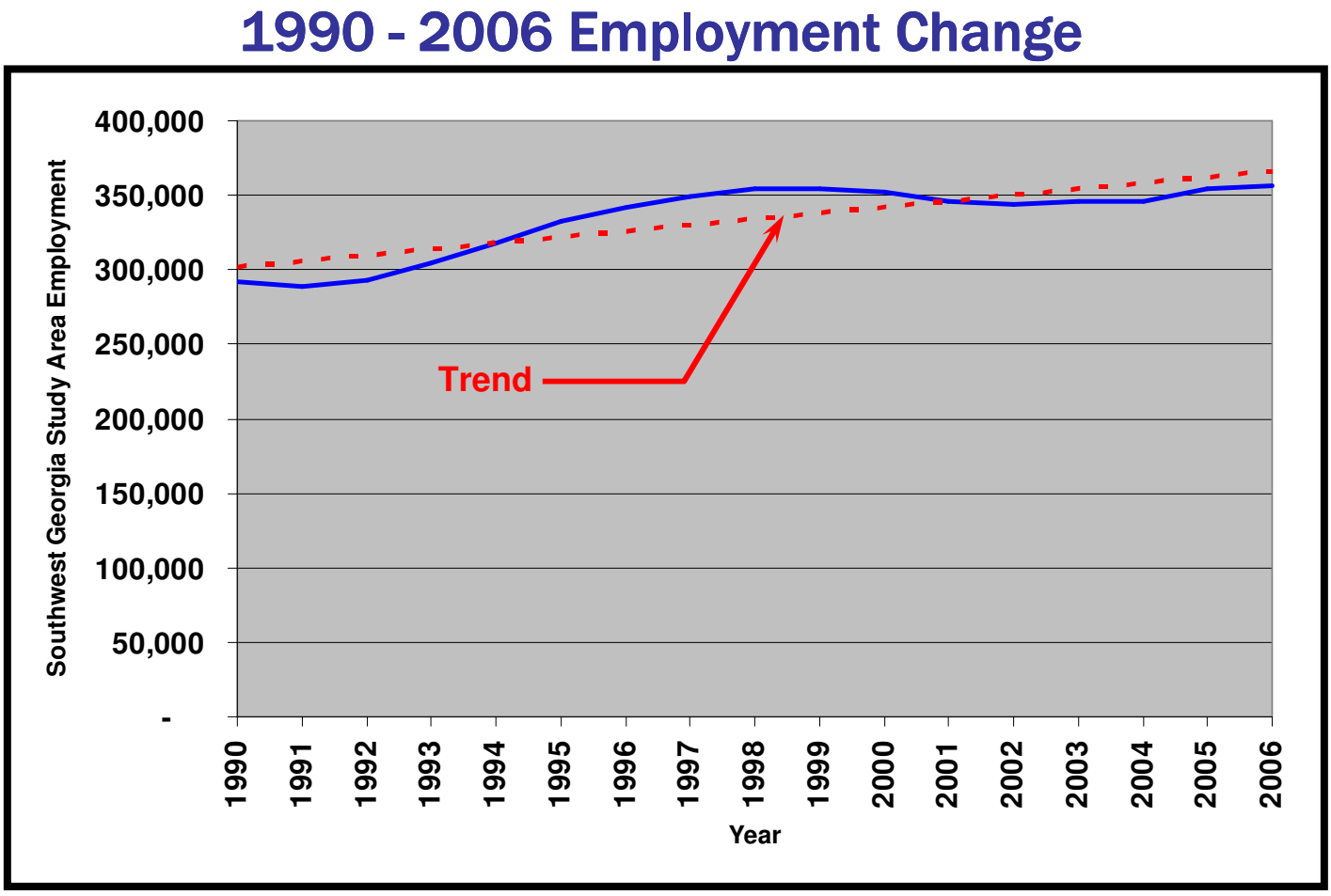

Legend
2006 Total Employment
0
0.1 - 500
501 - 1000
1001 - 2000
2001 - 3500
3501 - 8100
N
W
E
S
Muscogee
Chattahoochee
Marion
Schley
Macon
Dooly
Stewart
Webster
Sumter
Crisp
Quitman
Randolph
Terrell
Lee
Turner
Clay
Calhoun
Dougherty
Worth
Tift
Early
Baker
Mitchell
Colquitt
Cook
Miller
Seminole
Decatur
Grady
Thomas
Brooks
Lowndes
Source: Georgia Department of Labor (2006)
Southwest Georgia Interstate Study
Total Employment by TAZ
Existing Conditions
Figure 2.3.1

Figure 2.3.2 displays the actual employment and the employment trend in the study area. There was a small steady growth in employment in the study area between 1990 and 2001. There was a small decline in employment in 2001. Employment growth was flat for the next four years then it increased slightly in 2005.

Figure 2.3.2
Employment Trend



2.4 Supplemental Information for the Study Area

The US Census 2000 contains a variety of demographic characteristics that provide a broad brush picture of the region. Identifying these characteristics and understanding their impact on travel patterns within a specific project area is crucial. In additon these data can be used to assist with the design and development of a public outreach and involvement program to solict input from populations that usually do not participate in the planning process.

U.S. Executive Order 12898 defines environmental justice as the fair treatment and meaningful involvement of all people—regardless of race, ethnicity, income or education level—in transportation decision making. Environmental justice programs promote the protection of human health and the environment, empowerment via public participation, and the dissemination of relevant information to inform and educate affected communities. The 2000 Census data was used to provide detailed information about the diverse populations within the study area. The purpose of this effort is to identify EJ populations within the study area. This will assist with the examination of potential improvements in Southwest Georgia to ensure that they do not have a disproportionate adverse impacts on minority and low-income populations within the study area

The low-income and minority populations of the 32 counties located in southwest Georgia have a 2000 population of 839,393 persons. The primary data source used to identify minority populations was the 2000 U.S. Census of Population and Housing (a.k.a. the 2000 Census), which reports data on race and ethnicity at the county level. In addition to census data, information from the U.S. Department of Education's National Center for Education Statistics (2005-2006 school year), the Georgia Department of Education (2006-2007 school year), and GreatSchools, Inc. (2005-2006 school year) were reviewed to identify whether they provided more recent or more locally specific information that was useful for identifying minority populations. Using these additional data sources provided more recent and locally specific information for identifying minority and low-income populations.

The 2000 Census defines "minority" as persons who are:

- Hispanic or Latino,
- American Indian or Alaskan Native alone (not Hispanic or Latino),
- Asian alone (not Hispanic or Latino)
- Native Hawaiian and Other Pacific Islander alone (not Hispanic or Latino),
- Black or African American alone (not Hispanic or Latino),
- Some other race alone, or
- Two or more races.

The minority population concentrations identified for the study area are shown in Table 2.4.1. As this data shows, the study area has a substantially higher concentration of minority populations than the state of Georgia. The concentrations of Latinos for the study area is lower than for the state of Georgia while the study area has a higher concentration of African Americans than the state of Georgia.

Table 2.4.1
Race and Ethnicity Percentages for the State and Study Area

Race/Ethnicity	State of Georgia	Study Area Counties
Non-Latino White alone	62.70%	53.30%
Latino (of any race)	5.30%	3.60%
Non-Latino Black or African American alone	28.50%	41.00%
Non-Latino American Indian or Alaskan Native alone	0.20%	0.30%
Non-Latino Asian alone	2.10%	0.80%
Non-Latino Native Hawaiian and Other Pacific Islander alone	0.00%	0.10%
Non-Latino and some other race alone	0.10%	0.10%
Non-Latino and of two or more races	1.10%	0.90%
Minority	**37.4%**	**46.7%**

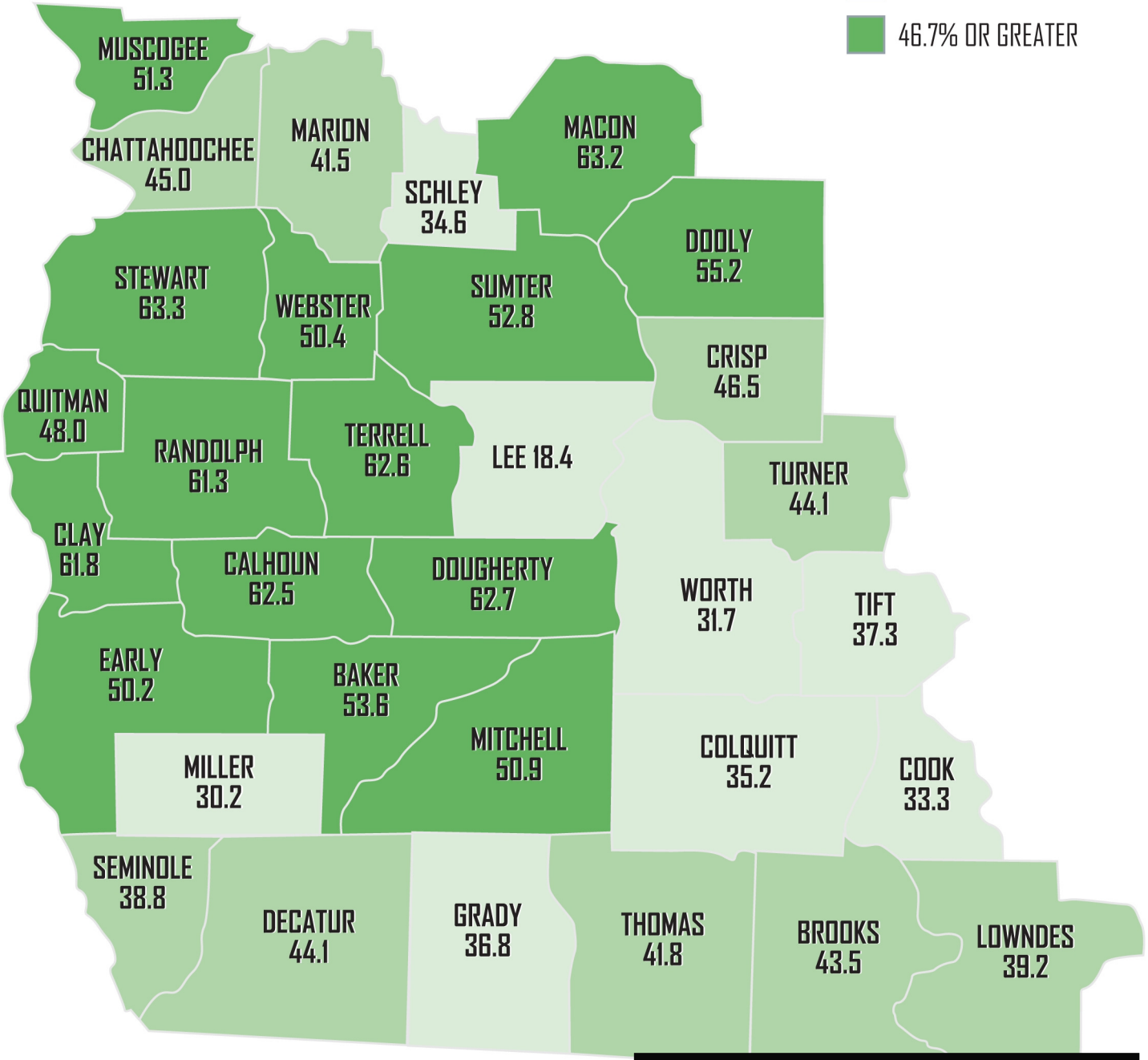
Source: US Census 2000, SF1 P8/SF3 P7 Hispanic or Latino by Race

Table 2.4.2 lists and Figure 2.4.1 displays the minority populations for each county in the study area. The data shows that percentages of minority populations in individual counties range from 18.4 percent (Lee) to 63.3 percent (Stewart). Of the study area's 32 counties, 14 counties have populations that are greater than 50.0 percent (i.e., a minority population concentration). In addition, 24 counties have minority population percentages greater than the state of Georgia (37.4 percent), and 15 counties have minority population percentages greater than the study area counties combined (46.7 percent) (i.e., a minority population concentration).

Table 2.4.2
Minority Populations in Counties in Study Area
Compared with the State of Georgia and Study Area

Area	Population	Minority Population	Percent Minority	Exceeds State Percent (37.4%)	Exceeds Study Area Percent (46.7%)
Baker	4,074	2,185	53.6%	X	X
Brooks	16,450	7,147	43.5%	X	
Calhoun	6,320	3,952	62.5%	X	X
Chattahoochee	14,882	6,701	45.0%	X	
Clay	3,357	2,075	61.8%	X	X
Colquitt	42,053	14,801	35.2%		
Cook	15,771	5,245	33.3%		
Crisp	21,996	10,218	46.5%	X	
Decatur	28,240	12,440	44.1%	X	
Dooly	11,525	6,364	55.2%	X	X
Dougherty	96,065	60,271	62.7%	X	X
Early	12,354	6,195	50.1%	X	X
Grady	23,659	8,705	36.8%		
Lee	24,757	4,554	18.4%		
Lowndes	92,115	36,123	39.2%	X	
Macon	14,074	8,890	63.2%	X	X
Marion	7,144	2,962	41.5%	X	
Miller	6,383	1,927	30.2%		
Mitchell	23,932	12,186	50.9%	X	X
Muscogee	186,291	95,623	51.3%	X	X
Quitman	2,598	1,247	48.0%	X	X
Randolph	7,791	4,775	61.3%	X	X
Schley	3,766	1,304	34.6%		
Seminole	9,369	3,635	38.8%	X	
Stewart	5,252	3,326	63.3%	X	X
Sumter	33,200	17,528	52.8%	X	X
Terrell	10,970	6,869	62.6%	X	X
Thomas	42,737	17,862	41.8%	X	

Sources: 2000 Census SF1 P8/SF3/P7 Hispanic or Latino by Race



Sources: 2000 Census SF1 P8/SF3 P7 Hispanic or Latino by Race

Southwest Georgia Interstate Study

Percent Minority Population by County

Existing Conditions | **Figure 2.4.1**

Table 2.4.3 shows the low-income population concentration for the state of Georgia and the study area. The data shows that the study area has a substantially higher concentration of low-income populations than the state of Georgia.

Table 2.4.3
Low-Income Percentages for the State and Study Area

Low-income	State of Georgia	Study Area Counties
Individuals Below Poverty Level	13.00%	20.10%

Source: US Census 2000, SF3 P87 Poverty Status in 1999 by Age

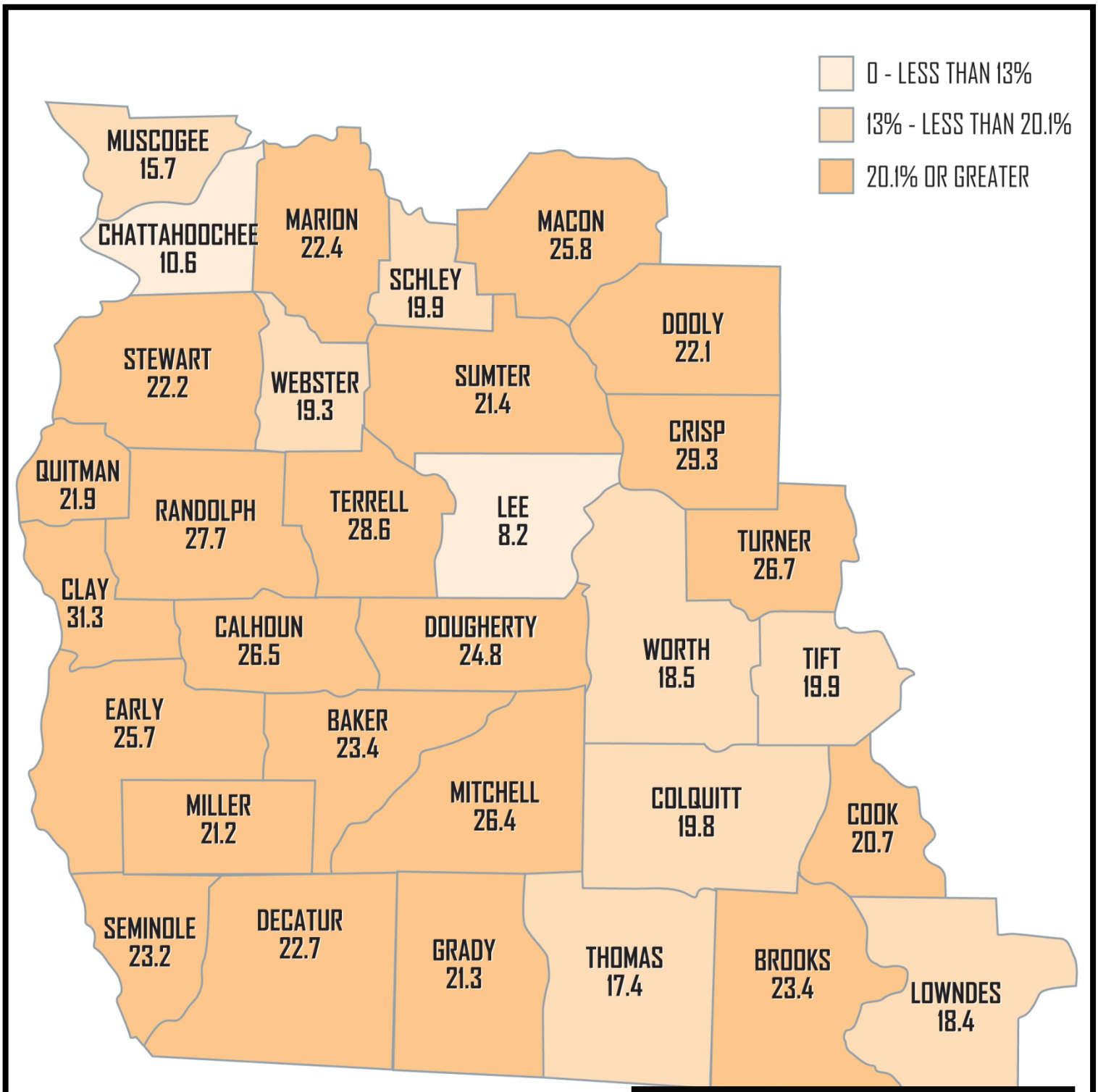
In addition to the data noted above, the low-income populations of all 32 counties in the study area were reviewed. Table 2.4.4 lists the level of low-income populations in the counties relative to the state of Georgia and the project counties combined. Additionally, this data has been presented in spatial format, by county, in Figure 2.4.2. This figure represents the level of low-income populations in the counties in the study area. It is consistent with the EPA's use of a general population and a state for comparison analyses in other Georgia environmental documents.

This evaluation revealed that the percentage of low-income individuals in the study area ranged from 8.2 percent (Lee) to 31.3 percent (Clay). Of the study area's 32 counties, 30 counties have low-income population percentages that are greater than the state of Georgia (13.0 percent), and 22 counties have low-income population percentages greater than the Southwest Georgia Interstate study area counties combined (20.1 percent) (i.e., a low-income population concentration).

Table 2.4.4
Low-Income Population in Counties in Study Area
Compared with State of Georgia and Study Area

Area	Population	Low-income Population	Percent Low-income	Exceeds State Percent (13.0%)	Exceeds Study Area Percent (18.5)
Baker	4,071	951	23.4%	X	X
Brooks	16,152	3,785	23.4%	X	X
Calhoun	5,011	1,328	26.5%	X	X
Chattahoochee	9,961	1,051	10.6%		
Clay	3,293	1,030	31.3%	X	X
Colquitt	41,396	8,205	19.8%	X	X
Cook	15,555	3,221	20.7%	X	X
Crisp	21,599	6,330	29.3%	X	X
Decatur	27,548	6,240	22.7%	X	X
Dooly	10,202	2,255	22.1%	X	X
Dougherty	92,793	22,974	24.8%	X	X
Early	12,037	3,094	25.7%	X	X
Grady	23,347	4,982	21.3%	X	X
Lee	23,807	1,958	8.2%		
Lowndes	85,144	15,622	18.3%	X	
Macon	13,076	3,377	25.8%	X	X
Marion	7,037	1,578	22.4%	X	X
Miller	6,238	1,322	21.2%	X	X
Mitchell	21,929	5,793	26.4%	X	X
Muscogee	177,184	27,741	15.7%	X	
Quitman	2,594	568	21.9%	X	X
Randolph	7,466	2,070	27.7%	X	X
Schley	3,758	746	19.9%	X	X
Seminole	9,242	2,141	23.2%	X	X
Stewart	4,941	1,097	22.2%	X	X
Sumter	31,702	6,796	21.4%	X	X
Terrell	10,748	3,069	28.6%	X	X
Thomas	41,578	7,231	17.4%	X	
Tift	37,034	7,374	19.9%	X	X
Turner	9,329	2,494	26.7%	X	X
Webster	2,384	459	19.3%	X	X
Worth	21,886	4,050	18.5%	X	X
TOTAL				30	27

Source: 2000 Census



Sources: 2000 Census SF3/P87 Poverty Status in 1999 by Age

Southwest Georgia Interstate Study

Percent Low-Income Population by County

Existing Conditions | **Figure 2.4.2**

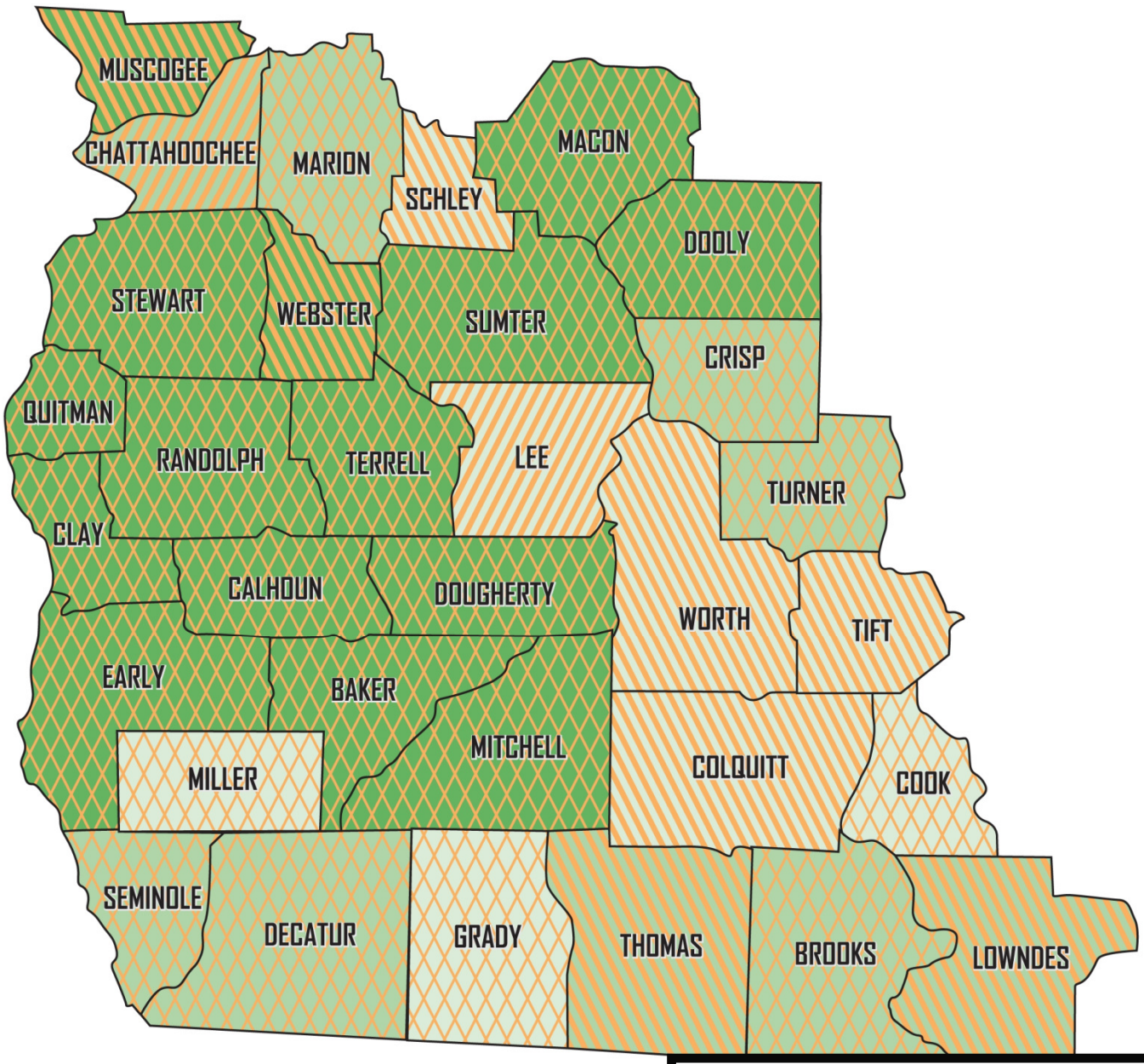
The combined data on minority populations and low-income populations in the study area were then reviewed. By comparing these results relative to the state of Georgia and then with the study area counties combined, counties were identified where minority and low-income population concentrations overlap. Table 2.4.5 shows the results of this analysis.

