

2045 TRANSPORTATION PLAN SOCIOECONOMIC DATA STUDY

Base and Future Year Data Technical Memorandum

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Prepared by Transport Studio, LLC



Southern Georgia Regional Commission

Valdosta-Lowndes M P O

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2045 TRANSPORTATION PLAN SOCIOECONOMIC DATA STUDY

The study area includes the four county transportation planning area for the Valdosta-Lowndes Metropolitan Planning Organization (VLMPO) shown below. Transport Studio developed population and employment data required for the MPO’s travel demand model for the 2015 base year through the 2045 planning horizon in 5-year increments. This includes population and households, median income, school enrollment, and employment by category.

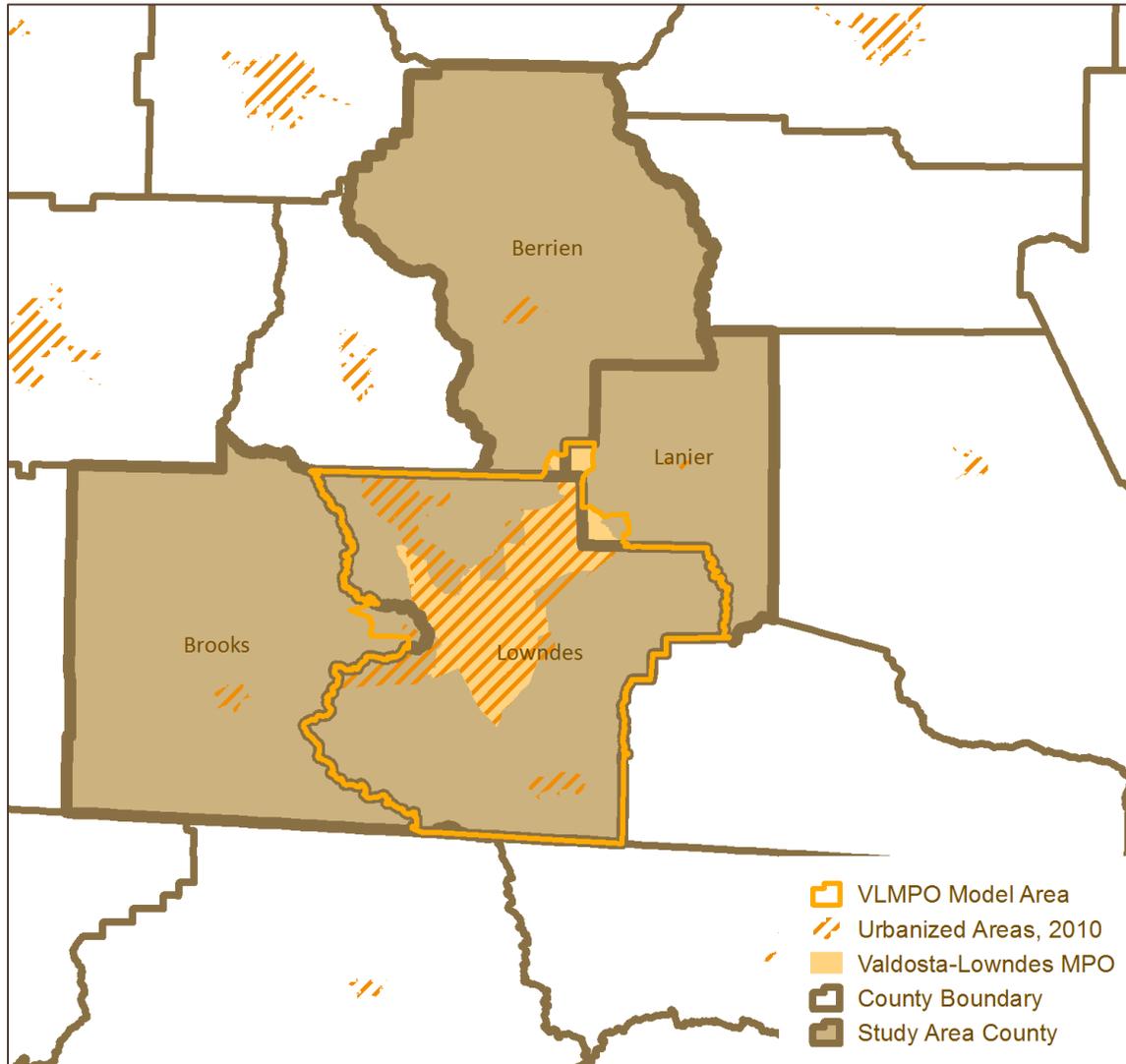


Figure 1 Study Area

Socioeconomic data and future projections are the basis for policy decisions within the Valdosta-Lowndes study area. Quality data developed in a transparent process is therefore critical. Transport Studio’s socioeconomic projection method takes advantage of detailed land use data from a range of sources and incorporates specific growth areas developed by SGRC staff and stakeholders. We use Geographic Information Systems (GIS) to estimate the land area available for growth between the base year and the horizon years, and apply population and employment change to the requested Census boundaries and traffic analysis zones. Our method complies

with applicable Georgia Department of Transportation (GDOT) and Department of Community Affairs (DCA) guidance.

Transport Studio developed a separate *Environmental Justice Assessment for Lowndes County, Georgia* delivered in August 2018. The assessment identifies priority populations within Lowndes County to promote compliance with Environmental Justice requirements during the VLMPO transportation planning process. This assessment includes mapping and analysis of 2015 five-year American Community Survey data and Longitudinal Employer-Household Dynamics from the US Census Bureau.

LONG RANGE TRANSPORTATION PLAN DATA

The data developed for the transportation planning process represent population and employment for application in the VLMPO travel demand model; the data comply with the GDOT *Socioeconomic Data Development Guides*. GDOT planning staff approved interim project deliverables.

The travel demand model uses four employment categories: (1) service; (2) retail; (3) agriculture, mining, and construction (AMC); and (4) manufacturing, transportation, communication, utilities, and warehousing (MTCUW). The table below shows what types of labor are assigned to each model employment category. Service is a broad category, incorporating most professional employment.

GDOT Model Category	Department of Labor Category
	Goods-Producing
Agriculture, mining, and construction	Agriculture, Forestry, Fishing & Hunting
Agriculture, mining, and construction	Mining
Agriculture, mining, and construction	Construction
MTCUW	Manufacturing
	Service-Providing
MTCUW	Utilities
MTCUW	Wholesale Trade
Retail	Retail Trade
MTCUW	Transportation and Warehousing
Service	Information
Service	Finance and Insurance
Service	Real Estate and Rental and Leasing
Service	Professional, Scientific & Technical Svc
Service	Management of Companies and Enterprises
Service	Admin., Support, Waste Mgmt, Remediation
Service	Education Services
Service	Health Care and Social Assistance
Service	Arts, Entertainment, and Recreation
Retail	Accommodation and Food Services

Service	Other Services (except Public Admin.)
Omit	Unclassified - industry not assigned
	Total – Government
Service	Federal Government
Service	State Government
Service	Local Government

The travel demand model estimates trips made on the region’s highway network based on the population and employment data inputs. The resulting projected traffic volume helps the region understand the need for future transportation investments.