There were 24 counties that exceeded the minority population average for the state of Georgia (37.4 percent) and 30 counties that exceeded the low-income population average for the state of Georgia (13.0 percent). Only one county (Lee) had neither a minority population percentage nor a low-income percentage that exceeded the state of Georgia averages. Seven counties had low-income concentrations, but do not have minority concentrations, while one county had a minority concentration, but did not have a low-income concentration. Twenty-three of the 32 counties in the study area have both minority and low-income concentrations.

When comparing the minority and low-income populations of the counties in the study area to the study area counties combined, there are 15 counties that exceeded the minority population average for the combined counties (46.7 percent) and 22 counties that exceeded the low-income household average for the combined counties (20.1 percent). Only four counties had neither a minority population percentage nor a low-income percentage that exceeded the percentages of the study area counties combined. Two counties (Muscogee and Webster) had a minority concentration, but do not have low-income concentration, and nine counties do not have minority concentrations, but have low-income concentrations. Thirteen of the 32 counties in the study area have both minority and low-income concentrations.

Table 2.4.5
Combined Data Minority and Low-Income Populations
By County for the Study Area

Area	Above Georgia Minority Percentage (37.4%)	Above Georgia Low-income Percentage (13.0%)	Above Combined Minority Percentage (46.7%)	Above Combined Low-Income Percentage (20.1%)
Baker	X	X	X	X
Brooks	X	X		X
Calhoun	X	X	X	X
Chattahoochee	X			
Clay	X	X	X	X
Colquitt		X		
Cook		X		X
Crisp	X	X		X
Decatur	X	X		X
Dooly	X	X	X	X
Dougherty	X	X	X	X
Early	X	X	X	X
Grady		X		X
Lee				
Lowndes	X	X		
Macon	X	X	X	X
Marion	X	X		X
Miller		X		X
Mitchell	X	X	X	X
Muscogee	X	X	X	
Quitman	X	X	X	X
Randolph	X	X	X	X
Schley		X		
Seminole	X	X		X
Stewart	X	X	X	X
Sumter	X	X	X	X
Terrell	X	X	X	X
Thomas	X	X		
Tift		X		
Turner	X	X		X
Webster	X	X	X	
Worth		X		
TOTAL	24	30	15	22



Sources: 2000 Census SF1 P8/SF3 P7 Hispanic or Latino by Race and SF3 P87 Poverty Status in 1999 by Age

Southwest Georgia Interstate Study

Percent Low-Income & Minority Populations by County

Existing Conditions

Figure 2.4.3

3.0 Natural and Cultural Resources

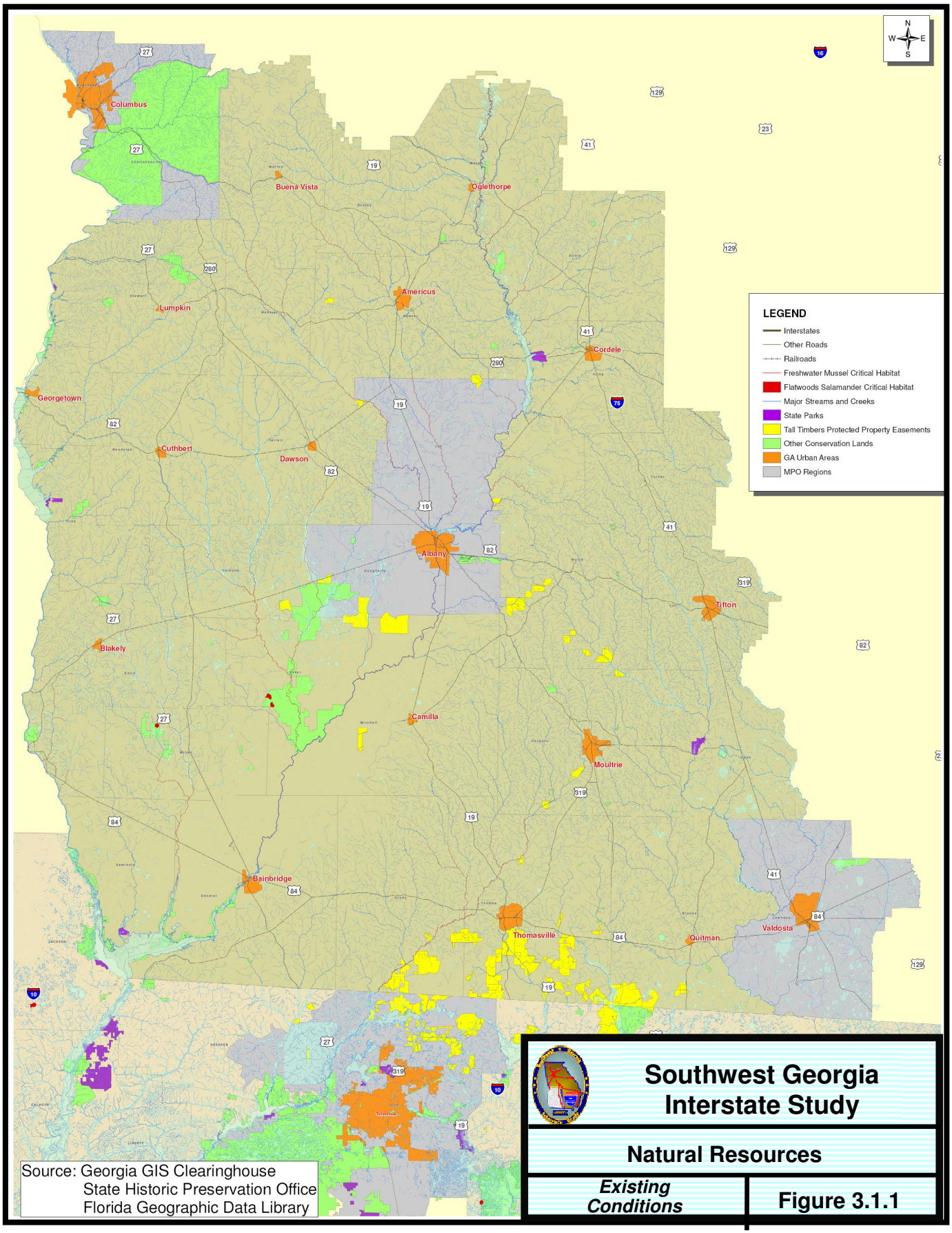
Information was collected on natural and cultural resources from a variety of sources such as the Georgia Department of Natural Resources, US Fish and Wildlife Service and the Georgia Conservancy. The GIS data base contains the following information

- Rivers, Streams, and Lakes
- Wetlands
- Color Infrared Aerials
- Topographic Maps
- Conservation Land Boundaries
- State Parks
- Tall Timbers Protected Property Easements
- Flatwoods Salamander Critical Habitat
- Roads
- Railroads
- Churches
- Cemeteries
- Schools
- Historic Sites
- Municipal Boundaries

The purpose of the collection of the natural and cultural resources is to identify sensitive areas and corridors that would be significantly impacted by the construction of a new highway or re-routing of an existing facility.

3.1 Natural Resources

Figure 3.1.1 displays the natural resources in the study area. The 32 counties encompassing the project feasibility study area in southwest Georgia include a wide range of natural resources including streams, wetlands, open waters, protected species/habitat, and a variety of conservation lands owned by federal and state agencies as well as non-governmental organizations (NGOs) and foundations. The northern portion of Florida is shown in Figure 3.1.1 for informational purposes only. The summaries of information represent only the 32 counties in Georgia.


N
W
E
S
LEGEND
Interstates
Other Roads
Railroads
Freshwater Mussel Critical Habitat
Flatwoods Salamander Critical Habitat
Major Streams and Creeks
State Parks
Tall Timbers Protected Property Easements
Other Conservation Lands
GA Urban Areas
MPO Regions
Columbus
Buena Vista
Oglethorpe
Americus
Lumpkin
Cordele
Georgetown
Cuthbert
Dawson
Albany
Tifton
Blakely
Camilla
Moultrie
Bainbridge
Thomasville
Quitman
Valdosta
Source: Georgia GIS Clearinghouse
State Historic Preservation Office
Florida Geographic Data Library
Southwest Georgia Interstate Study
Natural Resources
Existing Conditions
Figure 3.1.1

There are portions of four major river basins within this area, the Chattahoochee (Middle & Lower), the Flint (Middle & Lower), the Upper Ochlockonee, and the western part of the Suwannee; all of these watersheds flow roughly southward across the Florida/Georgia state line. The United States Fish and Wildlife Service (USFWS) has listed critical habitat for 6 protected freshwater mollusks (purple bankclimber, shiny-rayed pocketbook, gulf moccasinshell, fat three-ridge, oval pigtoe, and Ochlockonee moccasinshell mussels) within the Flint, Ochlockonee, and Chattahoochee river basins under Section 4 of the Endangered Species Act of 1973. Approximately 635 miles of these three major streams and their tributaries within the study area have been designated as critical habitat necessary for the continued existence of the these species. One other protected species, the flatwoods salamander, has been designated by the USFWS as requiring critical habitat in southwest Georgia. This habitat is located in two areas, the state-owned Mayhaw Wildlife Management Area in Miller County and the Joseph Jones Ecological Research Center (privately-owned) in Baker County. A multitude of additional state and federally-protected species occur in each county, but no detailed location data is available to the public. If more precise information is required, the Georgia Department of Natural Resources (DNR) will only provide distances of known populations from given coordinates along the project corridor. The DNR county lists of protected species available online include a broad array of species (i.e. mammals, invertebrates, plants, fish, and reptiles/amphibians) and their habitats, ranging from riverine to dry uplands.

Over 22,000 miles of mapped perennial and intermittent stream are found within the study area including the Chattahoochee River bordering Alabama to the west. The Natural Resources Map shows a gap in stream coverage along the Flint River from Albany to Bainbridge. This lack of surface streams is the result of the overlaying Ocala Limestone geologic formation. This area, known as the Dougherty Plain, is a very permeable, fine-grained limestone marine layer formed during the late Eocene period. Because limestone rock is soluble in rainwater and groundwater, this area often shows features of karst topography, a type of landscape typified by numerous sinkholes, small lakes, and caverns. This allows the Lower Flint to cut into the Ocala Limestone formation to reach the water table of the Upper Floridan aquifer. There are numerous areas along the Lower Flint where natural springs make these connections to the aquifer evident. As many as 20 large springs and countless small seeps discharge groundwater into the Lower Flint.

These springs and seeps are included in the open waters assemblage of natural resources within the study area. Including ponds, lakes, canals, ditches, and reservoirs, they make up over 140,000 acres of open water. Wetlands (e.g. swamps and marshes) make up an additional 290,000+ acres within the 32-county portion of southwest Georgia.

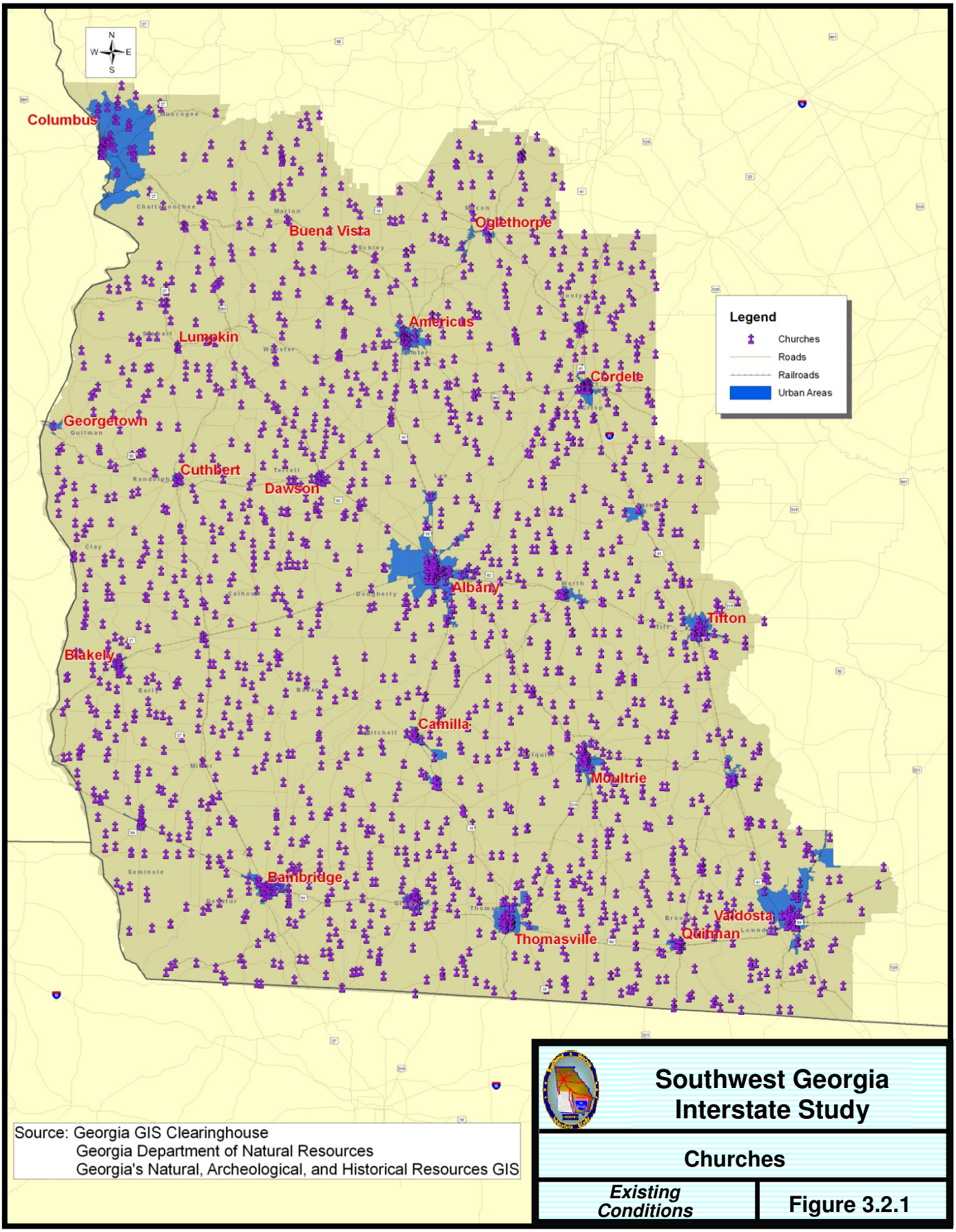
The numerous conservation lands in the study area includes state parks (4,721 acres), State Historic Parks (1,293 acres), State Conservation Areas (911 acres), State Fish Hatcheries (221 acres), State

Natural Areas (1,151 acres), State Public Fishing Areas (1,252 acres), State Wildlife Management Areas, (WMA) (57,342 acres), National Historic Sites (472 acres), National Wildlife Refuges (3,446 acres), Military Reservations (186,762 acres), Various Conservation Easements (17,589 acres), Nature Conservancy Preserves (1,064 acres), Private Conservation Land (29,133 acres), and Restrictive Covenants (557 acres). Additional lands include those protected by donated conservation easements to the Tall Timbers Land Conservancy. This land trust is located in northwest Florida and focuses its efforts in the Red Hills Region between Tallahassee, Florida and Thomasville, Georgia.

3.2 Cultural Resources

Section 106 properties are those that are afforded protection under the National Historic Preservation Act of 1966 (NHPA) including districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, engineering, and culture. GIS data was available for churches, cemeteries and known historic sites within the study area. Additional investigation and concurrence with the State Historic Preservation Office (SHPO) would be required to determine the level of protection each site warrants. Below are the totals for which the NHPA may apply. No GIS data is available on archeological sites for their protection. Figures 3.2.1 and 3.2.2 display the number of churches, historic sites and cemeteries in the study area. The following information is for Georgia only.

- Churches = 1,956
- Cemeteries = 743
- Historic Sites = 354
- Schools = no GIS data available unless listed under historic sites



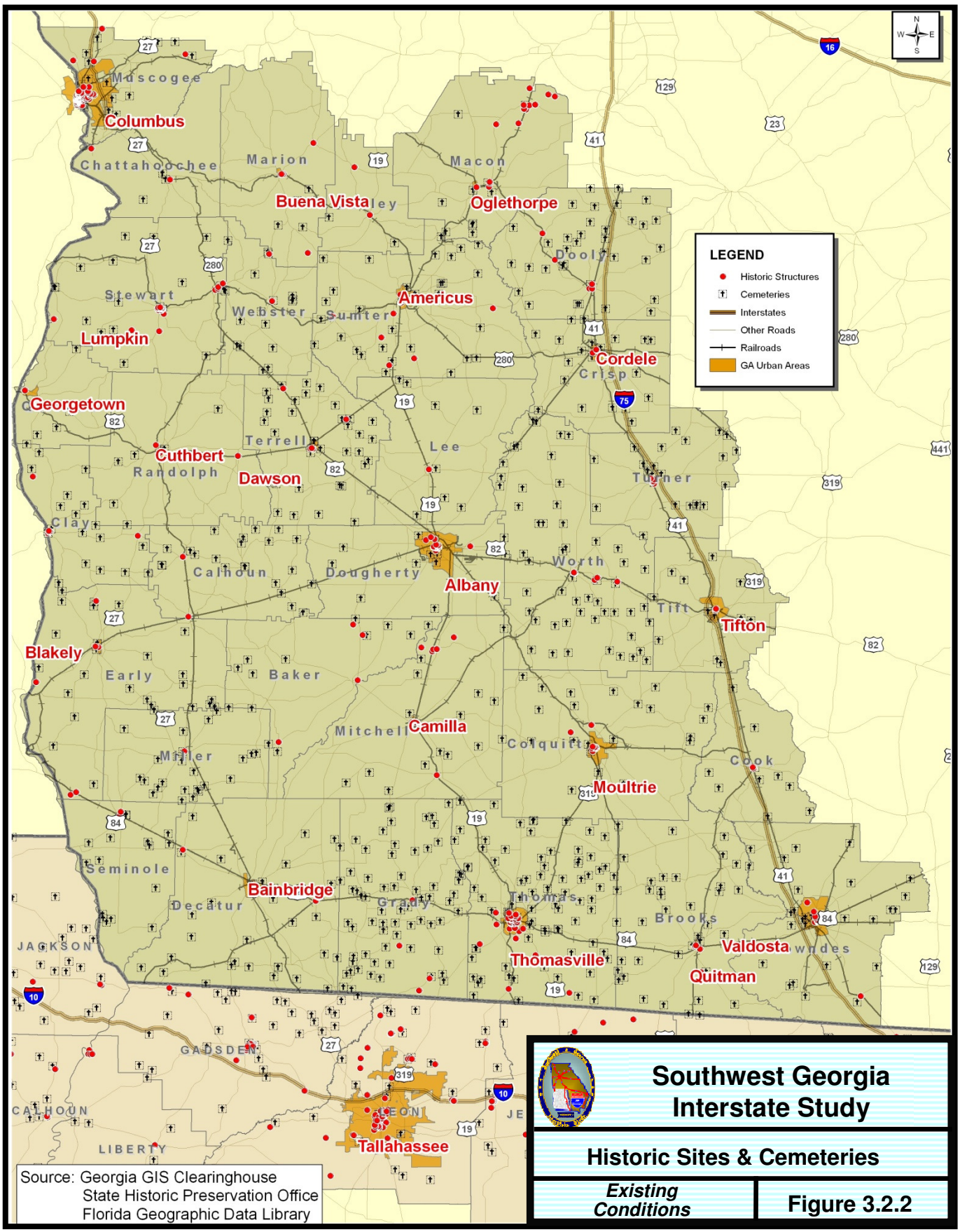
Source: Georgia GIS Clearinghouse
Georgia Department of Natural Resources
Georgia's Natural, Archeological, and Historical Resources GIS

Southwest Georgia Interstate Study

Churches

Existing Conditions

Figure 3.2.1


LEGEND
Historic Structures
Cemeteries
Interstates
Other Roads
Railroads
GA Urban Areas
Columbus
Buena Vista
Oglethorpe
Americus
Lumpkin
Cordele
Georgetown
Cuthbert
Dawson
Albany
Tifton
Blakely
Camilla
Moultrie
Bainbridge
Thomasville
Valdosta
Quitman
Tallahassee
Muscogee
Chattahoochee
Marion
Macon
Stewart
Webster
Sumter
Dooly
Crisp
Terrell
Lee
Randolph
Clay
Calhoun
Dougherty
Worth
Tift
Early
Baker
Mitchell
Miller
Colquitt
Cook
Seminole
Decatur
Grady
Thomas
Brooks
Lowndes
JACKSON
GADSDEN
CALHOUN
LIBERTY
LEON
Source: Georgia GIS Clearinghouse
State Historic Preservation Office
Florida Geographic Data Library
Southwest Georgia Interstate Study
Historic Sites & Cemeteries
Existing Conditions
Figure 3.2.2

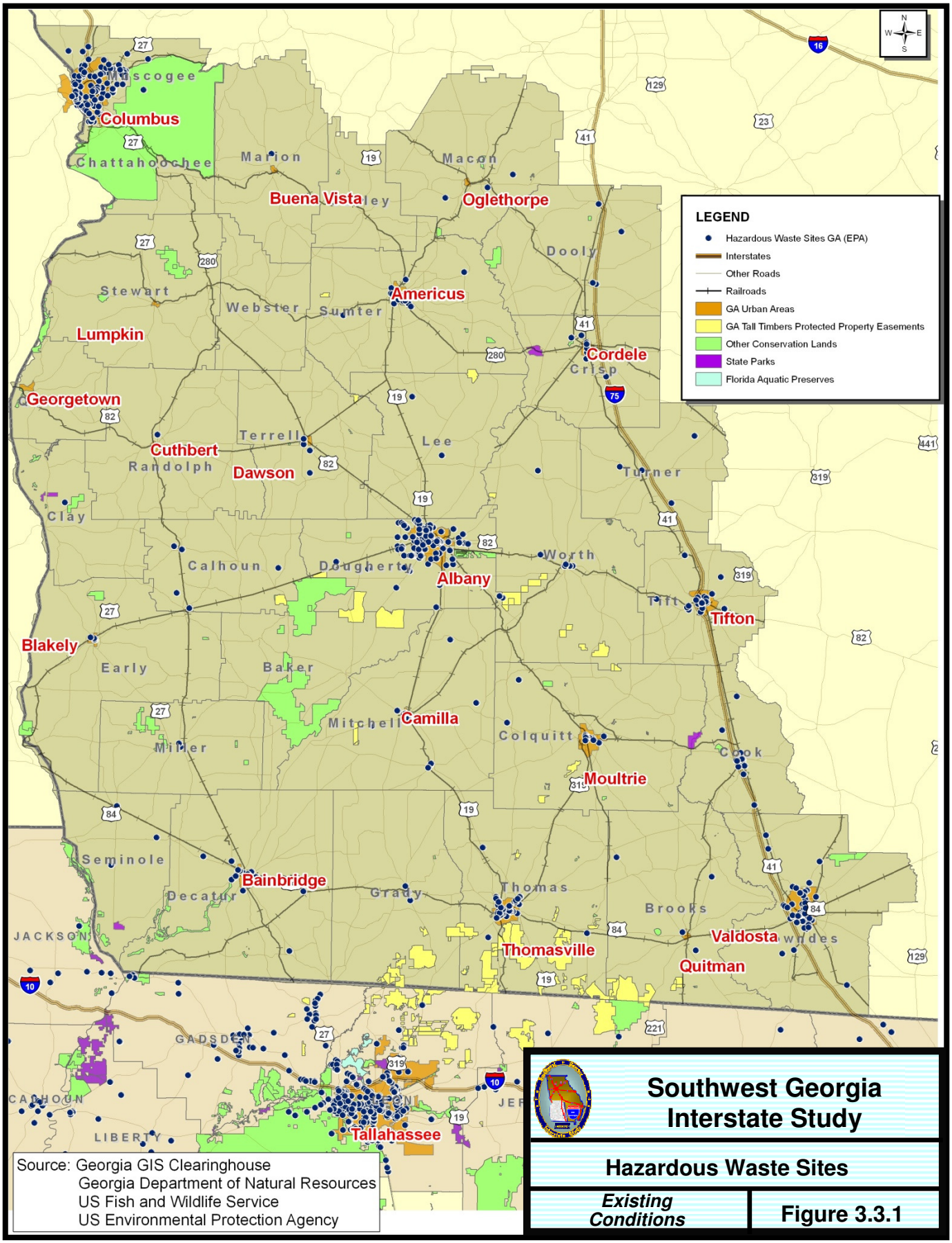
3.3 Hazardous Waste Sites

Hazardous waste sites are those locations that have been identified based on the hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo). The RCRAInfo is a national program management and inventory system about hazardous waste handlers that are regulated under the Resource Conservation and Recovery Act (RCRA). Hazardous waste is defined as liquid, solid, contained gas, or sludge wastes that contain properties that are dangerous or potentially harmful to human health or the environment. Hazardous wastes can be liquids, solids, gases, or sludges. They can be discarded commercial products, like cleaning fluids or pesticides, or the by-products of manufacturing processes. The following list represents some of the materials that have been deemed potentially hazardous.

- Petroleum refining by-products
- Explosives
- Pesticides
- Acids
- Coolants and additives (polychlorinated biphenyls – PCBs)
- Inks & dyes

Figure 3.3.1 shows the hazardous waste sites in the study area. The largest concentrations of these sites occur in the urban areas of Albany, Columbus and Valdosta. The rest of the sites are scattered throughout the study area. These sites may contain the following list of activities.

- Chemical manufacturers
- Dry cleaners
- Medical facilities
- Automotive Repair/Maintenance/Sales
- Paint/Printing Facilities
- Septic Tank Service/Waste Management
- Colleges/Universities/Correctional Institutions


LEGEND
Hazardous Waste Sites GA (EPA)
Interstates
Other Roads
Railroads
GA Urban Areas
GA Tall Timbers Protected Property Easements
Other Conservation Lands
State Parks
Florida Aquatic Preserves
Columbus
Buena Vista
Oglethorpe
Americus
Lumpkin
Cordele
Georgetown
Cuthbert
Dawson
Albany
Tifton
Blakely
Camilla
Moultrie
Bainbridge
Thomasville
Valdosta
Quitman
Tallahassee
Source: Georgia GIS Clearinghouse
Georgia Department of Natural Resources
US Fish and Wildlife Service
US Environmental Protection Agency
Southwest Georgia Interstate Study
Hazardous Waste Sites
Existing Conditions
Figure 3.3.1

4.0 Land Use/Comprehensive Plans

Each county's Comprehensive Plan has been reviewed[1] to ascertain long range growth priorities, development projects, particular land use sensitivies (such as historic preservation and environmental concerns), and economic development initiatives. Approximately half of the counties' Comprehensive Plans are out-of-date (i.e. written in the early 1990s) or are incomplete, however, and many contain only the minimum level of information required for such plans. The analysis presented must therefore be viewed in this context and used with caution as each county is not equally represented due to the varying quality of their Comprehensive Plans.

4.1 Purpose

This analysis of local growth issues such as those mentioned above helps identify high-level opportunities or barriers to the feasibility of a new interstate in southwest Georgia. It is meant to form part of a larger technical study and worked up in further detail as the process of siting an interstate progresses to more fully understand local issues and complexities of counties which may be directly affected by the new roadway.

4.1.1 Overview of Growth Patterns

The southwest Georgia study area is largely rural in character; however, there are regional and sub-regional cities such as Albany, Columbus, Valdosta, Thomasville and Americus which are growing at considerable rates and which have aspirations to strengthen their roles as economic hubs. (Only Baker County, in fact, reported a population which is expected to shrink in the future.) A number of smaller cities seek progress as well, and have smaller-scale development plans to help support their growth.

Perhaps due to these centers' growth, there are several more small cities and towns which desire to preserve their agricultural nature and see their local downtowns thrive again, bucking the trend of strip development which may have affected many small businesses. Some of these counties wish to remain small and rural despite development pressures and so have measures in place to safeguard their heritage and character. Others anticipate growth but not at a significant rate and are content to maintain the status quo by remaining small and rural, while a few counties are simply restricted to grow due to physical constraints or large, long-term private landholdings which are unlikely to be developed.

[1] All counties' Comprehensive Plans have been reviewed except for Quitman County's plan, which has not been made available to the consultants (as of June 20, 2008).

Table 4.1.1.1 provides an overview of the growth patterns and aspirations for each county in the study area. The symbols in the table represent the following general growth trends recognized:

" **+** " represents a county which is anticipating significant growth and / or has aspirations for significant growth;

" **?** " represents a county where *growth is expected* although the county desires to remain rural and protect its heritage (i.e. the county generally does not want growth yet it expects it);

" **x** " represents a county where *no significant growth is expected* and it desires to remain rural and protect its heritage, or growth is restricted due to physical or landownership constraints (i.e. the county generally does not want growth and it's not expecting it); and

" **–** " represents a county which expects to lose population / decline.

Table 4.1.1.1
General Overview of Growth Patterns for Study Area Counties[2]

Desires Growth	Does Not Desire Major Growth		Declining
+	?	x	–
Colquitt Co	Cook Co	Brooks Co	Baker Co
Decatur Co	Crisp Co	Calhoun Co	
Dooly Co	Grady Co	Chattahoochee Co	
Dougherty Co	Lee Co	Clay Co	
Lowndes Co	Macon Co	Early Co	
Muscogee Co	Marion Co	Miller Co	
Sumter Co	Mitchell Co	Randolph Co	
	Seminole Co	Schley Co	
	Terrell Co	Stewart Co	
	Thomas Co	Tift Co	
	Worth Co	Turner Co	
		Webster Co	

Source: County Comprehensive Plans as interpreted by EDAW

4.1.2 Significant Growth Trends

A review of the Comprehensive Plans for counties within the study area reveals several growth trends which may help measure their relative desire for an interstate. Trends were formed based on

[2] Quitman County's Comprehensive Plan has not been made available to the consultants (as of June 20, 2008).

counties' long range growth priorities; eagerness to undertake significant roadway improvements; economic development aspirations; and preservation and heritage concerns. The trends were recognized as follows:

1. Commercial growth around / along highway nodes
2. Especially supportive of major roadway improvements to stimulate growth or economic development, such as GRIP.
3. Desire to strengthen regional economic roles of cities
4. Residential growth in urban areas / clusters
5. Need to diversify economic base
6. Protection of natural resources as priority
7. Desire to maintain rural character

Each trend is described in further detail below, followed by a list of counties which appear to particularly conform to the trend.

1. Commercial growth around / along highway nodes

Several counties credit much commercial growth in past years to the presence of local highways or interstates in their areas. Major intersections, interchanges, and corridors are more visible and easily accessible, thus making them natural sites for commercial growth. Although some counties are resisting such strip or nodal development along highways due to the resulting decline of their traditional downtowns (such as Mitchell County and Schley County), the following jurisdictions envision continued commercial development along major roadways:

- Baker County, which encourages crossroads commercial development, such as at Highways 37 and 91;
- Colquitt County, which expects commercial growth to continue in clusters at major county intersections;
- Crisp County, which expects all four corners of the GA 300 / I-75 interchange to be developed for mixed use;
- Grady County, which highlights a primary commercial area along Highway 84 which needs strengthening;
- Lee County, where commercial development is encouraged adjacent to intersections of major transportation corridors (although stresses that traditional downtown areas should be maintained as focal points of the community);
- Lowndes County, which expects commercial growth in Hahira to continue to cluster around the I-75 interchange;

- Seminole County, which expects commercial growth in its cities but also north of Donalsonville along major roadways;
- Sumter County, which expects Americus to grow most substantially in the county and requiring 229 additional commercial acres along Highway 280 East and Highway 30;
- Terrell County, whose major urban areas grew up around crossroads and anticipates that development will continue in this way;
- Tift County, which recognizes that commercial growth is found primarily adjacent to I-75 interchanges and in strip development along US highways near Tifton; and
- Turner County, which has commercial uses largely clustered at exits adjacent to I-75.

2. Especially supportive of major roadway improvements to stimulate growth or economic development

Many counties recognize the substantial economic benefits roadway improvements can generate through providing greater access to local amenities, employment and shopping opportunities, tourist attractions and therefore support their development. All of the counties listed below have noted that they encourage the development or improvement of highways.

- Baker County pointedly states that they encourage developmental highways in the southwest Georgia region;
- Dougherty County anticipates major transport corridors which lead into Albany and other residential areas to be developed;
- Marion County recognizes the development of proposed I-14 along current route GA 26 (following the Fall Line Freeway) as an opportunity[3] and highlights the future need for a state route through Buena Vista;
- Muscogee County encourages the review of a potential need for an east-west corridor between downtown Columbus and I-185 and long-range highway uses at Williams Road interchange; and
- Sumter County sees the county's economic future as dependent on several major roadways being improved, including the widening of US 19 and US 280. Additionally, the County Administrator has categorically stated that they are in favor of a southwest Georgia interstate being located in Sumter.

The following counties also support major highway improvements in their areas:

[3] I-14 is a proposed interstate set to run from Natchez, Mississippi or Alexandria, Louisiana to Augusta, Georgia or North Augusta, South Carolina. The proposed interstate was included as part of the 2005 Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users (SAFETEA-LU) signed into law by President Bush; however, the legislation did not allocate funding for the interstate. Although the actual route of I-14 is unknown, the SAFETEA-LU legislation specifies that the interstate would follow the Fall Line Freeway (currently under construction) in Georgia, connecting Augusta to Columbus via Macon and Milledgeville.

- Clay County;
- Decatur County;
- Dooly County;
- Lee County;
- Lowndes County;
- Webster County; and
- Worth County.

3. Desire to strengthen regional economic roles of cities

The largest cities in southwest Georgia – Albany, Valdosta and Columbus – are expected to grow in the next several years and are making plans to capitalize on the expected growth. Major economic development initiatives, requiring millions of dollars of investment, are planned or underway which the counties hope will help raise their profile in the region. Thomasville, considered a mid-sized city in the southwest, also expects to widen its draw as retail and services hub. The following briefly describes some of the initiatives and local aspirations:

- Dougherty County and the City of Albany expect to increase their role as a major growth / trade center in the region over the next 20 years. Two projects which will help realize this vision are the mixed use Albany Downtown Masterplan and Phoebe Putney Memorial Hospital expansion. In addition, a recent freight study conducted by the Dougherty Area Regional Transportation Study (DARTS) focuses on the United Parcel Service (UPS) presence at the Southwest Georgia Regional Airport.
- Lowndes County and the City of Valdosta aspire to be home to a regional headquarters office park with easy access to major transportation corridors.
- Muscogee County and the City of Columbus expect growth from Ft. Benning and plan to invest in riverfront activities and the construction of a regional recreation center.
- Thomas County and the City of Thomasville propose that its good connections and proximity to Leon County / Tallahassee (Florida) may encourage the establishment of a small regional shopping hub.

Likewise, many smaller-tiered cities have identified economic development projects which might help them transition into a higher-performing hub on a sub-regional level. These are represented by the counties which follow:

- Cook County, which is planning a governmental / medical service corridor along US 41 in Adel; and

- Decatur County, which wants to explore how Bainbridge's small port facility which supports barge transportation can realize its potential.

4. Residential growth in urban areas / clusters

Smart growth is encouraged when new development is sited in proximity to existing infrastructure. This often equates to growth being planned for areas adjacent to existing built-up areas. Clustering growth also helps preserve the countryside by preventing sprawl which can blight natural resources and diminish character. For these reasons, several counties have specifically stated that they will seek to consolidate residential growth in the future. It is important to note that recommending clustering does not necessarily mean the counties wish to become 'more urban'; rather, in cases such as Schley County, it is expected that development be planned in clusters to preserve the rural character of the county's non-residential areas. Below is the list of counties which are specifically seeking the consolidation of residential areas (for whichever reason):

- Baker County;
- Cook County;
- Decatur County;
- Dougherty County;
- Grady County;
- Lee County;
- Lowndes County;
- Miller County;
- Schley County;
- Sumter County;
- Thomas County;
- Tift County; and
- Worth County.

5. Need to diversify economic base

Many counties in southwest Georgia are overly dependent on agricultural yields for their welfare or lack employment opportunities. The following counties, therefore, may be more willing to explore ways to attract new business in their areas to help bolster their economic outlook – perhaps by opening up their areas through highway improvements:

- Calhoun County;
- Clay County;

- Early County;
- Grady County;
- Lee County;
- Mitchell County;
- Seminole County;
- Terrell County; and
- Webster County.

It is interesting to note that most of these rural counties also list tourism as a potential economic development tool which could bring business and new activity to their areas.

6. Protection of natural resources as priority

The presence of prime farmland, large private plantations, groundwater recharge areas, wildlife protection areas, significant wetlands and other sensitive environmental land uses are prevalent in many counties in southwest Georgia.

Grady County appears to contain the most environmentally sensitive land in the southwest region. This is primarily due to the fact it is covered by the Red Hills Region, which includes the plantation lands between Thomasville and Tallahassee and west into Grady County. As the largest concentration of undeveloped plantation lands in the country, the Red Hills Region has been identified for special conservation efforts. The Nature Conservancy has designated Red Hills as one of America's "Last Great Places." Grady County also has prime farmland and forested land, which accounts for 40% of land cover, which it seeks to protect. Part of this forest contains a significant portion of the native longleaf pine forests remaining in the U.S.

While mapping these and other designations will help clarify which areas of southwest Georgia are most collectively sensitive, it is helpful to understand which other counties contain major barriers to growth and are thus most likely to prove problematic or prohibitive to large-scale developments in the future. These include:

- Baker County, which contains prime farmland, a large number of private plantations, significant wetlands, and a large wildlife management area; development is also restricted due to floodplain designations and large landholders unwilling to subdivide parcels;
- Chattahoochee County, which contains prime farmland (which it wants to protect) and a groundwater recharge area susceptible to pollution which should be protected; a Natural Resource Conservation Area is also put forward as a future land use;
- Cook County, which has prime farmland which it seeks to protect;

- Dooly County, which has prime farmland, wetlands which cover 30% of the county, and two natural areas designated as significant;
- Lowndes County, which has groundwater recharge areas that cover 23.9% of the entire county, and upon which development should be avoided;
- Marion County, which contains wetland protection areas, groundwater protection areas, and potentially significant numbers of protected / endangered species of plants and animals in the northern third of the county; and
- Schley County, which has groundwater recharge areas – considered to be among the state's most significant – covering 75% of the county, as well as significant wetlands covering 5.4% of the total land area.

7. Desire to maintain rural character

Finally, many counties have expressed a desire to retain their agricultural roots and resist major development; they cherish their rural character and abundant natural resources. Many of the counties listed above who place particular emphasis on protecting environmentally sensitive areas therefore appear in this list again. Although Table 1.1 ("General Overview of Growth Patterns for Study Area Counties") lists counties which appear reluctant to embrace substantial change in their areas, having reviewed their Comprehensive Plans, it is estimated that the following counties in particular would not actively seek the development of an interstate due to rural / agricultural protection measures outlined in their plans:

- Baker County;
- Calhoun County;
- Chattahoochee County;
- Clay County;
- Cook County;
- Crisp County;
- Early County;
- Grady County;
- Lee County;
- Marion County;
- Schley County;
- Turner County; and
- Worth County.

4.1.3 Summary

Although southwest Georgia is primarily a rural region, there are several counties which will experience modest growth in the future. These counties contain the largest cities in the area, namely Albany (Dougherty County), Valdosta (Lowndes County), and Columbus (Muscogee County); however, there are also counties which have high aspirations seeking opportunities for growth. Of special significance in this category is Sumter County, which has expressed its desire to generate economic development through major highway improvements. However, there are numerous counties which cherish their rural / agricultural heritage and have swathes of protected / environmentally sensitive land on which they do not welcome major development. Those counties which contain particularly sensitive landscapes, such as Grady County; or with restricted development areas, such as Chattahoochee County; or those which simply want to remain rural, such as Schley County dot the region. Due to the age of many of the Comprehensive Plans and the iterative nature of this study, however, more detailed analyses must be carried out and individual counties consulted to gain a more complete understanding of where the appropriate location for a southwest Georgia interstate may be.

5.0 Economic Development Conditions

5.1 Introduction

The Southwest Georgia Interstate Study was undertaken to assess the feasibility and expected outcomes of investments to improve the accessibility of southwest Georgia. Among the outcomes desired from such an investments is the promotion of economic growth and development in this primarily rural and agricultrual region of the State. As detailed below, the economy of this part of the State has not prospered to the same degree as other parts of Georgia or the nation as a whole. This section of the Technical Memorandum will describe current economic conditions and trends, and how they support or temper the economic return on highway investment in this region.

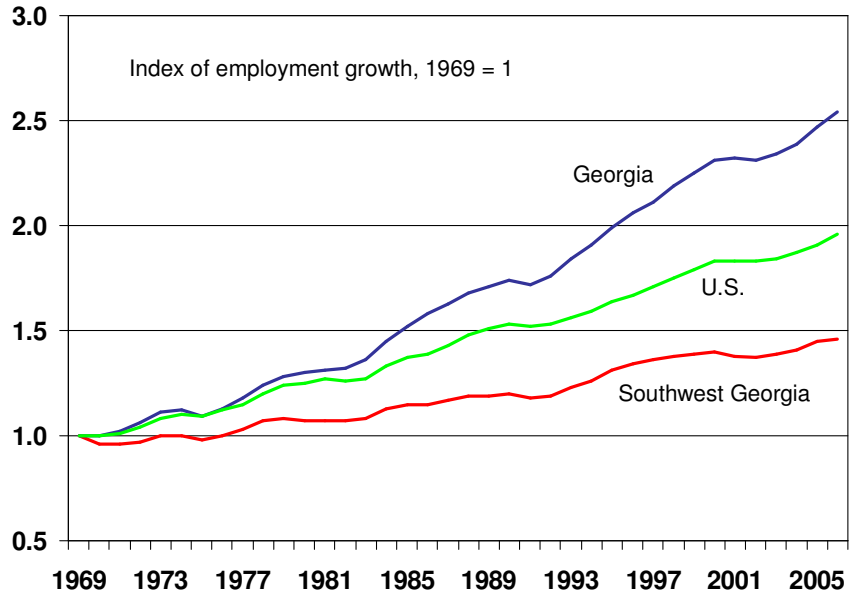
5.2 Purpose

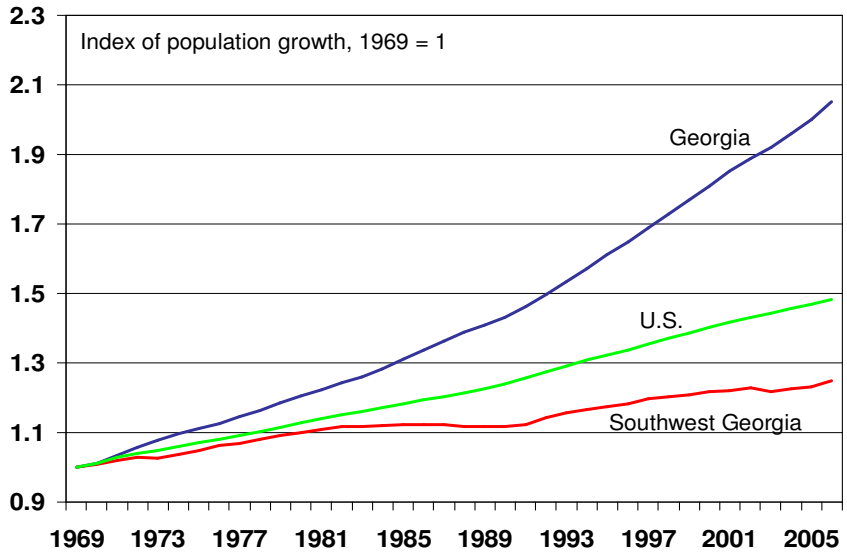
The remainder of this Section is divided into three parts that describe (1) current economic conditions, (2) development initiatives and (3) freight trends to establish a baseline for the local economy. Where possible, upside and downside risks to the highway-led development strategy are identified in the context of the region's economic structure. In addition, because economic development can have different meanings to different communities—one community's sprawl is another's success story—the discussion considers whether the industries likely to benefit from transportation improvements are consistent with the goals and objectives of the indivudal communities in the region.