LOWNDES COUNTY PLANNING DATA

Data for the Lowndes County comprehensive plan was obtained from the US Census Bureau, Georgia Office of Planning and Budget, Georgia Department of Transportation, Chamber of Commerce, school boards, private schools, higher education institutions, and Moody Air Force Base. Data was summarized at the Census tract, block group, and county-wide level as available.

PAST STUDIES

The Transport Studio team reviewed past socioeconomic data studies’ population projections for the 2015 base year. The figure below shows the 2015 forecasts as well as the 2015 American Community Survey estimate. The most recent LRTP socioeconomic data study projected 2015 population within 1.3% of the Census estimate. The Office of Planning and Budget (OPB) projection developed in 2013 was within 0.7% of the Census estimate.

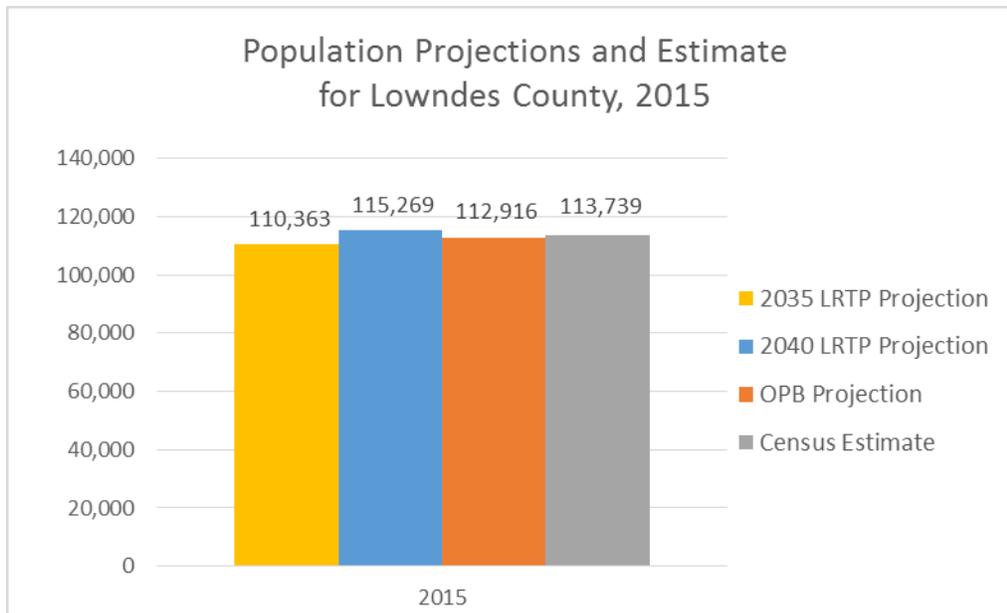


Figure 2 Past Projections for 2015

BASE YEAR DATA

The study team developed base year population and employment data for 2015. We summarized data at the Census block group, Census tract, and traffic analysis zone (TAZ) level. Because TAZ-level data will be used for travel demand modeling, we adjusted estimates per GDOT guidance and for consistency with modeling procedures. Data was obtained from a range of sources including the following:

- US Census Bureau 2010 Decennial Census data and 2015 American Community Survey five-year estimates
- Bureau of Economic Analysis employment data
- Department of Labor jobs data, as reported in the Local Employer-Household Dynamics program
- SGRC
- Valdosta-Lowndes County Chamber of Commerce
- Valdosta State University
- Moody Air Force Base
- Georgia Department of Education
- Various websites that compile data on private schools as well as individual private school websites

The table below shows a summary of base year control totals. TDM refers to the VLMPO travel demand model.

2015 Base Year Data	Lowndes County	Berrien County	Brooks County	Lanier County	Total
Census Population	113,203	19,019	15,637	10,403	158,262
Census Households	39,328	6,958	6,577	3,712	56,575
County-wide Jobs, BEA	56,310	4,179	3,709	1,594	65,792
Traveling Population in TDM Region	112,963	49	2,205	1,658	116,875
Households in TDM Region	43,150	26	1,112	634	44,922
Jobs in TDM Region	56,678	47	177	28	56,930
TDM Region-wide Jobs-Housing Ratio					1.27

The 2015 base year travel demand model socioeconomic data includes population, households, and median income by zone. (A zone refers to a traffic analysis zone, or TAZ, as delineated by the VLMPO for transportation planning.) The study team applied a growth rate to 2010 zone level data to obtain population and household estimates for 2015. The growth rate is the change in zonal block group population or households between the Decennial Census and the 2015 American Community Survey. Because the travel demand model generates trips based on population, non-traveling population was removed from the control totals and specific TAZs where appropriate. Examples of non-traveling populations include correctional facility inmates and nursing home residents. We also verified populations that are typically under-reported in Census figures, including military troops and college/university students. For consistency with model equations, household totals were adjusted to include dormitory group quarters that the Census does not report as occupied housing units. The study team assigned the median income reported in the 2015 American Community Survey at the block group level to the traffic analysis zones in each group; in cases where block group income was not available, tract level income was used. We also calculated the base year jobs-housing ratio for the model area. The jobs-housing ratio in a region is

commonly used to express the region’s jobs-housing balance. A balance is achieved when a jurisdiction has a roughly equal number of jobs and resident labor force. A ratio of about 1.5 is typically considered balanced, assuming that about 1.5 workers live in each household.¹ The 1.27 jobs-housing ratio in the Valdosta-Lowndes MPO region is consistent with the region’s average workers per household of 1.25 to 1.3 (per the 2010 Census).

For the portion of each county in the travel demand model boundary, the study team reviewed major employer job and location data. A sampling of major employers in the region includes Moody Air Force Base, Dillard’s Distribution Center, South Georgia Medical Center, South Georgia Pecan Company, Sam’s Club, and Valdosta State University. Major employers were verified in the job counts for each zone and Census boundary. We adjusted job counts by industry classification where applicable. After adjusting, we estimate the following control totals by employment category:

2015 TDM Base Year Data	Lowndes County	Berrien County	Brooks County	Lanier County	Total	Percent of Total
MTCUW	8,676	0	21	0	8,697	15%
Service	35,472	15	110	28	35,625	63%
Retail	8,054	0	24	0	8,078	14%
AMC	4,476	32	22	0	4,530	8%
Jobs in TDM Region	56,678	47	177	28	56,930	100%

Note that job counts within each County and category may not exactly match the targets above due to rounding or due to corrections applied to specific employers.