5.3 Economic Profile of the Southwest Georgia Study Area

The southwest Georgia study area is an economic laggard relative to the strongly performing Georgia State economy and the broader US national economy. The study area faces significant hurdles in realizing its economic potential. Population growth is largely stagnant; per capita income is low, and, commercial development has bypassed this corner of the state for other locales. As the charts in Figure 5.3.1 illustrate, the region's underperformance is a long-term trend, not an artifact of a short-term cyclical fluctuation. The region has consistently lagged the State and nation in both population and employment growth since 1970.

Figure 5.3.1
Southwest Georgia's Employment and Population Growth
Consistently Lags Georgia and the Nation





Other barometers of the region's economic health are consistent with its economic disadvantage. The per capita income in the region is equivalent to just 72 percent of the US average in 2006. The Economic Research Service of the US Department of Agriculture, has identified 21 of the 32 counties included in the Study areas as a Persistent Poverty counties. The definition of such a county is one where persons with a poverty-level income in the preceding year were 20 percent or more of the total population in each of 4 years: 1970, 1980, 1990, 2000. The U.S. had 386 persistent poverty counties/parishes (out of 3,141 counties total) the last time this tabulation was done (2004).

Consistent with the high incidence of poverty and the comparatively low economic opportunity, 23 of the region's 32 counties were identified as Low-education counties. The definition of such a county is one where 25 percent or more of working aged adult residents (ages 25-64) had neither a high school deploma or GED in 2000. The US had a total of 622 low education counties/parishes (out of 3,141 counties total).

The low level of educational attainment is an important factor for the region's outlook as it reduces the likelihood that investments in other types of capital, such as infrastructure, will enjoy a positive rate of return. The low rate of educational attainment present in the region tempers the outlook for the return on the economic development highway investment that is being considered as employers considering relocation to the region may question the skills and training of the workforce even if the highway investment makes the region competitive. Although a downside risk, there are ways to address this issue such as offering employers incentives to provide training to support their industrial needs, perhaps local community college programs can be tailored to support employers relocation to the region. Such initiatives have been successful in other regions seeking to build the skills of their workforce.

5.4 Regional Business Costs

Not all economic indictors for southwest Georgia are as discouraging, however. While employment and population growth are weak, the region stands out in terms of its cost structure. Using the Albany and Columbus metropolitan areas as barometers of the region's cost structure—the rural areas are unlikely to have higher costs than the region's metro economies—southwest Georgia has among the lowest costs of doing business in the nation. Moody's Economy.com estimates that the cost of doing business in Albany (a weighted average of energy costs, taxes, office rents, and labor costs adjusted for productivity) is 89 percent that of the US average cost. Improving the outlook, however is the region's cost advantage with the neighboring Atlanta regional economy where business costs are 98 percent those of the nation. A business could locate in southwest Georgia and have good

physical proximity to the Atlanta market (and other major metro markets in the fast growing Southeast region) and enjoy a 9 percent savings in business costs. The success of such a strategy is supported by an efficient and reliable road network by which to access these major markets.

5.4.1 Industrial Composition

The industrial structure of the 32-county southwest Georgia region is more highly concentrated in resource-related industry and manufacturing compared to the State's economy. The farming, forestry, and mining industries combined account for about 4 percent of the southwest Georgia regional economy, compared with just under 2 percent for the state overall. The reliance on resource industries, particularly farming, is higher than the data imply as a significant amount of the region's manufacturing activity is related to agriculture and forestry production such as poultry processing and paper products manufacturing. The region also has a disproportionate share of government employment compared to the broader Georgia economy, attributable to the presence of three military installations in the region: Fort Benning, Moody AFB and the Marine Corp Logistics Base. One in five jobs in the region is at a military or government employer as illustrated in Table 5.4.1.1 below.

By contrast, professional and technical services, finance and information services are under-represented in the region relative to the State—consistent with the lower educational attainment of the resident work force. Of particular note, wholesale trade, transportation and warehousing are all underrepresented in the region relative to the State overall. Unlike professional and technical services, jobs in these industries generally require less educational attainment and are a closer match to the skills of the region's labor pool. This suggests that there could be room for growth in these industry sectors if the competitive structure of the region changed due to interstate investment or a significant highway upgrade that made the region more attractive to employers.

Table 5.4.1.2 below provides additional information on the region's industrial mix, identifying the major employers to highlight the type of commodities and goods transported. Firms are shown by location, employment size, and type of activity. The table highlights the manufacturing sector's close connection to the region's resource activites. It also identifies the major shippers—processors of agricultural goods who have located in the region to be close to their suppliers. Of note, these are not shippers likely to be using the State's port facilities with the exception of the military facilities. Excluding the military, shippers will primarily be shipping to major domestic metropolitan markets for consumption as in the case of Miller Brewing or Tysons Foods.

Table 5.4.1.1
Industrial Structure of Southwest Georgia Study Area and the State

Industry Sector	Employment Share in Region, %	Employment Share in Georgia, %
Farming	2.06%	1.22%
Forestry, fishing, related activities	1.42%	0.53%
Mining	0.68%	0.17%
Utilities	1.13%	0.39%
Construction	5.18%	6.74%
Manufacturing	10.45%	8.64%
Wholesale trade	2.95%	4.37%
Retail trade	11.49%	10.72%
Transportation and warehousing	2.51%	3.84%
Information	2.14%	2.50%
Finance and insurance	3.62%	4.16%
Real estate and rental and leasing	3.02%	4.50%
Professional and technical services	3.23%	6.10%
Management of companies and enterprises	1.24%	1.02%
Administrative and waste services	5.45%	7.09%
Educational services	1.15%	1.69%
Health care and social assistance	7.86%	8.02%
Arts, entertainment, and recreation	1.25%	1.53%
Accommodation and food services	6.50%	6.84%
Other services, except public administration	5.57%	5.64%
Government and government enterprises	21.12%	14.31%

Source: BEA data and AECOM Consult calculations
Note: Some BEA data are surpressed at the county level to prevent disclosure of individual firm data; in these instances AECOM Consult developed estimates to infill the missing data in order to permit an estimation of the overall regional industrial structure.

Table 5.4.1.2 below provides additional information on the region's industrial mix, identifying the major employers to highlight the type of commodities and goods transported. Firms are shown by location, employment size, and type of activity. The table highlights the manufacturing sector's close connection to the region's resource activites. It also identifies the major shippers—processors of agricultural goods who have located in the region to be close to their suppliers. Of note, these are not shippers likely to be using the State's port facilities with the exception of the military facilities. Excluding the military, shippers will primarily be shipping to major domestic metropolitan markets for consumption as in the case of Miller Brewing or Tysons Foods.

The growth prospects of the region's major employers are small; these are shippers in mature consumer industries, largely serving a regional market. As such, they are unlikely to generate

significant additional freight traffic over the forecast horizon. Additional freight growth in the region is thus likely to be driven by relocations or the introduction of new industries to the region, or by through freight traffic.

Table 5.4.1.2
Major Employers in Southwest Georgia

Company Name	City	Employment	Business Description
AFLAC Inc.	Columbus	1,000-4,999	Insurance
Albany Electric	Albany	500-999	Electric Contractors
Albany State University	Albany	500-999	Schools--Universities and Colleges
Bill Heard Chevrolet	Columbus	500-999	Automobile Dealers-New Cars
Blue Cross & Blue Shield	Columbus	1,000-4,999	Insurance
Bob's Candies Inc Warehouse	Albany	500-999	Candy & Confectioners
Brown Trucking Co.	Columbus	500-999	Trucking-Motor Freight
Burlen Corp.	Tifton	500-999	Apparel (mfg)
Cessna Aircraft Co.	Columbus	500-999	Aircraft Engines & Engine Parts (mfg)
Coats & Clark	Albany	500-999	Yarn-Spinning Mills (mfg)
Colquitt Regional Medical Center	Moultrie	500-999	Hospital
Columbus Regional Healthcare	Columbus	1,000-4,999	Hospital
City of Columbus	Columbus	1,000-4,999	Government Offices--City and Village
Columbus State University	Columbus	1,000-4,999	Schools--Universities and Colleges
Cooper Lighting	Americus	500-999	Lighting Fixtures (mfg)
Cooper Tire & Rubber Co.	Albany	1,000-4,999	Tire-Dealers Retail
Corrections Dept.	Pelham	500-999	State Govt-Correctional Institution
Crisp Regional Hospital	Cordele	500-999	Hospital
Darton College	Albany	500-999	Schools--Universities and Colleges
Doctors Hospital	Columbus	500-999	Hospital
Elberta Crate & Box Co.	Bainbridge	500-999	Boxes--Wire Bound (mfg)
Columbus Foundry	Columbus	500-999	Foundries - Steel
Equity Group Georgia Div.	Camilla	1,000-4,999	Poultry Processing Plants (mfg)
Fort Benning	Fort Benning	10,000+	Military
Georgia-Pacific Corp.	Cedar Springs	500-999	Paper (mfg)
Grill Lover's Catalog	Midland	500-999	Marketing Services
HCA Columbia Doctors Hospital	Columbus	500-999	Hospital
Jay Pontiac Buick GMC Inc.	Columbus	500-999	Automobile Dealers-New Cars
Jimmy Autry Correctional Institution	Pelham	500-999	State Govt-Correctional Institution
John D Archibald Memorial Hospital	Thomasville	1,000-4,999	Hospital
Kelly Services	Ashburn	500-999	Employment Leasing
Kysor//Warren	Columbus	500-999	Refrigerating Equip (whsl)

Table 5.4.1.2 (continued)
Major Employers in Southwest Georgia

Company Name	City	Employment	Business Description
Langdale Forest Products	Valdosta	1,000-4,999	Lumber and Wood Products
Lewis Taylor Farms Inc.	Tifton	500-999	Farms
Lowe's Distribution Center	Valdosta	500-999	Distribution Centers (whsl)
Martin Army Community Hospital	Fort Benning	1,000-4,999	Hospital
Masterfoods USA	Albany	500-999	Food Preparations (NEC)
Medical Center Hospital	Columbus	1,000-4,999	Hospital
Memorial Hospital	Bainbridge	500-999	Hospital
Mid Georgia Ambulance	Columbus	500-999	Ambulance Service
Miller Brewing Co.	Albany	500-999	Brewers (mfg)
Monrovia Growers	Cairo	500-999	Nurserymen
Phoebe Putney Memorial Hospital	Albany	1,000-4,999	Hospital
Pratt & Whitney	Midland	1,000-4,999	Aircraft Engines & Engine Parts (mfg)
Procter & Gamble Paper Products	Albany	1,000-4,999	Consumer Products
Riverside Manufacturing Co.	Moultrie	1,000-4,999	Uniforms (mfg)
Roadway Express Inc.	Lake Park	500-999	Trucking-Motor Freight
Rose Haven	Thomasville	500-999	Hospital
Sanderson Farms Inc.	Moultrie	1,000-4,999	Poultry Processing Plants (mfg)
South Georgia Medical Ctr.	Valdosta	1,000-4,999	Hospital
Southern Landscape & Sod Inc.	Thomasville	1,000-4,999	Sprinklers - Garden Retail
Southern Valley Neo Organic	Norman Park	500-999	Fruits & Vegetables Shippers
Southwestern State Hospital	Thomasville	500-999	Hospital
St. Francis Hospital	Columbus	1,000-4,999	Hospital
Sumter Regional Hospital	Americus	500-999	Hospital
Target	Tifton	500-999	Retail
Tift Regional Medical Center	Tifton	500-999	Hospital
Timken Company	Cairo	500-999	Ball & Roller Bearing (mfg)
Top Pharmacy & Home Medical	Columbus	500-999	Home Health Care Services
Total System Services Inc.	Columbus	1,000-4,999	Credit Card - Merchant Services
Tyson Foods Inc.	Vienna	500-999	Poultry Processing Plants (mfg)
Valdosta State University	Valdosta	1,000-4,999	Schools--Universities and Colleges
W K Shaw Industries Plant	Tifton	500-999	Yarn-Spinning Mills (mfg)
Wal-Mart Supercenter	Valdosta	500-999	Retail
West Central Georgia Regional Hospital	Columbus	500-999	Hospital
Wight Nurseries	Cairo	500-999	Nurserymen
Workstaff Personnel Services	Thomasville	500-999	Personnel Consultants

Source: Georgia Department of Labor
Note: Employment figures include full and part-time workers.

5.5 Issues Affecting Economic Development in Southwest Georgia

As a comparatively disadvantaged region of the State of Georgia, the communities of southwest Georgia are the beneficiaries of economic development initiatives administered by several levels of government and quasi-governmental agencies. These include those initiated by local communities within the region and those initiated by the state. Of note, interviews with local economic development representatives confirm that highway access plays a role in their ability to attract business to the region and that investments to improve highway access would be consistent with the the development goals and objectives of the region's communities. A representative of the Albany-Dougherty Economic Development Commission cited three separate instances where communities in the vicinity of Albany had received leads from the State economic development and partner development organizations. In each case, the region had been under consideration for a large plant relocation, and had ultimately been ruled out because of insufficient highway access. The representative indicated that SR 300 is considered a very good road even though it is not interstate quality. Other roads in the region, however, are not valued as highly because of the number of intersections with stop lights. Truck freight shippers are highly sensitive to the number of times they must stop or slow and then regain speed as it increases both time and fuel costs. This sensitivity has only intensified as fuel prices have risen[4].

The experience of the Albany-Dougherty developers is echoed by the Valley Partnership, the economic development arm of the Greater Columbus Chamber of Commerce. A representative confirmed that transportation was a limiting factor in the Partnership's ability to attract business. The representative cited recent experience in attracting Tier II and Tier III auto suppliers to the southwest Georgia region. Although the region fell within the typical distance of major auto assembly plants in West Point, GA and in Alabama for these types of suppliers, the southwest Georgia did not enjoy the same success in attracting suppliers that other competing regions had enjoyed. The representative indicated that road quality was a factor in this outcome[5].

As the commercial center for region, the City of Albany plays a central role in local initiatives aimed at developing the economic base of this part of the state. There are a number of concurrent efforts underway or in the planning stages. These are noted briefly below to highlight that interstate investment or significant highway improvements would be consistent with the development objectives of the region.

[4] Telephone interview with Andrea Schruijer, June 2008 by Toni Horst, AECOM. Because of the competitive nature of economic development initiatives, Ms. Schruijer was required to keep the names of the firms that had preferred other locations to southwest Georgia confidential.

[5] Telephone interview with Dayton Preston of the Valley Partnership, June 2008 by Toni Horst, AECOM. Preston stated that, "transportation is one of the most important keys to development success in southwest Georgia."

- **Logistics Industry Targeted in Business Analysis.** The Albany-Dougherty Economic Commission has identified Logistics as a Target Industry in their December 2007 Business Analysis report. The report cites the opportunity for multimodal freight movements due to two competing freight rail services (CSX and Norfolk Southern) and a regional airport. The Commission's business report indicates that both UPS and DHL have sorting facilities at Southwest Georgia Regional Airport that make it the second largest cargo airport in the State, after Hartsfield-Jackson in Atlanta. The report identifies the absence of direct interstate access as a challenge to this iniative's success but highlights SR-300 and US 82 as important four-lane highway alternatives.
- **The Municipal Electric Authority of Georgia (MEAG Power).** MEAG is a statewide organization but has many communities in southwest Georgia including Crisp County and Albany. Its presence provides electricity competition in these communities and favorable energy rates for firms considering relocating to the region. Such an option improves the region's attractiveness for energy-intensive industries such as manufacturers who are freight generators.
- **Georgia Freeport Exemption.** Every county in the southwest Georgia study area had a Freeport Exemption except Baker and Calhoun. The exemption removes business taxes on certain classes of property favoring the processing, warehousing and transportation industries.
- **Governor's Road Improvement Program (GRIP).** GRIP is an ongoing initiative to use transportation investment to leverage other community assets to spark economic development across the state to help distribute the State's prosperity beyond the dominant Atlanta region. The importance of the program for this study is twofold. It provides for an interim road improvement in the region as interstate options are being considered. It also reinforces that using road investment to support economic development objectives is consistent with local and state policies. US 27, US 84, and the South Georgia Parkway are several examples of GRIP roads in the southwest Georgia region that are either open or under development.

5.6 Freight Trends in the Southwest Georgia Study Area

Trucking is the dominant mode for moving freight in and through Georgia, accounting for about 72 percent in terms of tonnage and about 82 percent in terms of value. This particularly high mode share, reflects the composition of the state's domestic trading partners and the in-state presence of a major port and proximity of competing Gulf and Atlantic coast ports. Both in-bound and out-bound freight typically travels no more than 500 miles beyond the state's border. As rail's competitive advantage with trucks is primarily for distances greater than 500 miles, trucking dominates the state's freight sector. Moreover, trucking's mode share is expected to rise over time, increasing to 79 percent of tonnage and 86 percent by value by 2035. This makes the health of the highway system particularly important for the state's future economic performance. A finding of the state's latest

freight plan is that although existing interstate highways carry the highest volumes of freight by both tonnage and value, a number of non-interstate highways are projected to carry significant freight volumes by 2035, including arterials and the Governor's Road Improvement Program (GRIP) roads[6].

Georgia's freight flows are concentrated in the state's urban areas; reflecting its rural nature, comparately few of the counties included in the southwest Georgia study area are among the top counties for freight movement. Measured in terms of tonnage, only Muscogee County (Columbus urban area) ranks among the top 15 counties. When freight is measured in terms of value, Muscogee, Dougherty (Albany), and Lowndes (Valdosta) each rank among the top 15 counties for freight traffic[7].

Within the study area, two highway routes are projected to have significnat increases in truck freight. SR 300, connecting Albany to I-75 is projected to see its current freight tonnage rise from its current volume at or below 10 million tons per year to over 50 million tons by 2035, an over five-fold increase. US 280/US 82 (part of the GRIP system) is projected to see its freight tonnage increase from its current volume at or below 10 million tons per year to somewhere between 20 to 50 million tons per year[8].

The regional importance of SR 300 and US 280/US 82 is underscored by stakeholder interviews conducted for the Dougherty Area Regional Transportation Study MPO (Albany), which identified SR 300 and US 82 as the region's major freight access routes, followed by GA 520, US 280 and I-75. Both SR 300 and US 82 are designated as truck routes. Much of SR 300 follows the route of cancelled I-175, which would have connected Albany to the interstate system via I-75.

Additional perspective is provided by the Statewide Truck Lanes Needs Identification Study. This is an exhaustive effort utilizing freight data, traffic counts, and origin-destination surveys of truck activity to obtain a comprehensive view of truck activity in the state. The findings of this study corroborate the overall conclusion that aside from the routes noted above, truck activity is currently and is expected to be sparce in the Study Area over the foreseeable future. The only route with even modest truck activity is US 27, with truck flows originating in the LaGrange area and traveling to Florida via US 27[9].

[6]Georgia Department of Transportation, " 2005-2035 Georgia Statewide Freight Plan," October 2006, pages 3, 9, 21 and 23.
[7] [7]Georgia Department of Transportation, " 2005-2035 Georgia Statewide Freight Plan," October 2006, pages 26 and 28.
[8] Georgia Department of Transportation, " 2005-2035 Georgia Statewide Freight Plan," October 2006, page 33.
[9] Georgia Department of Transportation, "Statewide Truck Lanes Needs Identification Study: Technical Memorandum 1—Data Collection," July 2007, p. 36.

5.7 Conclusion

A lagging economy, relative to the Georgia economy, southwest Georgia is not currently a significant freight hub. Moreover, neither the current industrial composition, nor the growth prospects of the region's major employers, nor the state's freight projections of future demand suggest sharp increases in freight flows that would require significant new highway capacity.

That said, the competitive advantages of regions are not static; if strategic investments are made, they can turn weak economic performers into stronger economies. The economy of southwest Georgia has a favorable cost structure, proximity to major urban markets in the fast growing Southeast, and is making efforts to attract business. Were highway investments made to improve roads to the quality of SR 300 or a good quality divided highway with limited access, such investments might offer the desired development outcomes at a lower cost than an interstate solution. Such an investment in southwest Georgia might be marketed to the economic development community in a manner similar to the Port of Savannah's Commercial Corridors concept, designated freight routes with support for firms seeking information on locations within the corridor. The appendix provides a brief bibliography of the literature evaluating the economic benefits of good quality divided highways.

While the focus of this study is and remains the feasibility and likely economic development impacts of an interstate route in southwest Georgia, such a route can require significant planning and time to develop the concept and approvals. In the meantime, non-interstate investments (if consistent with the State's program) could support the region's economy in the intervening time.

6.0 Travel Conditions and Patterns

A variety of information was collected to assist with the analysis of travel patterns and conditions within the study area. This information was also used to develop a travel demand model which was also used to evaluate existing travel conditions within the study area. The detailed summary on the development of the inputs to the travel demand model and the model itself is contained in the following technical memorandums.

- Highway Network Development
- Traffic Analysis Zone Development
- Model Development

The results from the application of the travel demand model are shown in this section for the existing conditions of 2006. Although the travel demand model was developed that encompassed the entire 32-county study area, the level of detail for the urban areas of Albany, Columbus and Valdosta was not as fine as would be expected for a detailed urban model. GDOT has prepared separate travel demand models for each of these areas which are more detailed in order to develop the MPO transportation plans and programs. Since the MPO's are responsible for the analysis and evalution of transportation operations and plan within their boundaries, the results from the MPO areas of Albany, Columbus and Valdosta are not included in the results shown in this section.