The sections below describe population and employment data for each county in the study area.

LOWNDES COUNTY

- Base year Census population is 113,203 in Lowndes County for 2015. Transport Studio allocated 112,963 persons to Traffic Analysis Zones (TAZs) in the county; 2,361 people live in group quarters and do not travel. We added 279 people to Moody Air Force Base to match the resident population reported by MAFB staff (for a total 2015 on-base population of 990). Valdosta State University population was verified and distributed to dormitory locations as appropriate.
- There were 39,328 Lowndes County households reported in the Census. We added households for group quarters such as dormitories to the socioeconomic data resulting in 43,150 households. (This avoids having a TAZ with nonzero population and zero households.)
- Base year socioeconomic data employment should match the 2015 Bureau of Economic Analysis (BEA) county-wide employment totals for Wage and Salary plus Farm Proprietors Employment of 56,649 for Lowndes County. This control total was submitted to GDOT and approved. We used Department of Labor data retrieved through the Census LEHD as well as Chamber of Commerce data to allocate the employment to zones. Major employers were verified and adjusted as appropriate.
- Student enrollment in Lowndes County includes public and private schools, colleges, and universities. Base year data was collected from the South Georgia Regional Commission, the Georgia Board of Education, Valdosta State University, private school websites, and various companies that compile data

¹ Per Ewing (1996), a balanced ratio is 1.3 to 1.7 jobs per household; Per Cervero (1991), a balanced ratio is 1.4 to 1.6 jobs per household.

on private schools. Student enrollment in 2015 is estimated at 20,479 primary and secondary students and 16,370 post-secondary students.

LOWNDES COUNTY COMPREHENSIVE PLAN DATA

The additional data collected for Lowndes County comprehensive planning include housing, population, labor force, race, age, and educational attainment variables. Census housing data such as housing units, household income, owner and renter –occupied units, vacancy rates, the number of units per dwelling, and age of housing units were collected at the county and tract level. Educational attainment and labor force participation were also collected at the tract and county levels. Census data for population, racial composition, and age were collected at the block group level as well as at the tract and county level.

The study team followed Census Bureau guidelines to estimate daytime population; daytime population is approximately total resident population plus workers employed in the area minus workers living in the area.

The file data15_1.xlsx contains a worksheet titled “readme” that lists all base year variables and their metadata, including field names and Census file sources. Many of these variables were also projected into the future, as discussed in the Future Year Projections section below.

BERRIEN COUNTY

- Base year Census population is 19,019 in 6,958 households for 2015. Within the study area, there were 49 people in 26 households. There are no group quarters in the travel demand model study area.
- Base year county-wide wage and salary employment is 4,179. Within the study area, employment is 47 jobs. We used LEHD data, adjusted as appropriate, to determine jobs within the study area. The base year is consistent with the prior LRTP 2010 base year data of one job in the study area.

BROOKS COUNTY

- Base year Census population is 15,637 in 6,577 households for 2015. Within the study area, there were 2,205 people in 1,112 households. There are no group quarters in the travel demand model study area.
- Base year county-wide wage and salary employment is 3,709. Within the study area, employment is 177 jobs. We used Department of Labor employer data, adjusted as appropriate to determine jobs within the study area. The base year is consistent with the previous LRTP dataset.

LANIER COUNTY

- Base year Census population is 10,403 in 3,712 households for 2015. Within the study area, there were 1,658 people in 634 households. There are no group quarters in the travel demand model study area.
- Base year county-wide wage and salary employment is 1,594. Within the study area, employment is 28 jobs. We used Department of Labor employer data, adjusted as appropriate to determine jobs within the study area. It is consistent with the prior LRTP dataset.

The maps below show the population and employment distribution by zone in the travel demand model boundary. Figure 3 and Figure 5 show statistics totaled by zone, while Figure 4 and Figure 6 are gross density by zone.