6.1 Existing Facilities

The study area consists of 32 counties encompassing 7.6 million acres. Figure 6.1.1 displays the roadway facilities in the study area by functional classification. Federal Guidance states that functional classification is the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide. Basic to this process is the recognition that individual roads and streets do not serve travel independently in any major way. Rather, most travel involves movement through a network of roads. It becomes necessary then to determine how this travel can be channelized within the network in a logical and efficient manner. Functional classification defines the nature of this channelization process by defining the part that any particular road or street should play in serving the flow of trips through a highway network. There is a hierarchy to the classifcation system. The higher classified facilities are designed to carry more traffic at higher speeds. There are almost 8,300 center-line miles in the study area. Center-line miles includes both directions of a roadway facility. More than three-fourths of the facilities within the the study area are two-lanes facilities with one lane in each direction. The majority of the multi-lane facilities are principal arterials.

There are almost 200 center-line miles of interstates. Prinicpal arterials such as US 27, US 19, US 82, US 84 and US 280 account for approximately 2,300 or one-fourth of the center-lane miles. Minor arterials such as GA 26, GA 49, GA 30, GA 27, GA 62, GA 37 and GA 91 also account for one-fourth of the center-lane miles. Collectors account for less than half of the center-lane miles.

Table 6.1.1
Number of Center-Line Miles by Functional Classification

Area	Functional Class	2-Lane	Multi-Lane	Total
Rural	Rural Interstate	0	159	159
	Rural Principal Arterial	377	728	1,105
	Rural Minor Arterial	1,997	2	1,999
	Rural Major Collector	4,022	16	4,038
	Rural Minor Collector	346	0	346
	Rural Local	72	0	72
	Total	6,814	905	7,719
Urban	Urban Interstate	0	27	27
	Urban Freeway	0	10	10
	Urban Principal Arterial	105	201	306
	Urban Minor Arterial	186	5	191
	Urban Collector	3	0	3
	Total	294	243	537
Grand Total	Interstate	0	186	186
	Principal Arterial	482	939	1,421
	Minor Arterial	2,183	7	2,190
	Collector	4,371	16	4,387
	Local Road	72	0	72
	Grand Total	7,108	1,148	8,256

Source: Southwest Georgia Interstate Study Travel Demand Model

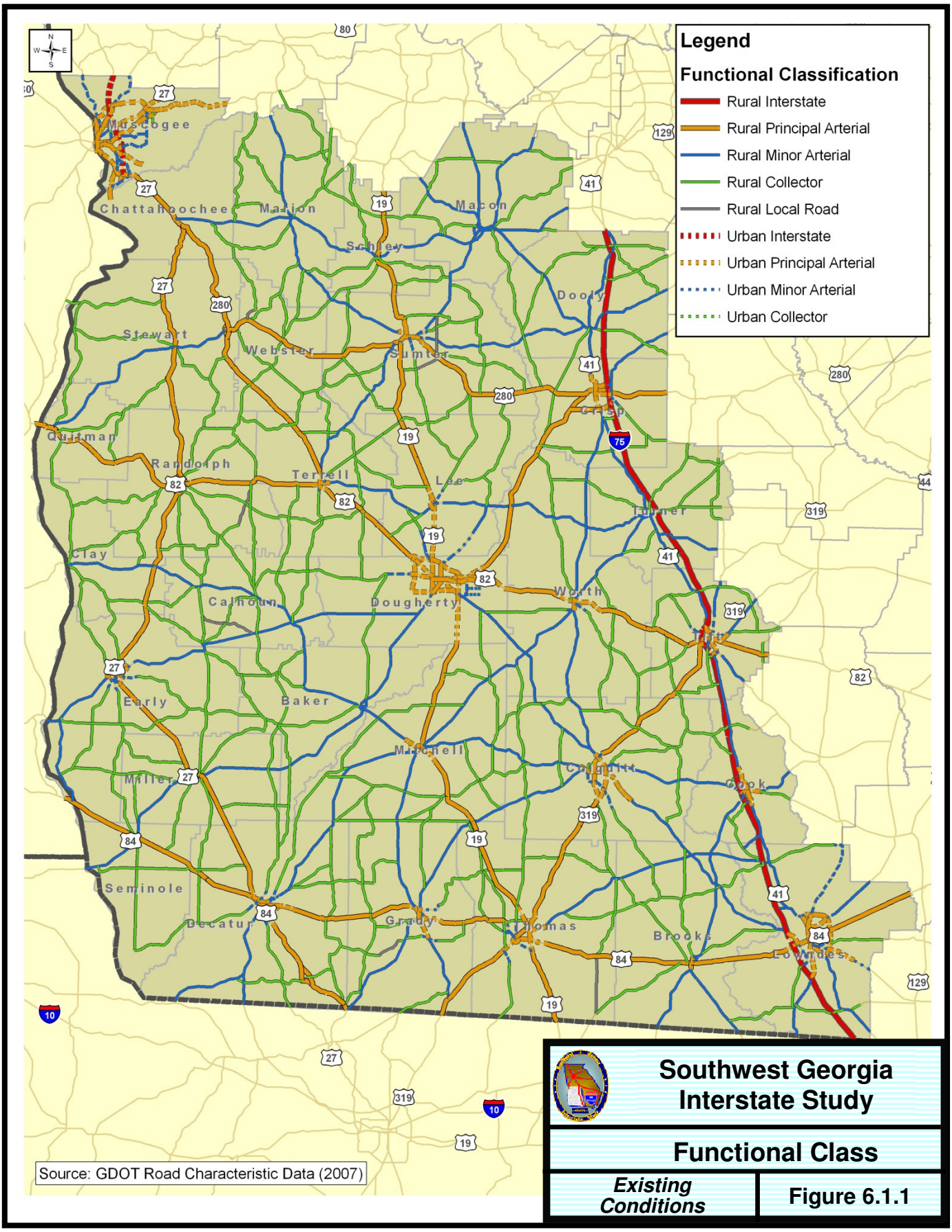

Legend
Functional Classification
Rural Interstate
Rural Principal Arterial
Rural Minor Arterial
Rural Collector
Rural Local Road
Urban Interstate
Urban Principal Arterial
Urban Minor Arterial
Urban Collector
Muscogee
Chattahoochee
Marion
Schley
Macon
Stewart
Webster
Sumter
Dooly
Crisp
Quitman
Randolph
Terrell
Lee
Turner
Clay
Calhoun
Dougherty
Worth
Tift
Early
Baker
Mitchell
Colquitt
Cook
Miller
Seminole
Decatur
Grady
Thomas
Brooks
Lowndes
Source: GDOT Road Characteristic Data (2007)
Southwest Georgia Interstate Study
Functional Class
Existing Conditions
Figure 6.1.1

Figure 6.1.2 displays the facilities in the study area by the number of lanes. Sections of I-185 and US 280 in Columbus and more than half of I-75 are the primary 6 lane facilities. Sections of I-75 are currently under construction to be widen to 6 lanes. Almost 80% of the principal arterials have four lanes. Sections of US 27 and US 19 are also currently under construction to be widen to 4 lanes.

6.2 Travel Conditions and Level-of-Service

Table 6.2.1 lists the daily vehicle miles traveled (VMT) for 2006 by functional class. More than 80% of the daily VMT takes place on the rural facilities. The largest amount of daily travel occurs on the rural interstates, rural principal arterials and urban principal arterials.

Table 6.2.1
Total Daily Vehicle Miles Traveled for 2006

Area	Functional Class	2006	% of Total VMT
Rural	Rural Interstate	3,226,983	22.8%
	Rural Principal Arterial	3,512,861	24.9%
	Rural Minor Arterial	2,651,689	18.8%
	Rural Major Collector	2,130,690	15.1%
	Rural Minor Collector	100,132	0.7%
	Rural Local	19,444	0.1%
	Total	**11,641,799**	**82.4%**
Urban	Urban Interstate	563,019	4.0%
	Urban Freeway/Expressway	58,953	0.4%
	Urban Principal Arterial	1,487,728	10.5%
	Urban Minor Arterial	376,465	2.7%
	Urban Collector	2,957	0.0%
	Total	**2,489,122**	**17.6%**
	Grand Total	**14,130,921**	**100%**

Source: Southwest Georgia Interstate Study Travel Demand Model

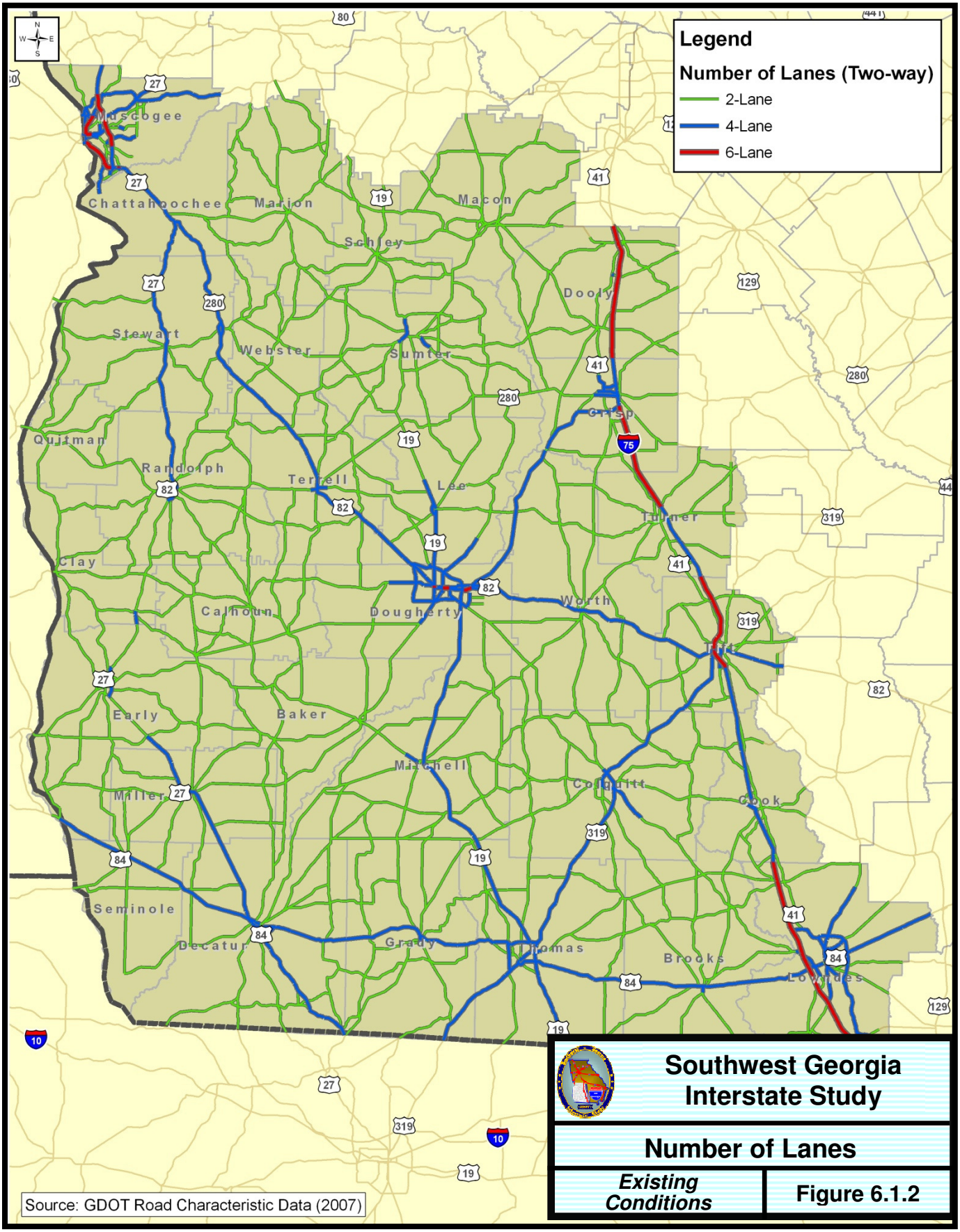

Legend
Number of Lanes (Two-way)
2-Lane
4-Lane
6-Lane
Muscogee
Chattahoochee
Marion
Schley
Macon
Dooly
Stewart
Webster
Sumter
Quitman
Randolph
Terrell
Lee
Turner
Clay
Calhoun
Dougherty
Worth
Tift
Early
Baker
Mitchell
Colquitt
Miller
Cook
Seminole
Decatur
Grady
Thomas
Brooks
Lowndes
Source: GDOT Road Characteristic Data (2007)
Southwest Georgia Interstate Study
Number of Lanes
Existing Conditions
Figure 6.1.2

Figure 6.2.1 displays the daily travel volumes by volume range. The I-75 corridor which provides for north-south travel within the study area and through the study area has the highest daily travel volumes. Daily travel volumes on I-75 range between 50,000 to 60,000 and over 60,000 vehicles a day. US 280, US 82, US 19 and GA 300 carry the largest non-interstate north-south travel. The largest east-west travel movements occur on US 84 and parts of US 82. The major travel corridors are listed below

- I-75 from the northern end of the study area to the southern end
- US 280 to US 82 from Columbus to Albany to Tifton
- US 19 from Americus to Albany to Thomasville to Tallahassee
- GA 300 from Cordele to Albany
- US 319 from Tifton to Moultrie to Thomasville
- US 84 from Valdosta to Thomasville to Bainbridge to Georgia-Alabama line

Table 6.2.2 lists the total daily truck VMT for 2006 by functional class. Trucks account for one-fourth of the daily VMT travelled within the study area. Approximately 60% of daily truck VMT occurs on interstates, freeways and principal arterials. The percent of truck VMT by functional class ranges between 23-32 percent for all of the facilities with the exception of urban collectors. The high percentage on urban collectors is probably due to the exclusion of the MPO areas and the small amount of urban collectors included in this analysis.

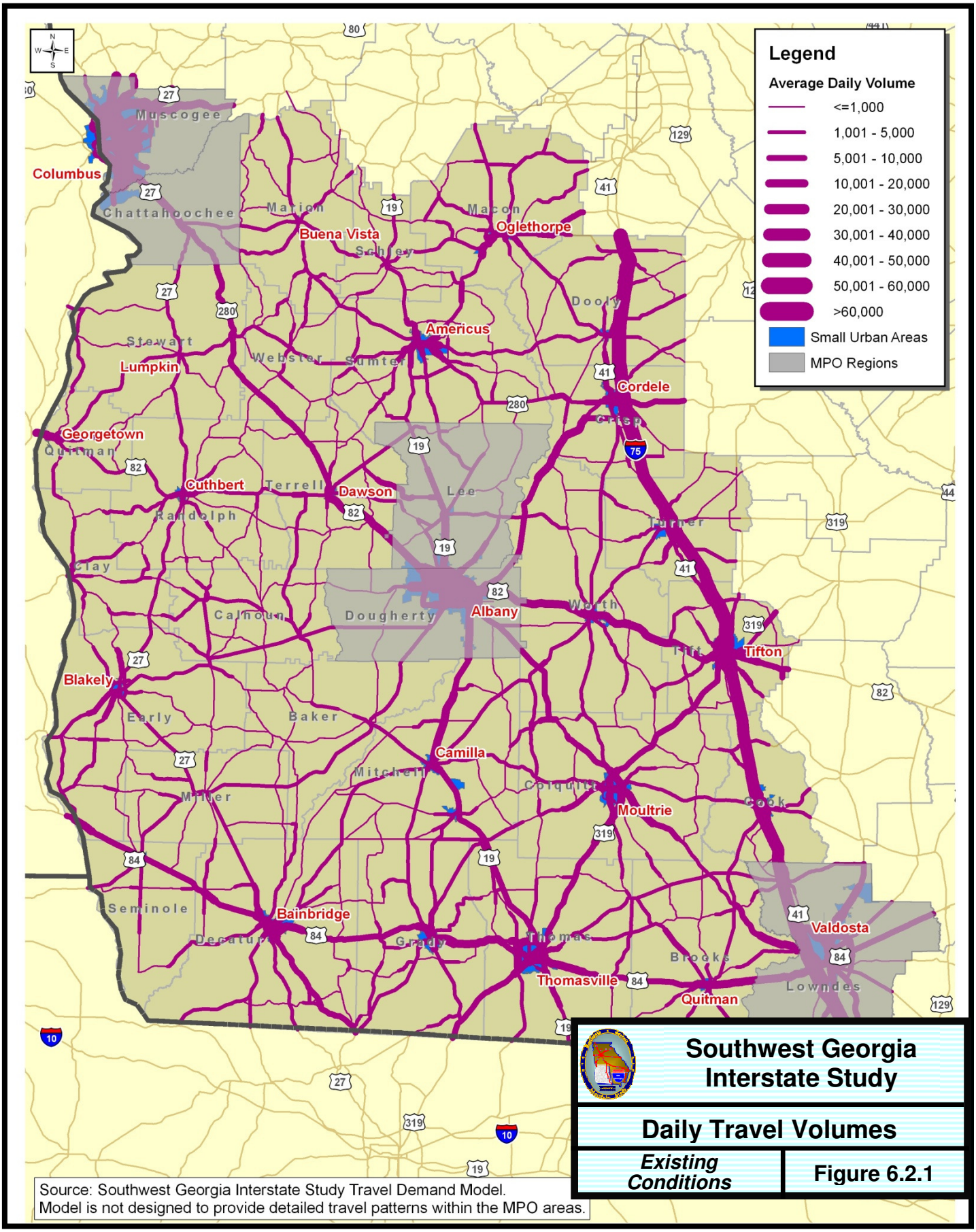

Legend
Average Daily Volume
<=1,000
1,001 - 5,000
5,001 - 10,000
10,001 - 20,000
20,001 - 30,000
30,001 - 40,000
40,001 - 50,000
50,001 - 60,000
>60,000
Small Urban Areas
MPO Regions
Columbus
Muscogee
Chattahoochee
Marion
Schley
Buena Vista
Macon
Oglethorpe
Stewart
Webster
Sumter
Americus
Lumpkin
Dooly
Cordele
Crisp
Georgetown
Quitman
Clay
Randolph
Cuthbert
Terrell
Dawson
Lee
Albany
Dougherty
Calhoun
Worth
Tift
Tifton
Turner
Blakely
Early
Baker
Camilla
Mitchell
Miller
Colquitt
Moultrie
Cook
Seminole
Bainbridge
Decatur
Grady
Thomas
Brooks
Thomasville
Quitman
Valdosta
Lowndes
Source: Southwest Georgia Interstate Study Travel Demand Model.
Model is not designed to provide detailed travel patterns within the MPO areas.
Southwest Georgia Interstate Study
Daily Travel Volumes
Existing Conditions
Figure 6.2.1

Table 6.2.2
Total Daily Truck Vehicle Miles Traveled for 2006

Area	Functional Class	Truck	Total	% Trucks
Rural	Rural Interstate	791,703	3,226,983	24.5%
	Rural Principal Arterial	781,001	3,512,861	22.2%
	Rural Minor Arterial	698,579	2,651,689	26.3%
	Rural Major Collector	660,773	2,130,690	31.0%
	Rural Minor Collector	31,867	100,132	31.8%
	Rural Local	4,376	19,444	22.5%
	Total	**2,968,299**	**11,641,799**	**25.5%**
Urban	Urban Interstate	140,327	563,019	24.9%
	Urban Freeway/Expressway	15,847	58,953	26.9%
	Urban Principal Arterial	405,998	1,487,728	27.3%
	Urban Minor Arterial	113,719	376,465	30.2%
	Urban Collector	1,785	2,957	60.4%
	Total	**677,676**	**2,489,122**	**27.2%**
	Grand Total	**3,645,975**	**14,130,921**	**25.8%**

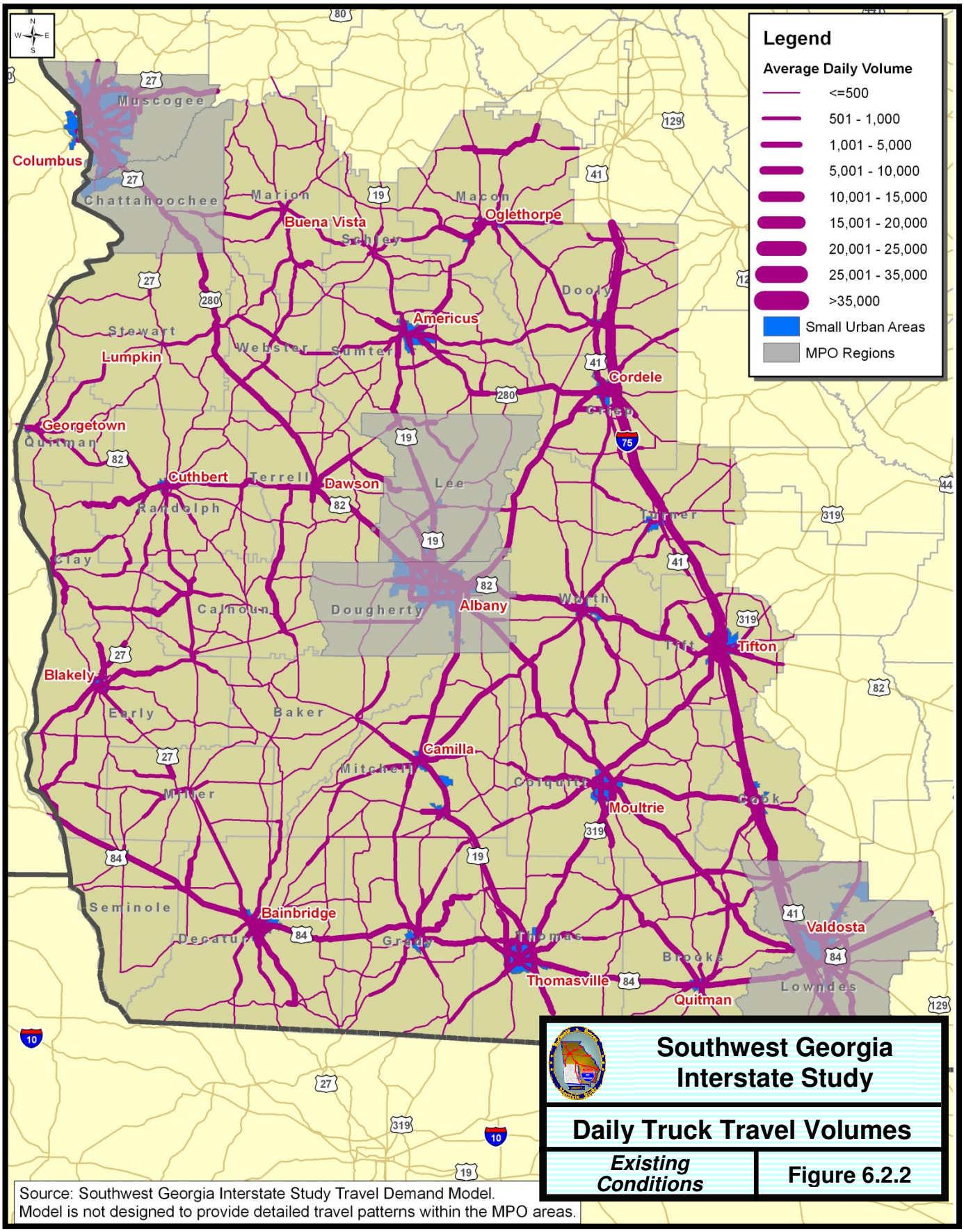
Source: Southwest Georgia Interstate Study Travel Demand Model

Figure 6.2.2 displays the daily truck volumes within the study area. As can be expected, the largest truck travel volumes occur on I-75. Large truck volumes occur on the same non-interstate facilities as the total daily volumes shown in the Figure 6.2.1. The truck volumes are higher the closer to the urban areas.