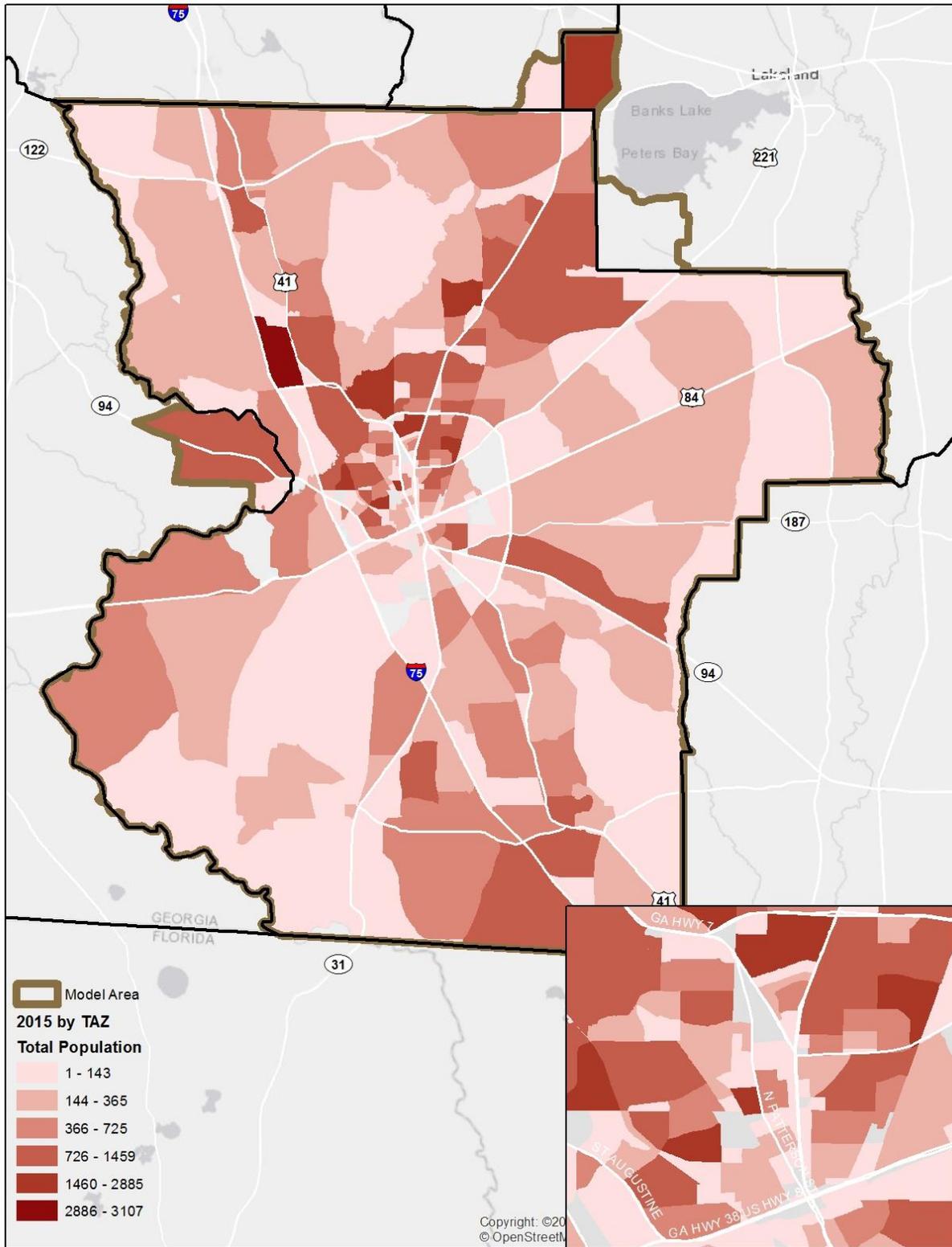


Figure 3 Base Year Population by Zone

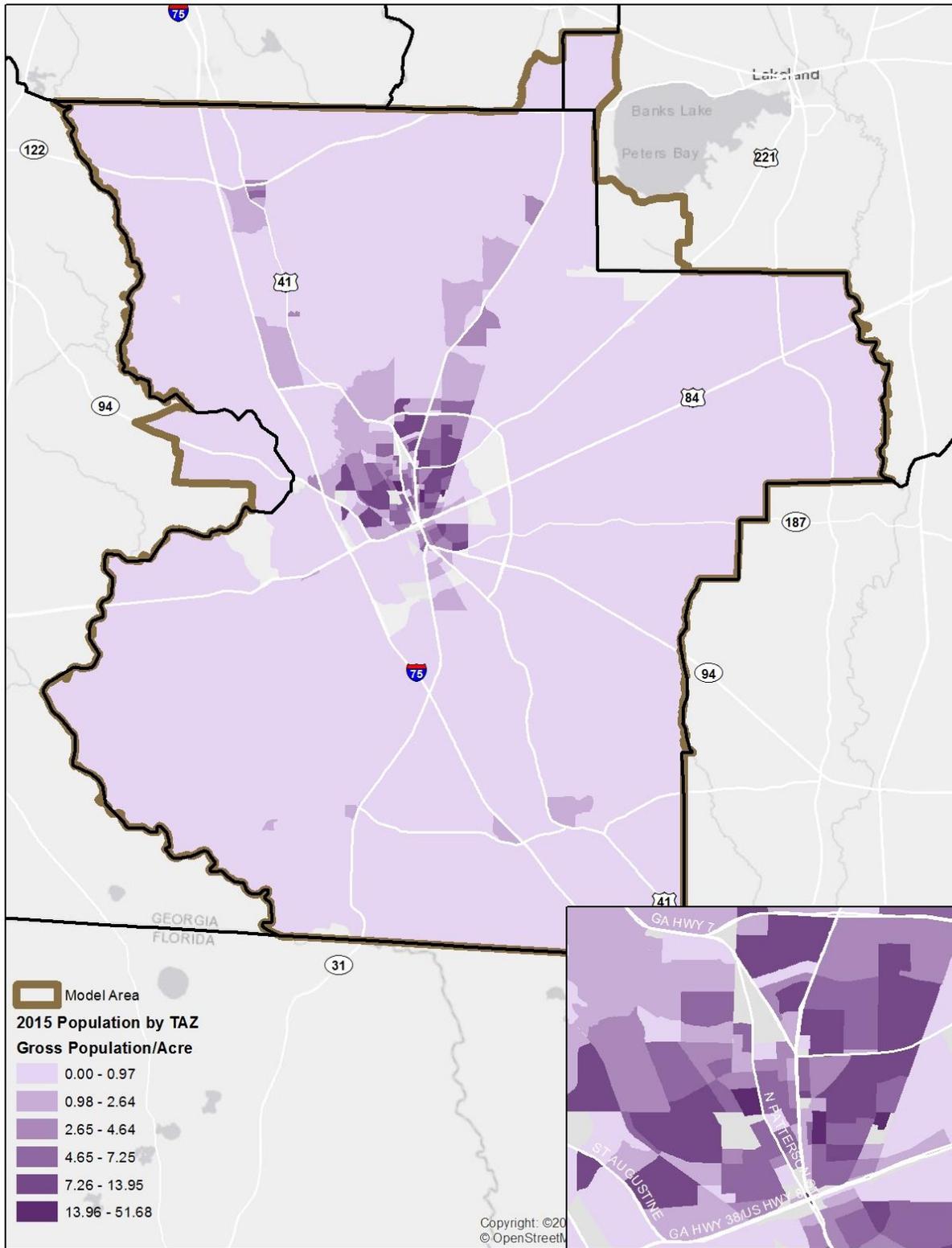


Figure 4 Base Year Gross Population Density

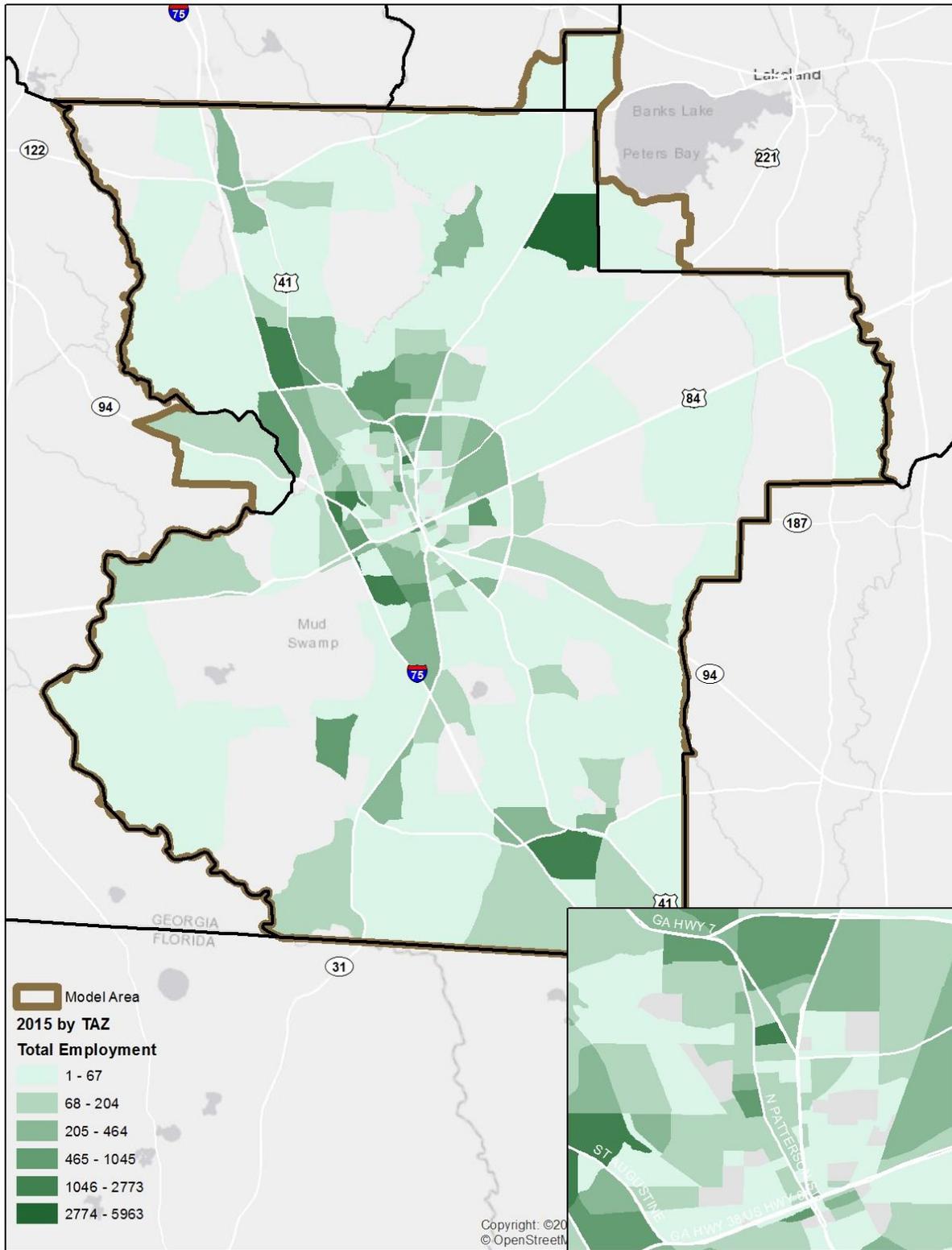


Figure 5 Base Year Employment by Zone

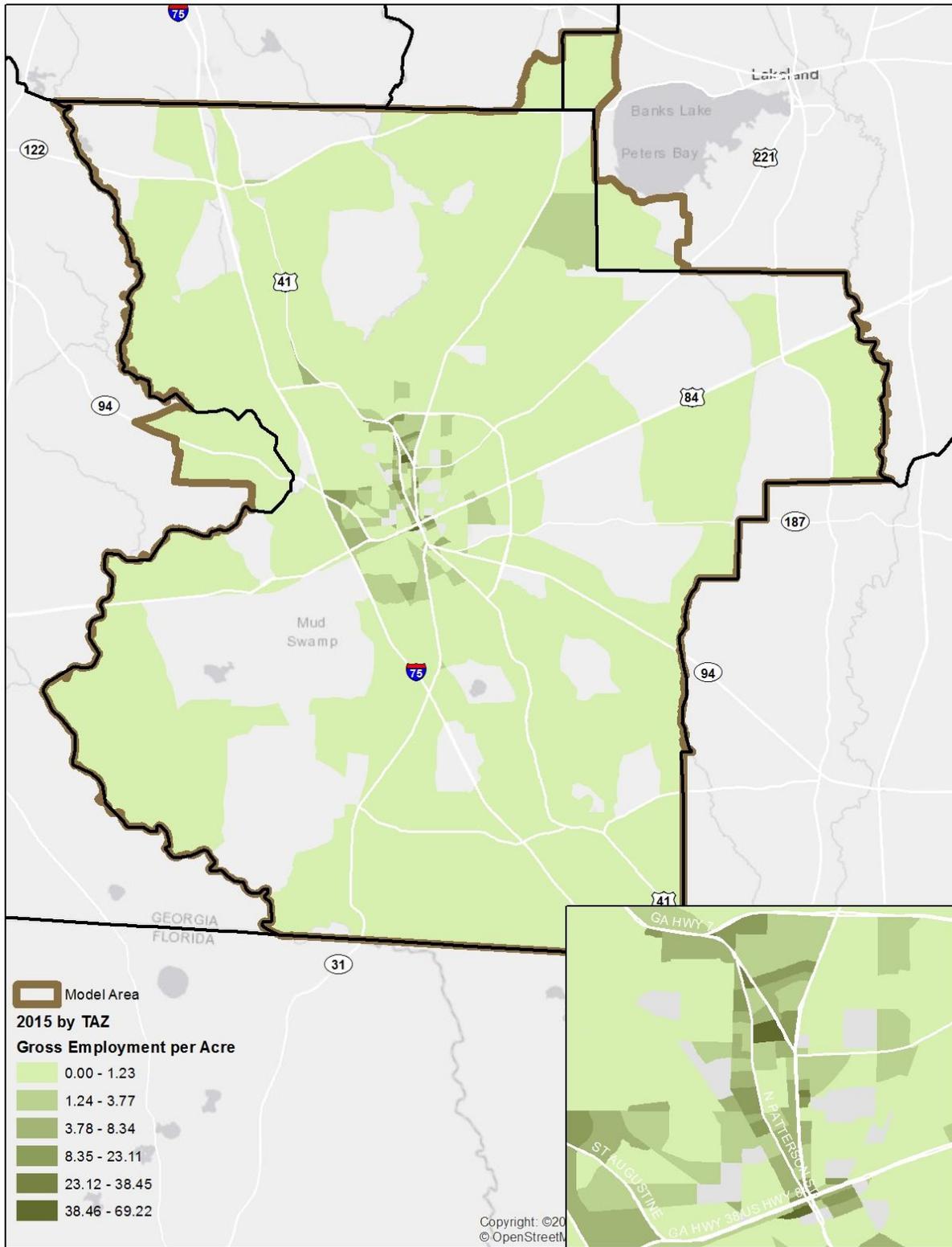


Figure 6 Base Year Gross Employment Density (Jobs per Gross Acre)

FUTURE YEAR PROJECTIONS

The Valdosta-Lowndes Metropolitan Planning Organization long range transportation plan and Lowndes County Comprehensive Plan share a 2045 horizon year. Transport Studio projected socioeconomic population and employment variables out to 2045 based on historic growth and assumptions about future development patterns. The future population and jobs were then assigned to developable areas as described below.

GROWTH TARGETS

County-wide population targets were developed for each of the four counties in the study area. Small area projections were developed for the portions of Brooks, Berrien, and Lanier County in the model boundary. The study team collected population projections from various sources, including the Department of Transportation REMI datasets and Office of Planning and Budget. Transport Studio developed linear trend projections based on historic population growth from 1980 to 2015 in order to take advantage of the latest Census data available.