Figure 6.2.3 displays the Level–of-Service (LOS) within the study area. LOS represents the level of service for operations on a roadway facility and is represent by grades are denoted by the letters A, B, C, D, E and F. Their meanings are similar to grades that teachers give children on their report cards with an "A" representing little or no congestion/delay and "F" representing extreme congestion or long delays. This measure is derived by dividing the theoretical facility capacity by the traffic volume. Qualitative descriptions of traffic flow associated with each LOS are provided below. These descriptions are based on definitions established in the Highway Capacity Manual (HCM) 2000.

- LOS A: Represents free flow conditions. Individual users are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to maneuver within the traffic stream is extremely high.
- LOS B: In the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver within the traffic stream from LOS A.
- LOS C: In the range of stable flow, but it marks the beginning of the range of flow in which the operations of individual users become significantly affected by interactions with others in the traffic stream.
- LOS D: Represents high density but stable flow. Speed and freedom to maneuver are severely restricted, and the driver experiences a generally poor level of comfort and convenience.
- LOS E: Represents operating conditions at or near capacity level. Freedom to maneuver within the traffic stream is extremely difficult. Comfort and convenience levels are extremely poor, and driver frustration is generally high.
- LOS F: Describes forced or break-down flow. This condition exists when the amount of traffic approaching a point exceeds that which can traverse the point.

Outside of the MPO and urban areas, there are currently no facilities with LOS below C. This demonstrates that traffic volumes flow smoothly throughout the study area on a corridor level. There may be some select intersections which have operating problems within the urban areas, however regional travel demand models are not designed to estimate and evaluate traffic operations at intersections.


Legend
Average Daily Volume
<=500
501 - 1,000
1,001 - 5,000
5,001 - 10,000
10,001 - 15,000
15,001 - 20,000
20,001 - 25,000
25,001 - 35,000
>35,000
Small Urban Areas
MPO Regions
Columbus
Muscogee
Chattahoochee
Marion
Schley
Macon
Oglethorpe
Buena Vista
Americus
Sumter
Webster
Stewart
Lumpkin
Dooly
Cordele
Crisp
Georgetown
Quitman
Clay
Randolph
Cuthbert
Terrell
Dawson
Lee
Turner
Albany
Dougherty
Calhoun
Worth
Tift
Tifton
Blakely
Early
Baker
Mitchell
Camilla
Colquitt
Moultrie
Cook
Miller
Seminole
Bainbridge
Decatur
Grady
Thomas
Thomasville
Brooks
Lowndes
Valdosta
Quitman
Southwest Georgia Interstate Study
Daily Truck Travel Volumes
Existing Conditions
Figure 6.2.2
Source: Southwest Georgia Interstate Study Travel Demand Model.
Model is not designed to provide detailed travel patterns within the MPO areas.

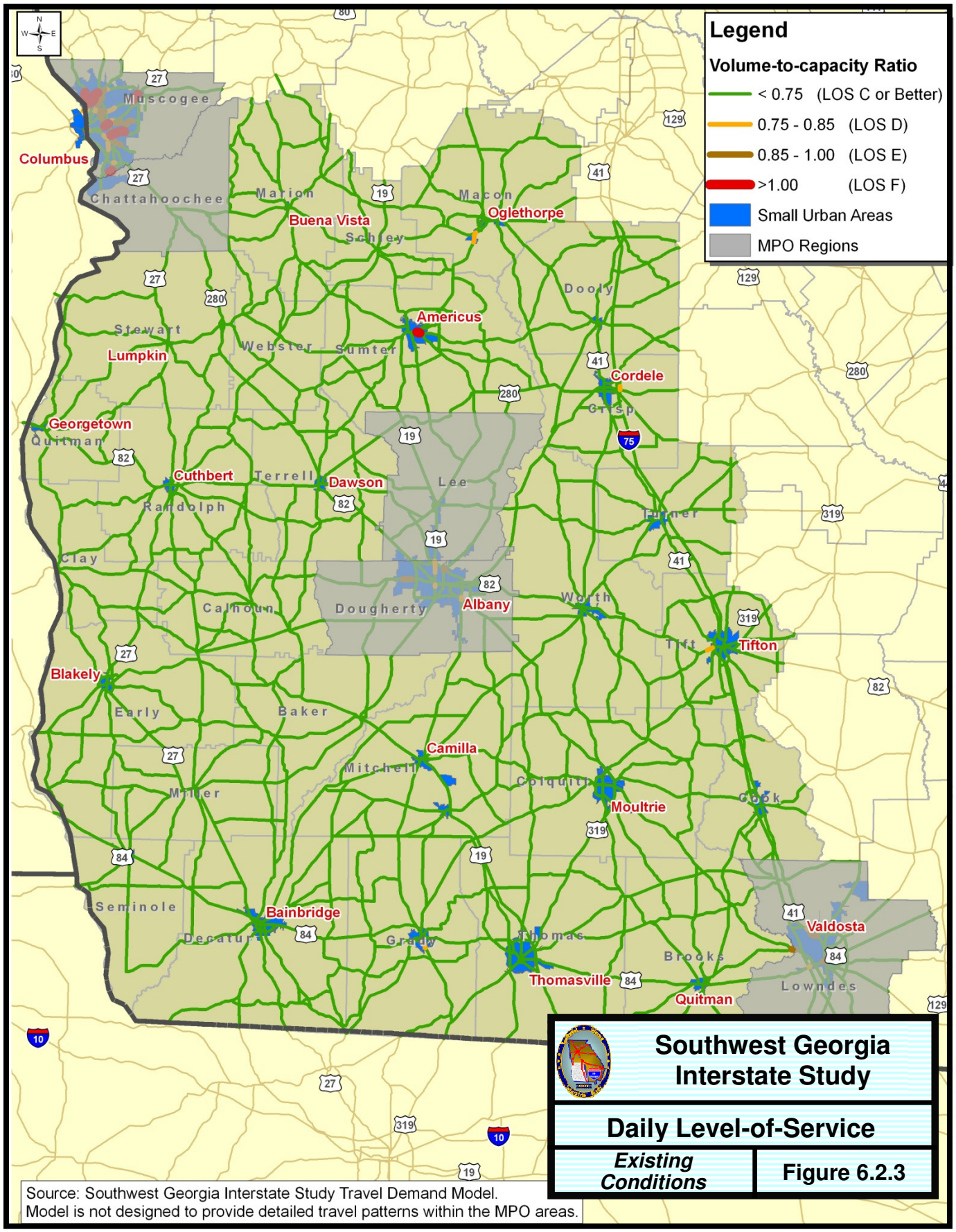

Legend
Volume-to-capacity Ratio
< 0.75 (LOS C or Better)
0.75 - 0.85 (LOS D)
0.85 - 1.00 (LOS E)
>1.00 (LOS F)
Small Urban Areas
MPO Regions
Columbus
Muscogee
Chattahoochee
Marion
Schley
Buena Vista
Macon
Oglethorpe
Dooly
Americus
Stewart
Webster
Sumter
Lumpkin
Cordele
Crisp
Georgetown
Quitman
Cuthbert
Randolph
Terrell
Dawson
Lee
Turner
Clay
Calhoun
Dougherty
Albany
Worth
Tift
Tifton
Blakely
Early
Baker
Camilla
Mitchell
Colquitt
Moultrie
Miller
Cook
Seminole
Bainbridge
Decatur
Grady
Thomas
Thomasville
Brooks
Valdosta
Lowndes
Quitman
Southwest Georgia Interstate Study
Daily Level-of-Service
Existing Conditions
Figure 6.2.3
Source: Southwest Georgia Interstate Study Travel Demand Model.
Model is not designed to provide detailed travel patterns within the MPO areas.

Figure 6.2.4 summarizes the percent of the rural roadway mileage that is currently operating at LOS C or better. There is no roadway mileage is currently experiencing congestion. Again this demonstrates there is no serious and constant congestion in the study area.

Figure 6.2.4
Percent of Rural Mileage
Operating at LOS C or Better

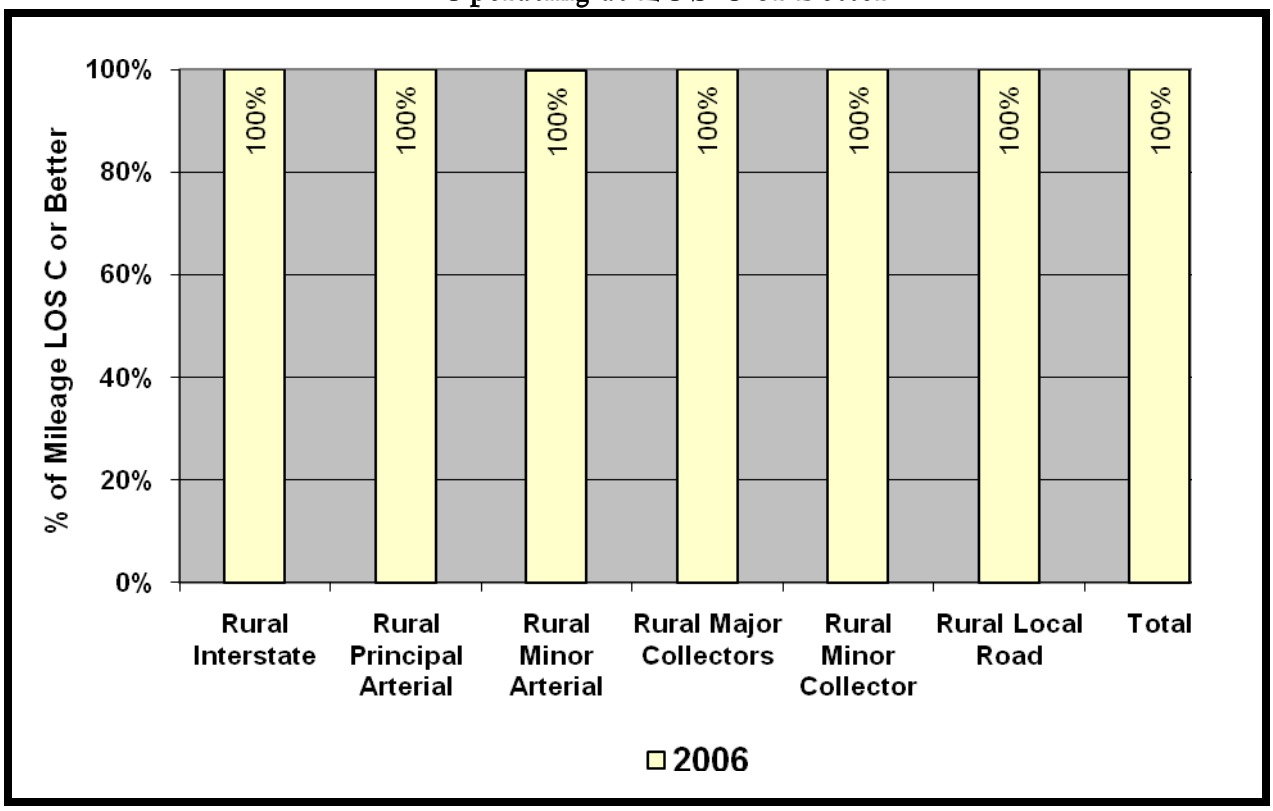


Figure 6.2.5 summarizes the percent of the urban roadway mileage that is currently operating at LOS C or better. Only two percent of the urban principal arterial roadway mileage is currently experiencing congestion. Again this demonstrates there is no serious and constant congestion in the study area.

Figure 6.2.5
Percent of Urban Mileage
Operating at LOS C or Better

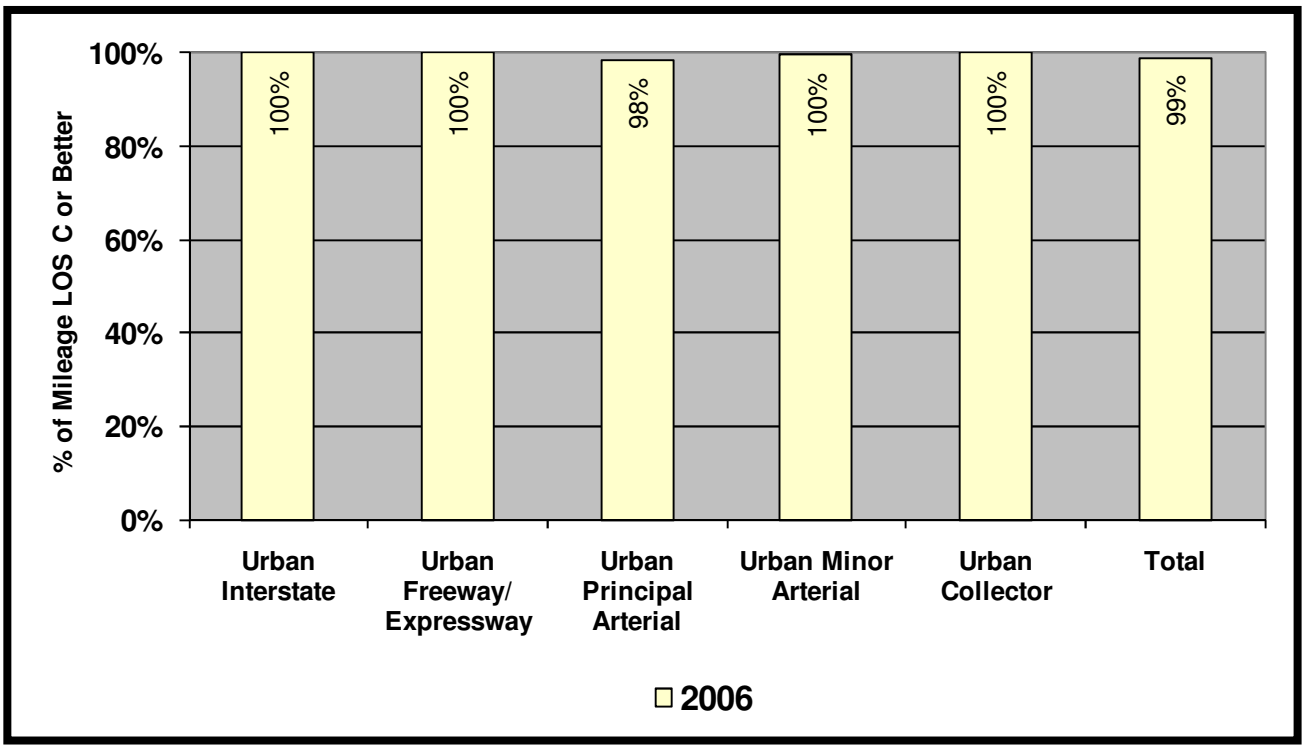


Figure 6.2.6 displays the seconds of delay per daily VMT by rural functional class. The rural interstate classification which consists primarily of I-75S, has the largest number of seconds delay, 1.4 per VMT. Rural minor arterials have .70 seconds of delay per daily VMT. All of the other facilities have less than a second of delay per daily VMT.

Figure 6.2.7 displays the seconds of daily delay per VMT by urban functional class. Urban prinicpal arterials have the largest number of seconds delay, 2.25 per daily VMT. These facilities are within or near the cities or municiplalities within the study area. Urban minor arterials have 1.6 seconds of delay per VMT while the urban interstates have one second of delay per daily VMT. Overall travelers within the study area experience little delay.

Figure 6.2.6
Seconds of Delay per Vehicle Mile of Travel
By Rural Functional Classification

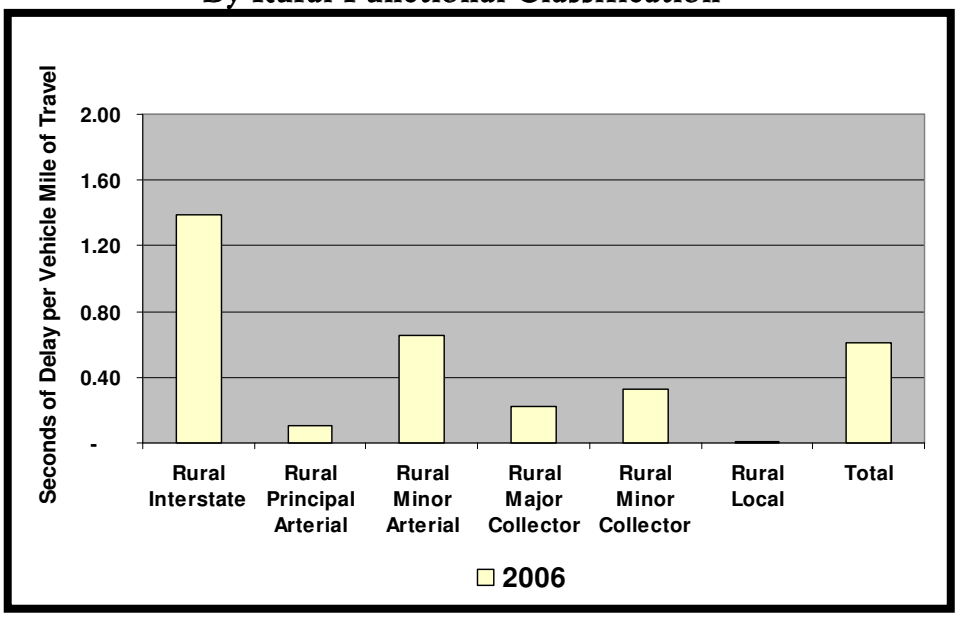
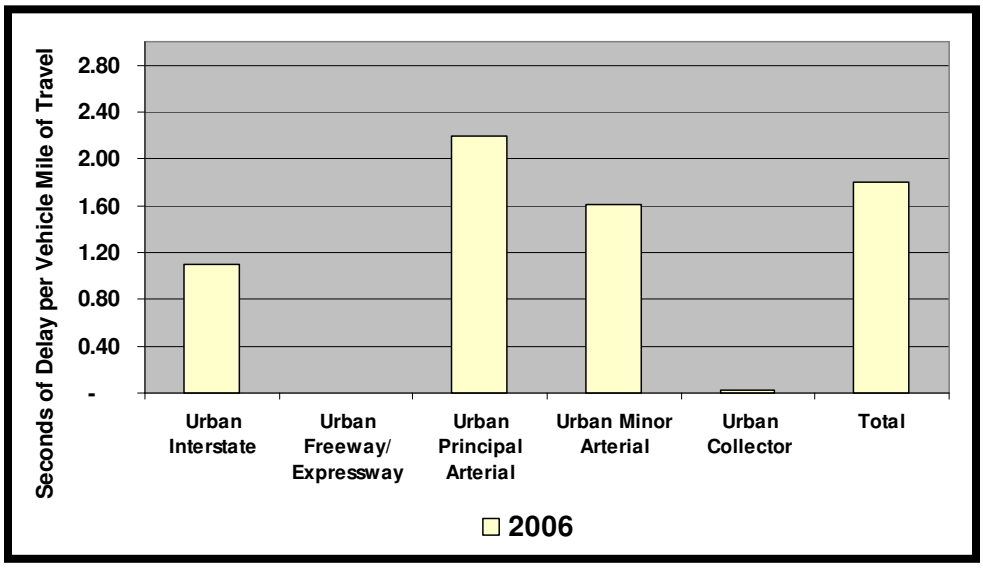


Figure 6.2.7
Seconds of Delay per Vehicle Mile of Travel
By Urban Functional Classification



Accessibility to interstate facilities is reflected in Table 6.2.3. There are three interstate facilities, I-75, I-185 and I-10 that are accessible to residents and workers in the study area. All of the urban areas are within a two hour drive to I-75, while half of the urban areas are within a one hour drive to I-75. Easy access to I-185 is available to residents and workers in the northwestern portion of the study area as shown by the travel times from Buena Vista, Columbus and Lumpkin. Reasonable access to I-10 in Florida is available to residents and workers in the southern part of the study as shown by the travel times from Moultrie, Quitman, Thomasville, and Valdosta. Almost all of the study area is within one hour access to an interstate facility with the exception of the western middle area of Early, Baker, Clay, Calhoun and Randolph counties. Table 6.2.3 shows that all of the urban areas within the study area are within 60-75 minutes access to an interstate facility.

Table 6.2.3
Access Time to Interstate Facility
(in Minutes)

Urban Area	I-75	I-185	I-10
Albany	49	96	145
Americus	42	81	176
Bainbridge	95	142	141
Blakely	117	103	191
Buena Vista	82	46	214
Camilla	72	129	134
Columbus	117	0	235
Cordele	0	117	133
Cuthbert	92	64	194
Dawson	64	71	167
Georgetown	121	66	222
Lumpkin	93	49	206
Moultrie	33	147	107
Oglethorpe	46	85	175
Quitman	24	185	76
Thomasville	48	159	103
Tifton	0	139	101
Valdosta	0	181	61

6.3 Crash Analysis

The primary purpose of the accident analysis is to identify "Above average" crash locations in the 32-county Southwest Georgia Interstate Study (SWGIS) area. This information will be used in the

study to aid in determining potentially feasible limited access transportation corridors as well as identifying areas where countermeasures could possibly address potential safety issues. In addition, it will be used to rank potentially feasible SWGIS freeway corridors in terms of their relative effectiveness toward overall crash reduction. A secondary utility of the above average crash location analysis findings is to provide Georgia DOT District offices and local public works officials with a list of highway sections whose three-year crash experience from 2004 to 2006 exceeds average or ordinary crash rate, total crash frequency or fatal crash frequency experience.

Three primary accident statistics were used to focus the identification of critical locations in the study area. These were:

- Number of Total Crashes;
- Number of Fatal Crashes; and,
- Calculated Accident Rate (Number of accidents per 100 million vehicle miles of travel).

In identifying the above average crash locations, an analysis process was developed and applied at a subarea level. The crash analysis procedure and highway link ranking methodology are described in detail in the *Crash Analysis Technical Memorandum*.

6.3.1 Data Sources

Three principal data files provided the fundamental information needed to conduct this crash analysis. These files are:

- Georgia Department of Transportation's Safety Management Crash Database (2004-2006) containing descriptive data, including location variables, for all crashes that occurred on public roads in the 32 county study area;
- Georgia Department of Transportation's Statewide Road Conditions File (RC File) obtained during calendar year 2007. This link-based road network file contains a broad cross-section of attributes pertaining to every section of public road in the State of Georgia. Information in this file is geo-referenced to a GIS street centerline file so it can be related to other sources of data, like the Department of Transportation's crash database; and
- Travel Demand Model Highway Network File which was built by the study team as part of their task to develop a travel demand model for Southwest Georgia. The travel demand model will be designed to establish current year (2006) and future year (2040) travel patterns within and through the study area.

The primary source of data in the analysis was the Department of Transportation's crash database of all accidents that occurred in the 32 county study area from 2004 to 2006. This data collection effort is one of the primary building blocks supporting the Governor's Strategic Highway Safety Plan for Georgia. The database is built from accident reports filed by local public safety officials who respond to motor vehicle crashes when they occur. The statewide master database is refined and maintained by the Georgia Department of Transportation's Safety Management Department, where they are catalogued by county, road identification number, and mile log. As such, each accident has location attributes which associate it with a particular roadway facility and point (in hundredths of a mile) on that facility. To perform the crash location analysis for the SWGIS, data was extracted from several different tables inside GDOT's accident database.

Although the study team was given accident records for all crashes that occurred inside the boundary of the SWGIS, this analysis focused on those accidents that occurred on roads represented in the travel demand model. Although the extent of highway facilities represented in the travel demand model amounts to a relatively small percentage of total route mileage for the entire public road system, a majority of all accidents that occurred in the SWGIS area between 2004 and 2006 took place on highway facilities represented in the travel demand model. To illustrate this point, the ratio of travel demand model network crashes to total crashes by SWGIS subarea is listed below.

Table 6.3.1.1
Percent of Total Crashes in Analysis

SUBAREA	TOTAL CRASHES	CRASH ANALYSIS CRASHES[1]	PERCENT OF TOTAL IN ANALYSIS
SWGIS Area	29,996	20,261	68%

(1) Crashes occurring on SWGIS travel demand model highway nework links.

6.3.2 Analysis Methodology

The crash analysis was conducted to identify where accidents occur most frequently and where fatal crashes take place. By taking both total crashes and fatal crashes into account, the analysis process identifies locations with above average composite total crash and fatal crash experiences. The terms "crashes" and "accidents" are used interchangeably herein. They both represent a single occurrence of a collision that involved one or more motor vehicle(s) on the state's public road system. Most crashes involved two or more vehicles, but there are a significant number involving just one vehicle.

Three accident attributes characterizing the composite level-of-safety on each segment of the analysis network were computed to determine above average crash locations. These three segment attributes were:

1. Accident Frequency;
2. Accident Rate; and,
3. Number of Fatal Accidents.

In addition, the Number of Truck Accidents for each network link was computed, but for informational purposes only. Crashes involving trucks are already factored into identifying above average crash locations by means of overall average accident frequency, accident rate and fatal accident frequency. The identification of highway network links with above average truck accident experience will provide the study team with information that will aid in determining which potentially feasible freeway improvement alternates serve truck movements better than others.

Accident rates are the most commonly used statistic employed by transportation professionals to gauge the relative safety of different highway facilities. However, rarely are accident rates considered outside of the context of a roadway's functional classification. Three functional classes were used: Interstate; Principal Arterial; and a single class combining Minor Arterials and Collectors. Interstate facilities are limited access, multi-lane highways that connect different geographic regions and cities. Principal Arterials, Minor Arterials and Collectors are less easy to distinguish. Principal Arterials are generally designed and built to facilitate the movement of motor vehicles through a corridor, recognizing that the roadway's primary users are motorists whose intention is to drive completely through the corridor. Minor Arterials and Collector roads are classified differently from Principal Arterials because they are designed to accommodate a higher proportion of local traffic seeking to access adjacent properties inside a travel corridor.

The Georgia Department of Transportation computes statewide summaries of its traffic and accident data by functional classification. One way of determining whether accident experience in a particular place or subarea occurs more frequently than what would be considered "normal" is to compare its accident rates with statewide averages. Statewide average crash rates by functional classification, for total accidents in 2004, are listed below.

- Interstate System – 154 crashes per 100 million AVMT
- Principal Arterial System – 375 crashes per 100 million AVMT
- Minor Arterial and Collector System – 382 crashes per 100 million AVMT

These average crash rates are based upon 2004 traffic volumes and accident experience collected throughout the State of Georgia, the most current year for which these complete system-level statistics are available. The Department of Transportation uses standard units of "100 million annual vehicle miles of travel" or 100 million AVMT to express crash rates.

6.3.3 Crash Rates

Accident rates were used to identify Travel Demand Model network links that were most susceptible to crashes occurring during the 2004 to 2006 time frame. The use of crash rates normalizes the accident frequency statistic to account for the fact that higher frequency is strongly correlated to elevated traffic volumes and lower accident frequency is associated with low volumes. Crash rates are expressed as "Number of Accidents" Per "100 million vehicle miles of travel". As such, roadway segments having higher computed accident rates are associated with the following characteristics:

- Large number of accidents;
- Low traffic volumes; and/or,
- Short segment lengths.

6.3.4 Fatal Crash Locations

In the crash analysis, number of fatal accidents is one of the key factors in identifying above average crash locations. They have disproportionately higher monetary and social costs associated with them. Fatal accidents are associated with specific Travel Demand Model network links in exactly the same way as total accidents, explained in a previous section.

The identification of fatal accidents, as opposed to total accidents, is done by using the Georgia Department of Transportation crash database record attribute "Fatalities". A fatal crash, in this analysis, is exactly that. It is not a misrepresentation of the variable "Fatalities" which corresponds to the number of fatalities resulting from a particular crash. Fatal crashes assigned to travel model network segments were post-processed in an MS Access database using the "Fatalities" attribute key.

6.3.5 Above Average Crash Location Identification

Accident rates, total accident frequency and the number of fatal crashes were computed for all Travel Demand Model network links. These three crash statistics, tabulated at the travel model link level, supplied the framework to determine above average crash locations in the Crash Analysis. In this context, above average crash locations are those base year model network links where crash experience from 2004 to 2006 exceeded average or ordinary crash rate, total crash frequency or fatal crash frequency experience. Those sections of the travel model highway network with a clearly

higher composite score than what would be considered average or ordinary were identified and categorized as "above average" crash locations.

Analyses leading up to the identification of above average crash locations were performed for ten subareas of the SWGIS area. Above average crash road sections were not determined from the relationship between local network link crash rates and statewide average crash rates, but by comparing crash rate, total crash frequency and number of fatal crashes on network links inside each of ten (10) SWGIS subareas with each other. As such, the above average crash locations were identified from a population of road segments within a particular subarea.

Composite crash safety scores were computed for each network link based on the individual accident rate, total crash frequency, and number of fatal crashes statistics as described in the previous sections. Composite scores were for each network link by ranking each individual crash statistics using the scoring system described below.

Accident Rates – All network links are sorted in descending order by accident rate. Each link is then assigned an accident rate pentile number, from 1 through 5. Links whose crash rates are highest fall into Pentile 1. Highway links whose rates are '0' or very low are assigned Pentile 5. Based on this pattern of Pentile designation for the network links, the scores shown in Table 6.3.5.1 were assigned for the accident rate statistic.

Table 6.3.5.1
Accident Rate Pentile Scores

PENTILE	SCORE
1	3
2	2
3	1
4	0
5	0

Total Accident Frequency – All network links are sorted in descending order by number of total crashes. Each link is then assigned an accident rate pentile number, from 1 through 5. Links whose crash counts are highest fall into Pentile 1. Highway links having '0' crashes or a very low count are assigned Pentile 5. Based on this pattern of Pentile designation, the scores shown in Table 6.3.5.2 were assigned for the total accident frequency statistic.

Table 6.3.5.2
Total Accident Frequency Pentile Scores

PENTILE	SCORE
1	3
2	2
3	1
4	0
5	0

Number of Fatal Accidents – Scoring for fatal accidents is more straightforward than for the other two crash statistics. Highway links having three or more fatal crashes during the 2004-2006 time frame were assigned a score of 5. This is an extremely rare occurrence, but does happen on segments of I-75 for example. If two fatal crashes occurred on a link, a score of 3 was assigned. A score of 2 was assigned if one fatal crash occurred and a score of '0' for those links where no fatal crashes were recorded. The individual scoring system for network links having fatal accidents does not come from a highway safety planning textbook. It is, however, the study team's method of including crash severity along with crash rate and frequency in identifying above average crash locations which is a "Best Practice" approach to conducting system-level highway safety planning.

The composite crash safety score for each link was computed from the sum of scores assigned to the crash rate, total crash frequency and fatal accident statistics. Over 90 above average crash locations were identified from the investigation of motor vehicle crashes in the Southwest Georgia Interstate Study area. The full range of highway segments from which pieces were identified as being "above average" crash locations included all those base year highway network links in the SWGIS travel demand model, excluding roadway segments residing inside Metropolitan Planning Organization (MPO) boundaries. Because urbanized areas inside the three MPOs were excluded from this analysis, highway network links in Muscogee, Dougherty and Lowndes counties were not included in the analysis. Although a portion of Lee County is inside the Albany-Dougherty MPO boundary, Lee County network links were included in the crash analysis. Above average crash links are highlighted in a map of the study area, Figure 6.3.5.1. The links are displayed in color-coded bands indicating the ones whose composite score for Total Crashes, Fatal Crashes and Accident Rate were clearly above average composite scores computed for the total population of roadways in the particular subarea being analyzed.

All of the "above average" crash links identified in the analysis are listed in Table 6.3.5.3. The largest calculated composite score for above average crash locations was '10' and the lowest was '6'.

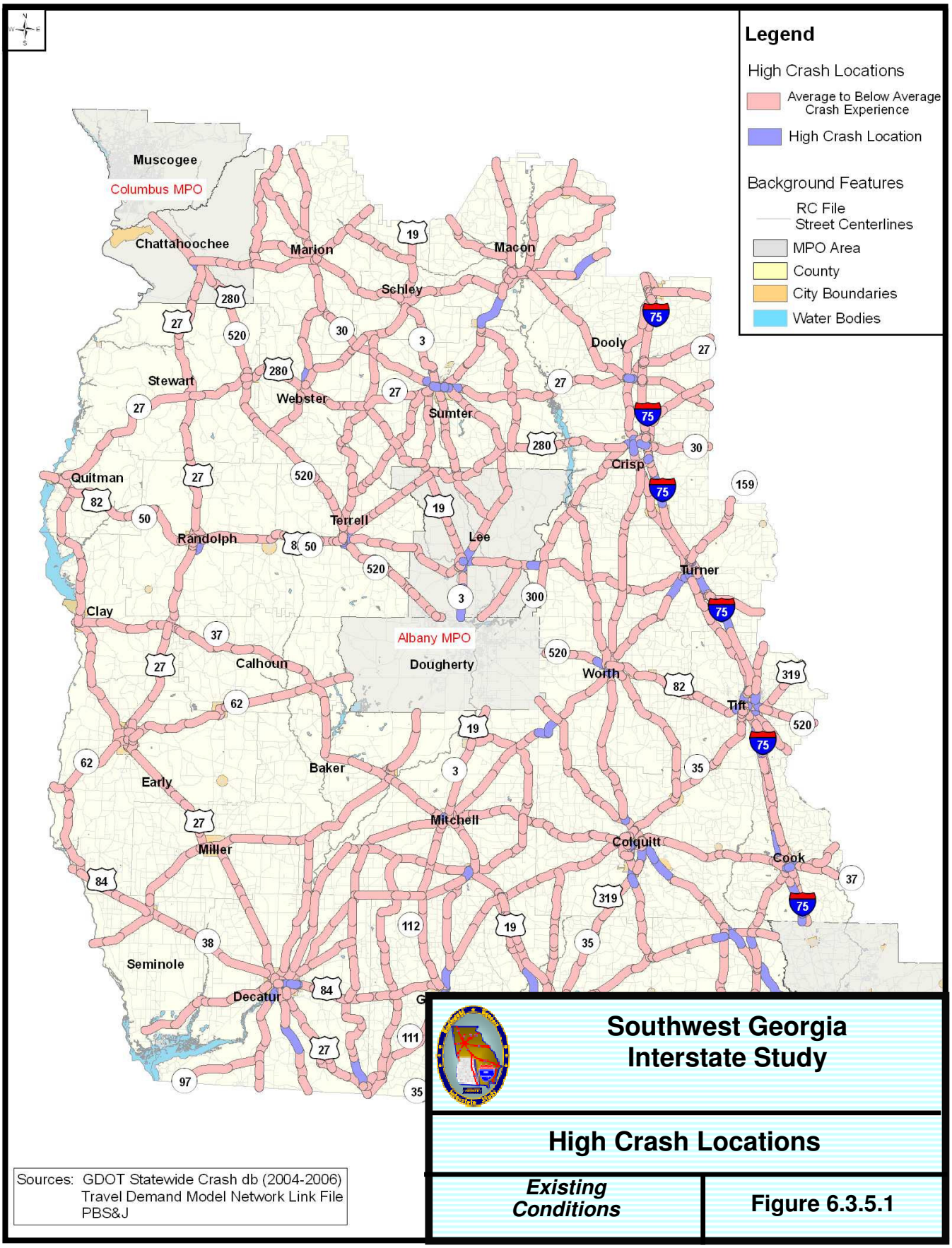

Legend
High Crash Locations
Average to Below Average Crash Experience
High Crash Location
Background Features
RC File Street Centerlines
MPO Area
County
City Boundaries
Water Bodies
Muscogee
Columbus MPO
Chattahoochee
Marion
Schley
Macon
Stewart
Webster
Sumter
Dooly
Quitman
Randolph
Terrell
Lee
Crisp
Turner
Clay
Albany MPO
Dougherty
Calhoun
Worth
Tift
Baker
Early
Mitchell
Colquitt
Cook
Miller
Seminole
Decatur
Sources: GDOT Statewide Crash db (2004-2006)
Travel Demand Model Network Link File
PBS&J
Southwest Georgia Interstate Study
High Crash Locations
Existing Conditions
Figure 6.3.5.1

Table 6.3.5.3
Above Average Crash Location List – Study Area

FACILITY NAME	COUNTY	LOCATION	ACCIDENT RATE SCORE	TOTAL ACCIDENT FREQUENCY	NUMBER OF FATAL CRASHES	COMPOSITE SCORE
I-75	Turner	SR32/Jefferson Davis to SR252/E. Inaha	0	3	7	**10**
I-75	Crisp	Rockhouse Rd. to 1st St./Hawpond Rd.	1	3	5	**9**
I-75	Tift	CR204/Southwell Blvd. to Omega Eldorado Rd.	3	3	3	**9**
US19/SR 3/Slappey	Lee	Dougherty Co. to SR133/Forrester Pkwy.	1	3	5	**9**
BUS27/Dothan Rd.	Decatur	US84/US27 Bypass to SR253/Newton Rd.	3	3	2	**8**
I-75	Cook	Barneyville Rd. to Moultrie Rd.	0	3	5	**8**
I-75	Cook	CR216 to Old Coffee Rd.	0	3	5	**8**
I-75	Dooly	Houston Co. to SR230/2nd St.	0	3	5	**8**
I-75	Tift	Omega Eldorado Rd. to Cook County	3	2	3	**8**
I-75	Tift	Old Omega Rd. to Central Ave.	3	2	3	**8**
I-75	Tift	US41/SR7 to Whidden Mill/8th St.	3	3	2	**8**
I-75	Turner	SR159/North St. to 0.3 miles south	2	3	3	**8**
I-75	Turner	SR252/E. Inaha to Tift Co.	0	3	5	**8**
Spaulding/E. Railroad St.	Macon	E. Railroad St. to SR26/Walnut St.	3	3	2	**8**
SR 133/Billy Langdale Pkwy.	Colquitt	US319/Billy Langdale Pkwy. to Sardis Church Rd.	2	3	3	**8**
SR 37	Cook	SR76/S. Elm St. to US41/SR7/Hutchinson	3	3	2	**8**
SR 93/Curry St.	Mitchell	US19/SR3 to SR65/Hand Ave.	3	3	2	**8**
SR 93/N. Broad St.	Grady	1st Ave. to 6th Ave.	3	3	2	**8**
US 280/SR 30/16th Ave.	Crisp	I-75 to Pecan St.	3	3	2	**8**
US 82/SR 520/5th St.	Tift	Goff St. to US319/SR35	3	2	3	**8**
US 84/SR 38	Seminole	Spooner Rd. to CR24	3	3	2	**8**
I-75	Cook	Moultrie Rd. to Lowndes Co.	1	3	3	**7**
SR 112	Turner	SR32/Jefferson Davis to CR101	2	2	3	**7**
SR 112	Worth	Pope St. to Spring Flats Rd.	2	3	2	**7**
SR 118	Terrell	SR32/E. Lee St. to Billy Strong Rd.	2	3	2	**7**
SR 122	Brooks	SR333 to Aldeman Road	3	2	2	**7**
SR 27/E. Forsyth St.	Sumter	SR27/Vienna Rd. to SR27/E. Lamar St.	3	2	2	**7**
SR 3/Old Albany	Thomas	Breezy Pines Ln. to Rock Rd.	2	2	3	**7**
SR 30/Adderton St.	Sumter	Peachtree St. to US19/SR3/M.L. King Blvd.	2	3	2	**7**
SR 309	Decatur	Toole Dairy Rd. to Bower Station Rd.	2	2	3	**7**
SR 33/Thomasville Rd.	Colquitt	US319/Veterans Pkwy. to 26th Ave.	2	3	2	**7**
SR 41	Webster	CR127 to SR153	2	2	3	**7**
SR 49	Sumter	SR308 to Pessell Creek Rd.	3	2	2	**7**
SR 520/Corridor Z	Chattahoochee	SR55/Broad St. to US27/SR1/Well St.	1	3	3	**7**
SR 520/Corridor Z	Terrell	SR55 to Pecan St.	2	3	2	**7**
SR 76	Brooks	SR122/Main St. to CR213	3	2	2	**7**
US 27/SR 1	Randolph	US82/SR50 to BUS27/Blackley St.	2	2	3	**7**
US 319/East Bypass	Colquitt	SR133/Billy Langdale Pkwy. to Holmes Dr.	2	3	2	**7**
US 319/SR 35	Grady	SR93 to Metcuff Rd.	1	3	3	**7**
US41/SR 7	Tift	CR204/Southwell Blvd. to Omega Eldorado Rd.	3	2	2	**7**
US 82/SR 520	Tift	Carpenter Rd. to CR411	3	2	2	**7**
US 84/SR 38	Decatur	Zom Rd. to US84/US27 Bypass	2	3	2	**7**
SR 122	Brooks	Segment east of SR133	3	3	0	**6**
SR 122	Brooks	Segment west of SR133	3	3	0	**6**
SR 133	Brooks	Segment north of SR122	2	2	2	**6**
SR 133	Brooks	Segment south of SR122	1	3	2	**6**
SR 133	Brooks	CR14 to CR280	0	3	3	**6**
US 84/SR 38	Brooks	SR76/S. Court to SR76/M.L. King Dr.	3	3	0	**6**
US 84/SR 38	Brooks	Lowndes Co. Border to CR15	0	3	3	**6**

Table 6.3.5.1
Critical Location List (Continued)