Lowndes County population projections from various sources are summarized in the table below. The Office of Planning and Budget (OPB) projections and linear trend are within 3% for year 2045. The REMI TranSight database received from GDOT projects population 12.5% lower than the linear trend. Because the travel demand model will generally generate higher traffic volumes from higher population and employment projections, using the greatest reasonable population projection is a conservation planning strategy that will ensure future needs are identified for a range of growth trends. Therefore, we used the linear trend based on Census population from 1980 to 2015 to project control totals for this study. These control totals are shown on the bottom line of the table below for comparison purposes.

Lowndes County Population Projections				
	2030	2035	2040 ^{1, 2}	2045
2035 LRTP (VSU CBER)	128,589	134,697	140,680 ¹	--
2040 LRTP			149,288	
GDOT REMI TranSight Database			134,756	135,525
Office of Planning and Budget (OPB) County Projections by Age	138,246	145,139	152,066	155,102
DNR (Carl Vinson Institute for OPB) <i>Published 2010</i>	156,650	--	186,781 ²	--
Linear trend based on 1980 to 2015 growth (used for population projections in this study)	134,127	141,046	147,966	154,885

1. The VSU CBER projection for 2040 was developed by applying the linear equation used for the 2035 LRTP to year 2040.
2. The 2040 DNR data are based on the 2010-2030 projections used for State Water Planning purposes and extrapolated to 2040 by OPB.

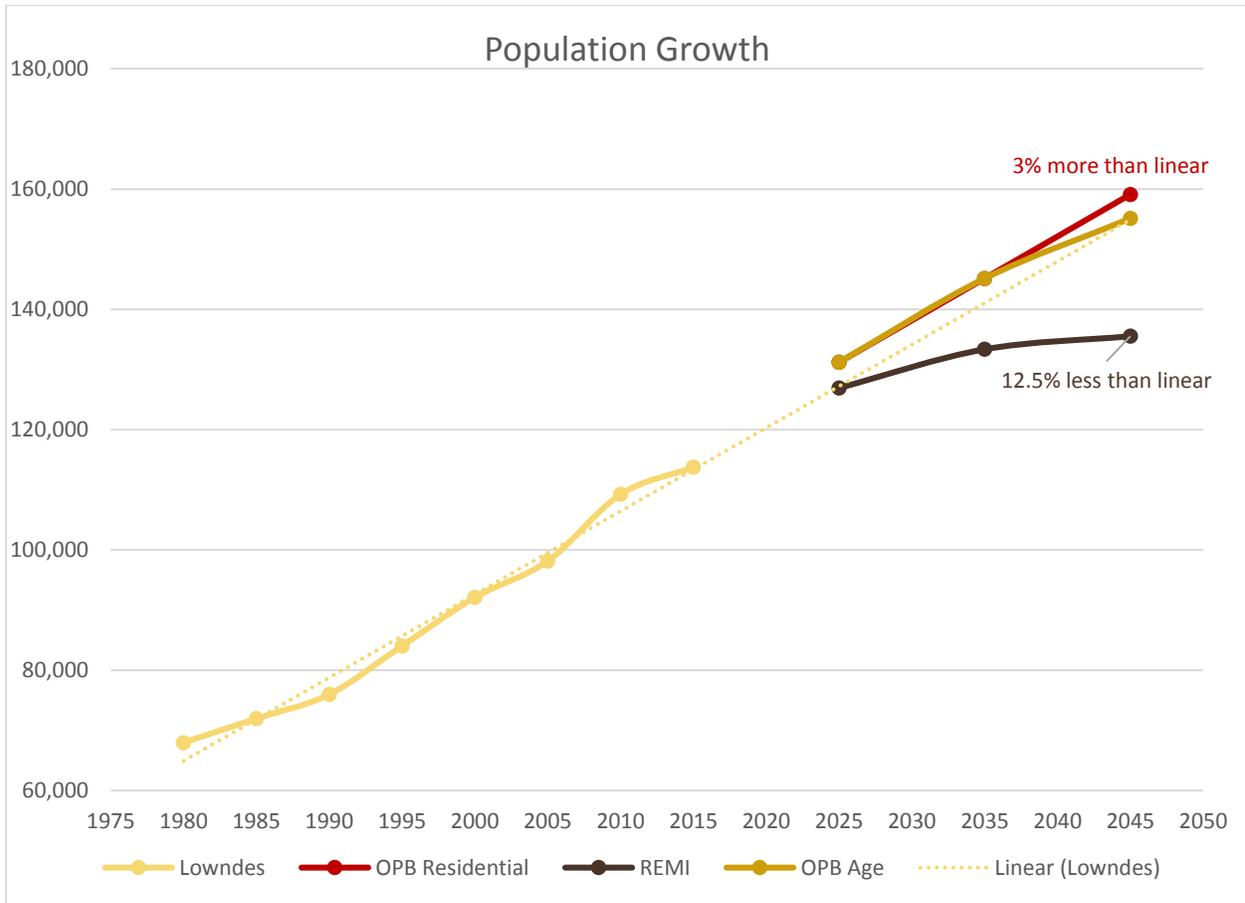


Figure 7 Lowndes County Population Growth

Total household projections were established by multiplying population targets by average population per household estimated from 2015 Census data. We assumed that the population per household in the study area remains constant over time at 2.6 people per household on average. Once household targets were set for the future, the team developed employment targets based on the jobs-housing ratio in the base year and the industry mix in REMI’s TranSight projections for the Valdosta area. Because neither stakeholders nor staff reported a known future development that is reasonably expected to impact median income, the study team also assumed that median income in each traffic analysis zone will remain stable across the study area. Note that travel demand model median income input should not be inflated to future year dollar values because the model equations are validated to base year dollars. We therefore did not adjust for inflation in future years.

Targets for all variables are shown in the table below in ten-year increments.

Year	County	County-wide Population	Travel Demand Model (TDM) Area Variables						
			TDM Population	TDM Employment	MTCUW Employment	Service Employment	Retail Employment	AMC Employment	TDM Households
2045	Lowndes	154,885	152,487	74,644	8,675	48,657	12,383	4,929	58,340
2045	Berrien	16,271	56	47	0	15	0	32	30
2045	Brooks	12,927	2,514	185	21	114	28	22	1,231
2045	Lanier	15,032	2,438	28	0	28	0	0	934
2045	Total	199,115	157,495	74,904	8,696	48,814	12,411	4,983	60,535
2035	Lowndes	145,139	136,240	68,317	8,669	44,083	10,668	4,894	52,091
2035	Berrien	17,748	49	47	0	15	0	32	26
2035	Brooks	14,031	2,439	185	21	114	28	22	1,230
2035	Lanier	13,573	2,442	28	0	28	0	0	934
2035	Total	190,491	141,170	68,577	8,690	44,240	10,696	4,948	54,281
2025	Lowndes	131,190	123,730	65,285	8,631	41,896	10,117	4,641	47,288
2025	Berrien	18,683	49	47	0	15	0	32	26
2025	Brooks	14,985	2,205	177	21	110	24	22	1,112
2025	Lanier	12,142	2,442	28	0	28	0	0	934
2025	Total	177,000	128,426	65,537	8,652	42,049	10,141	4,695	49,360

The population and employment distribution achieved the targets for each category within one percent for the 2045 horizon year and within four percent for the interim years. The distribution, or allocation, of population and employment is described in the section that follows. The appendix contains targets for interim years in five-year increments.