FACILITY NAME	COUNTY	LOCATION	ACCIDENT RATE SCORE	TOTAL ACCIDENT FREQUENCY	NUMBER OF FATAL CRASHES	COMPOSITE SCORE
BUS319/SR 33/N. Main St.	Colquitt	1st Ave. NE to 2nd Ave. SE	3	3	0	**6**
SR 133/Billy Langdale Pkwy.	Colquitt	Sardis Church Rd. to Culbertson Rd.	0	3	3	**6**
SR 133/Billy Langdale Pkwy.	Colquitt	Woodmen Rd. to US319/Tifton Hwy.	3	3	0	**6**
SR 33	Colquitt	James Buckner Rd. to SR133/Billy Langdale Pkwy.	2	2	2	**6**
SR 33/Thomasville Rd.	Colquitt	US319/Veterans Pkwy. to Gene McQueen Rd.	3	3	0	**6**
SR 37/1st Ave./E. Central	Colquitt	10th St. SE to 11th St. SW	3	3	0	**6**
SR 257/8th Ave.	Crisp	US41/SR7/7th St. to 2nd Ave.	3	3	0	**6**
SR 300	Crisp	I-75 to 10th St./Culpepper	3	1	2	**6**
US 280/SR 30/16th Ave.	Crisp	Pecan St. to US41/SR7/7th St.	3	3	0	**6**
US 280/SR 30/16th Ave.	Crisp	US41/SR7/7th St. to 15th St.	3	3	0	**6**
US 41/SR 7/7th St.	Crisp	US280/SR30/16th Ave. to Exa Ave.	3	3	0	**6**
US 41/SR 7/7th St.	Crisp	US280/SR30/16th Ave. to SR257/8th Ave.	3	3	0	**6**
BUS 27/Dothan Rd.	Decatur	SR253/Newton Rd. to SR97/E. Calhoun St.	3	3	0	**6**
BUS 27/N. West St.	Decatur	SR97/E. Calhoun St. to BUS27/Shotwell St.	3	3	0	**6**
BUS 27/S. Scott St.	Decatur	BUS84/E. Shotwell St. to US84/US27 Bypass	3	3	0	**6**
BUS 27/Shotwell St.	Decatur	SR97/West St. to BUS84/E. Shotwell St.	3	3	0	**6**
BUS 84/Shotwell St.	Decatur	BUS27/S. Scott St. to US84/SR38 Bypass	3	3	0	**6**
SR 262/Antioch Church Rd.	Decatur	Calvary Rd. to Amsterdam Rd.	2	2	2	**6**
SR 97/Faceville Rd.	Decatur	Crawford Rd. to US84/US27 Bypass	1	2	3	**6**
SR 97/West St.	Decatur	SR97/Faceville Rd. to BUS84/Shotwell St.	3	3	0	**6**
SR 26	Macon	SR329 to CR194	1	3	2	**6**
SR 26/Walnut St.	Macon	SR90/S. Dooley St. to Spaulding Rd.	3	3	0	**6**
SR 49/Andersonville Trail	Macon	CR18 to SR228	0	3	3	**6**
SR 27/Lamar St.	Sumter	US19/SR3/M.L. King Blvd. to SR49/Tripp St.	3	3	0	**6**
SR 27/Vienna Rd.	Sumter	Southland Rd. to US280/SR30/E. Forsyth St.	3	3	0	**6**
SR 27/W. Forsyth St.	Sumter	SR366/Lee St. to US19/SR3/M.L.King Blvd.	3	3	0	**6**
SR 377/Lee St.	Sumter	SR27/E. Forsyth St. SR27/E. Lamar St.	3	3	0	**6**
SR 49/Tripp St.	Sumter	SR27/E. Lamar St. to SR27/E. Forsyth St.	3	3	0	**6**
US19/SR 3/M.L. King Blvd.	Sumter	SR27/W. Forsyth St. to SR30/Adderton St.	3	3	0	**6**
BUS 84/Smith Ave.	Thomas	Covington Ave. to S. Broad St.	3	3	0	**6**
Madison St.	Thomas	SR122/Remington Ave. to North Blvd.	3	3	0	**6**
S. Broad St.	Thomas	BUS84/Smith Ave. to S. Hansell St.	3	3	0	**6**
SR 3/Old Albany	Thomas	Breezy Pines Ln. to Pine Tree Blvd.	3	3	0	**6**
US19/US 84/SR 38	Thomas	Old Monticello Rd. to US84/Boston Rd.	1	3	2	**6**
US19/US 84/SR 38	Thomas	Commercial Dr. to Clark Rd.	3	3	0	**6**
US 319/SR 35	Thomas	Will Watt Pkwy. to SR122	3	3	0	**6**
US 84/Wiregrass-Georgia	Thomas	Cassidy Rd. to Will Watt Pkwy.	3	3	0	**6**
Will Watt Pkwy.	Thomas	North Blvd. to SR122	3	3	0	**6**
SR 125	Tift	Brighton Rd. to W. Higdon Rd.	3	1	2	**6**
US 319/SR 35	Tift	Feery Lake Rd. to Bowen Rd.	3	1	2	**6**
US 319/SR 35	Tift	CR220 to Crum Rd./CR59	3	1	2	**6**
US 82/SR 520	Tift	CR8 to US319/SR35	3	1	2	**6**
SR 112	Worth	Mitchell Co. to SR133/Billy Langdale Pkwy.	3	1	2	**6**
SR 112/N. Isabella St.	Worth	Pope St. to US82/SR520/Franklin St.	3	3	0	**6**
SR 256/M.L. King Dr.	Worth	SR33/N. Main St. to Town Creek Dr.	3	3	0	**6**
SR 32	Worth	Lee Co. to SR300/GA-Florida Pkwy.	2	2	2	**6**
SR 33/N. Main St.	Worth	SR112 to SR256/M.L. King Dr.	3	3	0	**6**
US 82/SR 520/Franklin St.	Worth	Massey Airport Rd. to SR313/N. Monroe St.	1	3	2	**6**
US 82/SR 520/Franklin St.	Worth	SR313/N. Monroe St. to SR33/N. Main St.	3	3	0	**6**

Source: Southwest Georgia Interstate Study High Crash Location Analysis

6.4. Evacuation Routes

Due to the proximity to the Florida Gulf Coast, roadways within the southern part of the study area have been designated evacuation routes in case of a hurricane/tropical storm. The evacuation routes within the study area are shown in Figure 6.4.1. Table 6.4.1 lists the routes based on the point of entry into the study area.

Table 6.4.1
Evacuation Routes

Entry Point	Evacuation Route
Entering Georgia on northbound I-75 (from Florida)	Take northbound I-75 north through Valdosta and Tifton to Cordele and points north.
Entering Georgia on northbound US 319 (from Tallahassee area)	Take northbound US 319 through Thomasville and on to Moultrie, Tifton, and points north.
	-or-
	Take northbound US 319 to Thomasville and then US 19/SR 3 to Albany and then westbound US 82 to Dawson.
	-or-
	Take northbound US 319 to Thomasville and then US 19/SR 3 to Albany and then northbound SR 300 north to Cordele.
Entering Georgia on northbound US 27 (from Tallahassee area)	At the Georgia state line, take SR 111 through Cairo and on to Meigs. Then take northbound US 19/SR 3 to Albany. Then take northbound SR 300 to Cordele.
	-or-
	At the Georgia state line, continue on US 27/SR 1 through Bainbridge, Colquitt, Blakely and on to Cuthbert.
Entering Georgia on SR 302 (via Florida's SR 267/Quincy area)	Take northbound SR 302 to SR 97 north to Bainbridge. Then take northbound US 27 through Colquitt and Blakely.
Entering Georgia on SR 241 (via Florida's SR 65/Quincy area)	Take northbound SR 241 to Attapulgus. Then take northbound US 27 through Bainbridge, Colquitt and Blakely.
Entering Georgia on SR 97 (from US 90 in Florida)	Take SR 97 through Faceville and on to Bainbridge. Then take northbound US 27 through Colquitt and Blakely.
Entering Georgia on US 221/SR 76 (from Greenville, Florida)	Take northbound US 221 to Quitman. Then take northbound SR 333 to New Rock Hill. Then take northbound SR 133 to Moultrie and northbound US 319 to Tifton.

Table 6.4.1 (continued)
Evacuation Routes

Entry Point	Evacuation Route
Entering Georgia on SR 333 (from Florida's SR 53)	Take northbound SR 333 to Quitman. Continue on northbound SR 333 to New Rock Hill. Then take northbound SR 133 to Moultrie and northbound US 319 to Tifton.
Entering Georgia on SR 31 (from Florida's SR 145)	Take northbound SR 31 to I-75. Then take northbound I-75 to Cordele and points north.
Entering Georgia on US 441 (from Florida)	Take northbound US 441 through Edith and Homerville and on to Douglas.
Entering Georgia on northbound US 129 (from Jasper, Florida)	Take northbound US 129 to Statenville. Then take westbound SR 376 to northbound US 41 to northbound I-75.
Entering Georgia on SR 94 (from Florida's SR 2)	Take northbound SR 94 to Edith. Then take northbound US 441 to Homerville and on to Douglas.
Entering Georgia on SR 91 (from Alabama's SR 2/Malone area)	Take SR 91 through Donalsonville to Colquitt. Then take northbound US 27 to Blakely and Cuthbert
Entering Georgia on SR 62 (from Alabama's SR 52/Dothan area)	Take SR 62 to Blakely. Then take northbound US 27 towards Cuthbert

Source: Georgia's Disaster & Emergency Website, Gulf Coast Hurricane Evacuation Routes
http://www.georgia-navigator.com/hurricane/gulf.shtml

Source: Georgia's Disaster & Emergency Website, Gulf Coast Hurricane Evacuation Routes
http://www.georgia-navigator.com/hurricane/gulf.shtml

Appendix A

List of Studies Reviewed for the Southwest Georgia Interstate Study

List of Studies Reviewed for the Southwest Georgia Interstate Study

GDOT

- Update of 1995 State Route 38 Business Study, Thomas County (March, 1999)
- Revised I-75 at SR 215 Needs Analysis(March, 2002)
- State Route 133 Corridor Study (September, 1999)
- SR 91 CORRIDOR STUDY: Seminole, Miller, Baker and Dougherty Counties (February, 2005)
- SR 122 Truck Route (November, 2000)
- Moultrie-Colquitt County Multimodal Transportation Study (June, 2001)
- Vienna Bypass Final Report (2000)
- Colquitt Bypass Study (October, 2001)
- US 41 Corridor Study (April, 2005)
- SR 62 Corridor Study (August, 2006)
- Transportation Needs Analysis for the Tifton Georgia Area (February, 2000)
- Cuthbert Bypass Study (June, 1998)
- Madison to Valdosta Corridor Study (May, 1997)
- SR31 Passing Lane Study, Valdosta to Lakeland (June, 2003)
- Cairo Corridors Transportation Study (March, 2003)
- Cordele Truck Loop Study (November 2003)
- Colquitt County and City of Moultrie Transportation Analysis (March, 1993)
- Adel Bypass Study (February, 2002)
- Study of Proposed Improvements to GA Highway 133 (1999/2000)
- Latin America Trade and Transportation Study (March, 2001)
- An Analysis of the Governor's Road Improvement Program (GRIP) for the Georgia Department of Transportation
- The Economic Benefits of the Governor's Road Improvement Program (GRIP) (September, 2003)
- GDOT Statewide Truck Lanes Needs Identification Study (July, 2007)
- GDOT 2005 – 2035 Georgia Statewide Freight Plan (October, 2006)
- GDOT 2005 – 2035 Georgia Statewide Transportation Plan (January, 2006)
- GDOT Interstate Systems Plan
- Georgia Department of Transportation Fact Book 2007
- GDOT Administrative Guide and Grant Application For Rural Public Transportation Programs Title 49 U.S.C. Section 5311(2005)
- US-280 Corridor Management Plan (May, 2003)
- Central Georgia Corridor Study (June, 2001)

- West Georgia Toll Road Studies (1970s)
- Analysis of the Governor's Road Improvement Program (GRIP) (1990s)
- The Economic Benefits of the Governor's Road Improvement Program (GRIP) (2003)

MPO Plans

- Dougherty Area Regional Transportation Study (DARTS) 2030 Transportation Plan (December, 2004)
- Dougherty Area Regional Transportation Study (DARTS) 2008 Transportation Improvement Program (July, 2007)
- Dougherty Area Regional Transportation Study (DARTS) 2008 Unified Planning Work Program (April, 2007)
- Albany/Dougherty Freight Profile (February, 2008)
- Columbus-Phenix City (CPCMPO) 2030 Transportation Plan (2005)
- Columbus-Phenix City (CPCMPO) 2008 Transportation Improvement Program (May, 2007)
- Columbus-Phenix City (CPCMPO) 2008 Unified Planning Work Program (May, 2007)
- Valdosta-Lowndes Metropolitan Planning Organization (VLMPO) Metro 2030 Long Range Transportation Plan (September, 2005)
- Valdosta-Lowndes Metropolitan Planning Organization (VLMPO) 2008 Transportation Improvement Program
- Valdosta-Lowndes Metropolitan Planning Organization (VLMPO) 2008 Unified Planning Work Program (June, 2008)

Local Plans and Studies

- Albany Transit System 2007 Americans with Disabilities Act (ADA) Plan (December, 2007)
- The City of Albany/Albany Transit System Transit Development Plan (2009-2014) (February, 2008)
- Community Assessment for the 2028 Comprehensive Plan, Columbus Consolidated Government (November, 2007)
- Early County 2055
- Lower Chattahoochee Region Comprehensive Economic Development Strategy

Florida Studies

- FDOT 2006 Short Range Component of the 2025 Florida Transportation Plan and Annual Performance Report (February, 2007)
- FDOT 2025 Florida Transportation Plan

- FDOT Strategic Intermodal Systems Plan (January, 2005)
- Tallahassee/Leon County Comprehensive Plan
- Capital Region Transportation Planning Agency (CRTPA) 2030 Long Range Transportation Plan

Alabama Studies

- ALDOT Alabama Statewide Transportation Plan Update (June, 2008)
- ALDOT Statewide Transportation Improvement Program Fiscal Years 2006 – 2008 (April, 2005)
- Southeast Wiregrass Area Metropolitan Planning Organization (SWAMPO) 2030 Long Range Transportation Plan (April, 2006)

Comprehensive and Land-Use Plans (AECOM)

- Albany-Dougherty County Comprehensive Plan 2005 - 2025 (June, 2006)
- Baker County and the City of Newton Comprehensive Planning Assessment (February, 2006)
- Baker County and the City of Newton Ten Year Comprehensive Plan Community Agenda
- Greater Brooks County 2030 Comprehensive Plan Draft Community Assessment (June, 2007)
- Calhoun County Consolidated Comprehensive Plan (2004)
- Joint County/City Comprehensive Plan for Chattahoochee County and the City of Cusseta (March, 1992)
- Joint County/City Comprehensive Plan for Clay County and the cities of Bluffton and Ft. Gaines(August, 1992)
- Joint County/City Comprehensive Plan for Colquitt County and the Cities of Berlin, Doerun, Ellenton, Funson, Norman Park and Moultrie 2012
- Comprehensive Plan for Muscogee County (1993)
- Community Assessment for the 2028 Comprehensive Plan, Columbus Consolidated Government (November, 2007)
- Joint County/City Comprehensive Plan for Cook County and the cities of Adel, Cecil, Lenos and Sparks (April 1993)
- Comprehensive Plan for Crisp County (1992)
- Joint County/City Comprehensive Plan for Decatur County and the cities of Attapulgus, Brinson and Climax (1991)
- Comprehensive Plan for City of Bainbridge (1992)
- Community Assessment Greater Dooly Comprehensive Plan (2006)
- Early County Consolidated Comprehensive Plan (2004)

- Grady County and the Cities of Cairo and Whigham Ten Year Comprehensive Plan Update – Community Agenda
- Fanning the Flames: The Community Assessment Portion of the Ten Year Comprehensive Plan, Grady County and the cities of Cairo and Whigham
- Joint Lee County and the Cities of Leesburg and Smithville 2026 Comprehensive Plan – Community Assessment (July, 2006) and Community Agenda (November, 2006)
- Joint County/City Comprehensive Plan for Lowndes County and the cities of Valdosta, Dasher, Hahira, Lake Park, Naylor and Remerton (August, 1991)
- Marion County and the City of Buena Vista Partial Update 2008 – 2010 Comprehensive Plan (Draft, July, 2007)
- Miller County & the City of Colquitt Twenty Year Comprehensive Plan, Draft Community Agenda (May, 2006)
- Joint County/City Comprehensive Plan for Mitchell County and the cities of Sale, Baconton, Pelham and Camilla (1991)
- Joint County/City Comprehensive Plan for Randolph County and the cities of Coleman, Cuthbert and Shellman (May, 1993)
- Schley County City of Ellaville Comprehensive Plan Community Assessment (2006)
- Joint County/City Comprehensive Plan for Seminole County and the cities of Donalsonville and Iron City (October, 1996)
- Joint County/City Comprehensive Plan for Stewart County and the cities of Lumpkin, Omaha and Richland (January, 1991)
- Comprehensive Plan for Sumter County (2004)
- Comprehensive Plan for Terrell County (1994)
- Comprehensive Plan for Thomas County (June, 1993)
- Joint County / City Comprehensive Plan for Tift County and the cities of Tifton, Omega and Ty Ty (October, 1992)
- 2025 Greater Turner Comprehensive Plan for Turner County, Ashburn, Rebecca, Sycamore(September, 2004)
- A Joint County/City Comprehensive Plan for Webster County and the Cities of Preston and Weston, 2004 – 2025
- Worth County and the Cities of Poulan, Sumner, Sylvester, & Warwick Consolidated Comprehensive Plan 2007 - Community Assessment

Appendix B
Economic Benefits of Divided Highways Annotated Bibliography

Economic Benefits of Divided Highways Annotated Bibliography

B-1 Quantitative Economic Benefits of a Divided Highway

Gilson, Preston, PhD and Joseph Aistrup, PhD, Brett Zollinger, PhD. *The Expected Economic Consequences of Upgrading US Hwy 50 to Rural Interstate Standards, Reno County, Kansas to Hamilton County, Kansas*. Docking Institute of Public Affairs Research Report, 2002.

- http://www.fhsu.edu/docking/img/Archives/us50part1.pdf
- http://www.fhsu.edu/docking/img/Archives/us50part2.pdf
- http://www.fhsu.edu/docking/img/Archives/us50part3.pdf
- http://www.fhsu.edu/docking/img/Archives/us50part4.pdf
- http://www.fhsu.edu/docking/img/Archives/us50part5.pdf

This study examines the economic impacts of upgrading US 50 to a four-lane, divided highway. The upgrade project is expected to substantially improve safety, relieve congestion, improve access, and enhance economic development in the eight-county study area; however, this study is focused primarily on the economic development benefits that are likely to occur in the 10-year period following completion of the highway upgrade. The economic activity forecasted includes, population, traffic, and development of convenience stores, restaurants, motels, tourism, and population sensitive sectors.

Missouri Department of Transportation. *Benefits of Highway Improvements on Rural Communities in Missouri*: 2007 Update, November 2007.

- http://168.166.124.22/RDT/reports/Ri00058/ss08002.pdf

This analysis examines Missouri's non-urbanized counties based on the level of four-lane highway miles in the county and the economic development of the county based on seven economic indicators. The selected economic indicators included in this analysis are: county population, annual wages, household income, number of business firms, gross sales tax, real estate valuations, and per capita income.

Leong, Dennis and Liat Lichtman, Franklin Marcos, Kristi Michelson. *Economic and Land Use Impacts Study of State Trunk Highway 29, Phase I – Chippewa Falls to Abbotsford, WI.* Federal Highway Administration, December 2002 (rev. July 2003).

- http://www.fhwa.dot.gov/planning/econdev/wis29.htm

This study identifies the economic benefits of a recently completed four-lane corridor in north-central Wisconsin. The economic benefits examined include the following: community economic impacts (faster travel times, better access to the expressway, improved safety, commercial and industrial development, increases in property values, and improved access to employment opportunities); business impacts (improved travel times and reliability of product delivery, increase in the number of businesses, and new and expanding manufacturers); and comparison of 4-lane Highway 20 to 2-lane Highway 10 (population growth, tourist expenditures, per capita income, number of new businesses, and average daily traffic).

Wasserman, David, PE, Project Manager. *Phase I Report of the US 64-NC 49 Corridor Study: Charlotte and Statesville to Raleigh.* North Carolina Department of Transportation, Transportation Planning Brach, May 2005.

- http://www.ncdot.org/doh/preconstruct/tpb/SHC/studies/us64-nc49/documents/report/

One of the alternatives examined is an enhancement of the E+C Alternative that would provide for a continuous four-lane, divided facility from Charlotte to Asheboro and from Statesville to Asheboro and on to Raleigh. Chapter 7 of the report evaluates and compares the alternatives (including the E+C Enhanced Alternative) based on the following criteria: mobility, growth management benefits, economic benefits (including accessibility and development opportunity), and cost effectiveness benefits.

B-2 Measuring Economic Benefits of Divided Highways

Council, Forrest M. and J. Richard Stewart. "Safety Effects of the Conversion of Rural Two-Lane to Four-Lane Roadways Based on Cross-Sectional Models," *Transportation Research Record*, Volume 1665, pp 35-43, 1999.

- http://dx.doi.org/10.3141/1665-06 (website to order article)

This study estimates the safety benefits of upgrading two-lane rural roads to four-lane undivided and/or four-lane divided roads by developing cross-sectional models to produce crash rates for typical sections of two- and four-lane roadways in four different states. Predicted crash reductions for the upgrade of two- to four-lane divided sections ranged from 40 to 60 percent. The reduction due to the upgrade to a four-lane undivided configuration is much less well defined, ranging from no effect to perhaps a 20 percent reduction.

Tennessee Department of Transportation. *4-Lane vs. 5-Lane: A Comparative Analysis Presentation*, US 127 North Citizen's Resource Team, March 15, 2006.

- http://www.tdot.state.tn.us/us127n/docs/4_5Presentation0315.pdf

  This presentation highlights the benefits of divided highways in addition to comparing the benefits associated with 4-lane and 5-lane divided highways. The benefits highlighted include safety, traffic operations, access and control, aesthetics, cost/economics.

Economic Benefits of Highway Investment in General

Horst, Toni and Anne Moore. "Industrial Diversity, Economic Development, and Highway Investment in Louisiana," *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 1839, 2003, pp 136-141.

- http://dx.doi.org/10.3141/1839-15 (website to order article)

  This article analyzes the linkage between highway investment and economic diversity in Louisiana to evaluate whether highway investment can play a role in stabilizing weak economies. An industrial diversity index is calculated for each parish (county) in Louisiana between1977 and 1997. This diversity index is then correlated with the type of road present in the parish – Interstate, divided highway, and major thoroughfare. Results indicate that highway quality is associated with industrial diversity, even controlling for the size of the economy.

Humphreys, Jeffrey M. *The Economic Benefits of the Governor's Road Improvement Program (GRIP)*. Terry College of Business, The University of Georgia, October 23, 2003.

- http://www.dot.state.ga.us/informationcenter/programs/roadimprovement/GRIP/Documents/Study/grip_study_october_2003.pdf

  This study examines the economic impacts of completed GRIP corridors as well as partially completed corridors to determine the extent to which location on a multi-lane highway enhances economic growth, particularly in rural counties. Economic growth/performance of GRIP and non-GRIP counties was estimated using total personal income, labor force, employment, unemployment, and population. The analysis results indicate that GRIP encourages greater development in rural Georgia.

Indiana Department of Transportation. *The I-69 Evansville to Indianapolis Study, Tier I Environmental Impact Statement, Task 3.2.2 Report: Economic Performance Measures*, August 2000.

- http://deis.i69indyevn.org/pdf_files/Econ_Perf_Meas.pdf

  This study identifies and evaluates alternatives for improvements to the transportation corridor between Evansville and Indianapolis, including upgrades to existing highways and various new alignments in the region. Section 3 of this study identifies potential economic development performance factors, evaluates the potential for using each factor, and recommends a set of factors for use in this project. The economic performance factors identified include: cost savings, accessibility, reliability, economic growth, industry mix, economic diversity, regional economic equity, and social welfare and age distribution.

Weisbrod, Glen and Burton Weisbrod. "Assessing the Economic Impact of Transportation Projects: How to Choose the Appropriate Technique for Your Project" *Transportation Research Board Circular, No. 477*, October 1997.

- http://onlinepubs.trb.org/onlinepubs/circulars/circular477.pdf

  Written for non-economists, this primer help planners, engineers, and decision makers identify the appropriate ways to define questions regarding economic impacts of transportation and the appropriate methods to assess them. It is designed to assist in identifying the types of economic impacts that are relevant for decision making, defining the appropriate project evaluation perspective, and selecting the relevant methods for analysis and presentation of findings. The primer can be used to better understand what is involved in economic impact analysis or, in some cases, as a guide to performing an impact analysis.

Weisbrod, Glen and Michael Grovak. "Comparing Approaches for Valuing Economic Development Benefits of Transportation Projects," *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 1649, 1998, pp 86-94.

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  This article examines different types of economic impact analysis using data from a highway study in Kentucky to explore: economic benefit definitions, values of economic benefits, and interpretation and use of economic benefit results in decision making.