DISTRIBUTION OF POPULATION AND EMPLOYMENT

In order to allocate future growth, Transport Studio developed a GIS-based process using local input. We’ve used a similar process for MPOs in Georgia and Florida. The process is outlined in the steps below:

1. Identify land that is not suitable for development. This includes (but is not limited to) conservation lands, open water, parks, greenspace, cemeteries, and Department of Defense lands.
2. Identify developed land (including any areas likely to redevelop) based on existing land use data. Account for land that has developed since the 2015 base year, and account for the resulting change in housing and jobs. SGRC staff identified one area for redevelopment.
 - a. Create a layer of stable, developed land area
 - b. Create a layer of redevelopable land
3. Identify regional Growth Areas, zoning, water/sewer access, and development restrictions on land suitable for future development. Assign parameters for density and intensity of development in Growth Areas. Assess zoning in each jurisdiction and create a generalized system of future land use based on zoning for those areas outside of identified Growth Areas.

- Distribute growth to developable land according to Growth Areas. Using the calculated developable area in each category, assign population and employment to each zone by category. Verify county-wide totals and study area totals for each horizon year. Adjust assumptions as needed to match county-wide and study area totals.

The process is outlined in the diagram below.

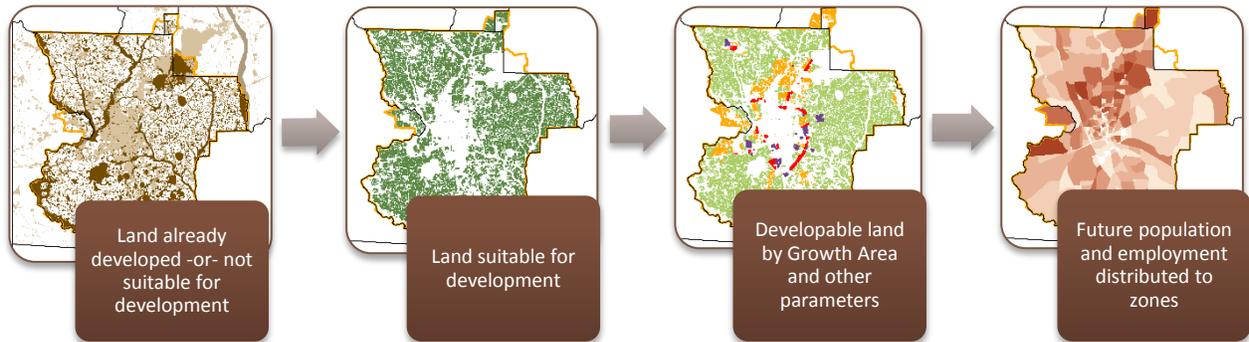


Figure 8 Growth Allocation Process

SGRC and local staff identified future Growth Areas targeted for development with a general land use, such as residential, industrial or commercial. These growth areas were also categorized by timeframe of likely development and capacity for new development. The following table shows the range of growth areas identified.

SGRC Growth Area Categories		
Type	Timeframe	Capacity
Residential	Short term	Low
Industrial	Mid Term	Medium
Institutional	Mid-Long Term	High
Commercial	Long Term	
Residential/Commercial		

Base on the categories above, Transport Studio developed parameters for each growth area’s employment industries, development year, and employment intensity or household density, as appropriate. Capacity translated to household density in residential areas and jobs per acre of developable land in other areas. Growth determined by these parameters was checked against population and employment targets for each county; we adjusted the parameters iteratively until targets were met within reason.

Characteristics that affect the population and employment assigned to each developable area include the following, in order of importance:

- School locations, where additional students and employees were assigned
- Moody Air Force Base, where population and employment is based on input from staff
- Growth Area type and capacity
- Access to water or sewer infrastructure (defined as within 400 feet of existing service)
- Groundwater recharge areas (where density is reduced per current land development regulations)
- Zoning, for those areas outside of Growth Areas that have existing access to water or sewer service

The map below shows the Growth Areas by type.

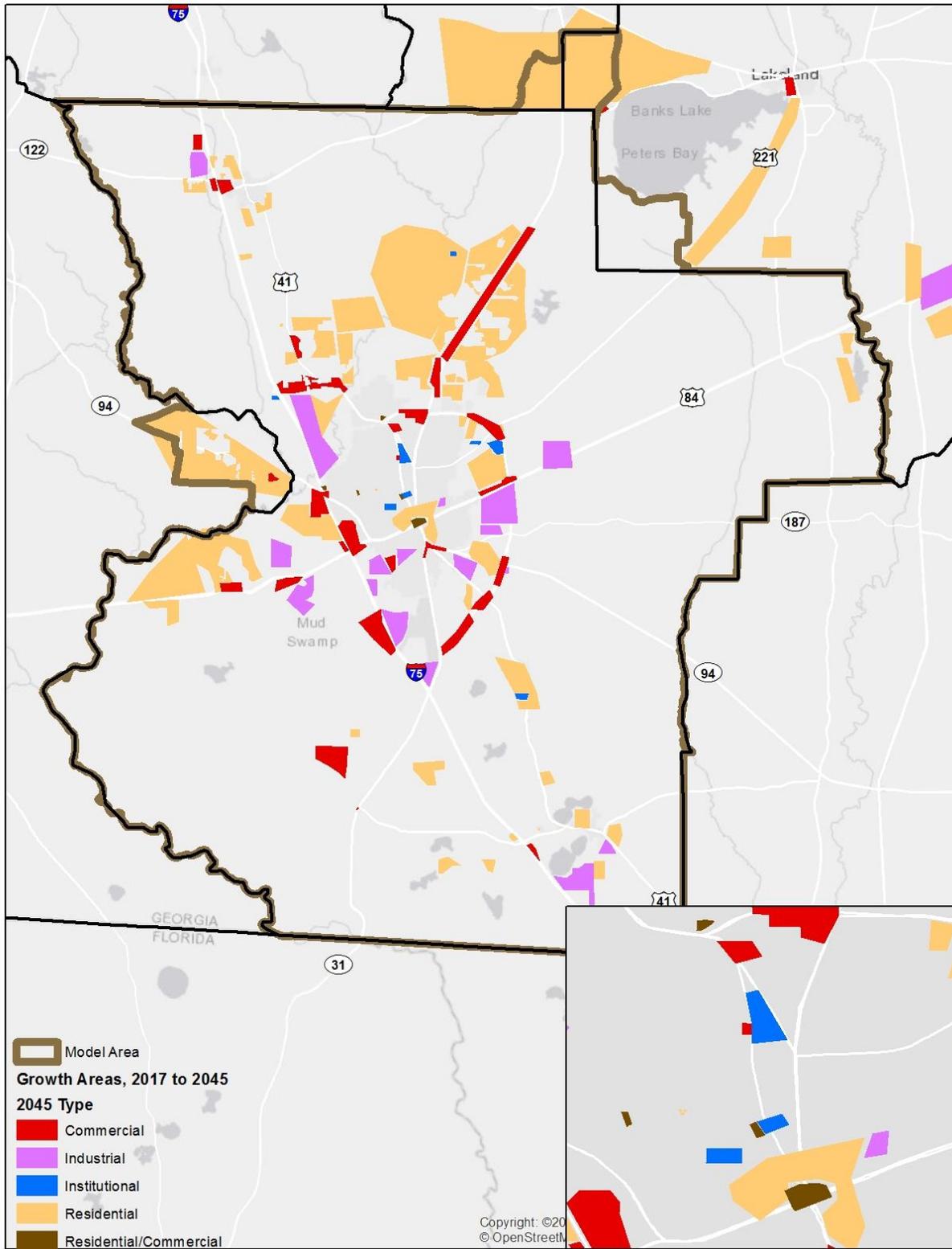


Figure 9 Growth Areas Identified by SGRC

The diagram below shows how land available for development is classified and assigned future development in an example traffic analysis zone (TAZ).

- A. The TAZ contains portions of three types of Growth Areas, industrial, commercial, and residential.
- B. Land that is not available for development is removed. The green areas are both suitable for development, and are not already developed.
- C. The areas shaded darker are in a Growth Area and are available for development. These areas are assigned households, based on the calculated residential acres, and jobs based on the commercial and industrial acreage. Green areas are available for development but are not within a Growth Area.
- D. Finally, the land that is available for development but is outside of a Growth Area is assigned households and jobs based on the underlying zoning, only if the land has access to water or sewer service. The crosshatch shows areas with access to water or sewer service in 2015. The areas that are green and crosshatched *may* be assigned jobs or households, depending upon the underlying zoning.

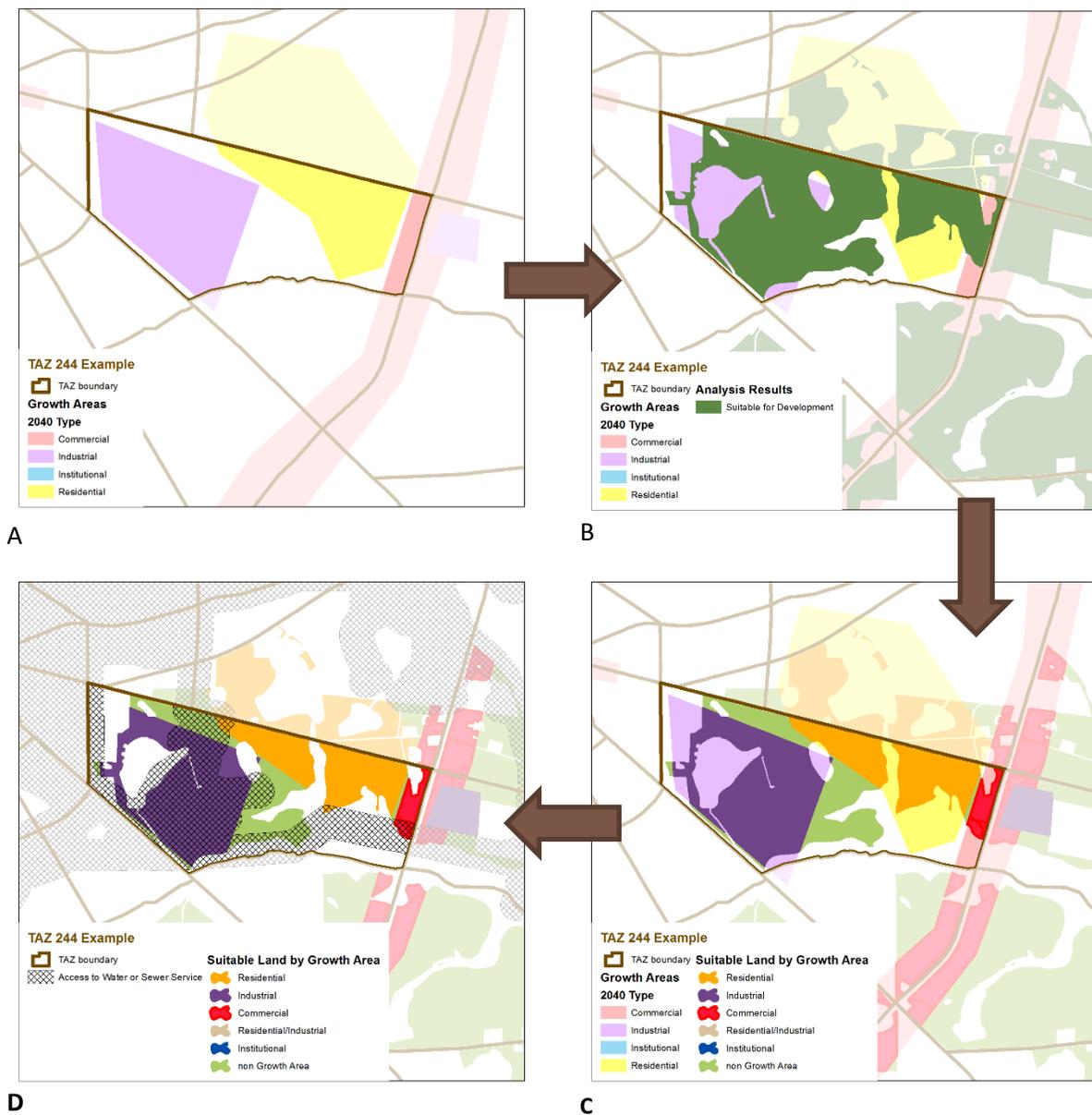


Figure 10 Future Development Example

The appendix contains similar maps representing the process for the entire study area.

Note that consistent with the 2040 LRTP projections, a significant amount of land was identified as an industrial Growth Area. The target for manufacturing; transportation, communications, and utilities; and warehousing will be met well before these Growth Areas are built out. To limit the employment allocated, we assumed that only those long term industrial Growth Areas with current access to water or sewer infrastructure would develop by 2045. The Growth Areas shown as industrial and long range in the map below were not assigned jobs by the 2045 horizon year.

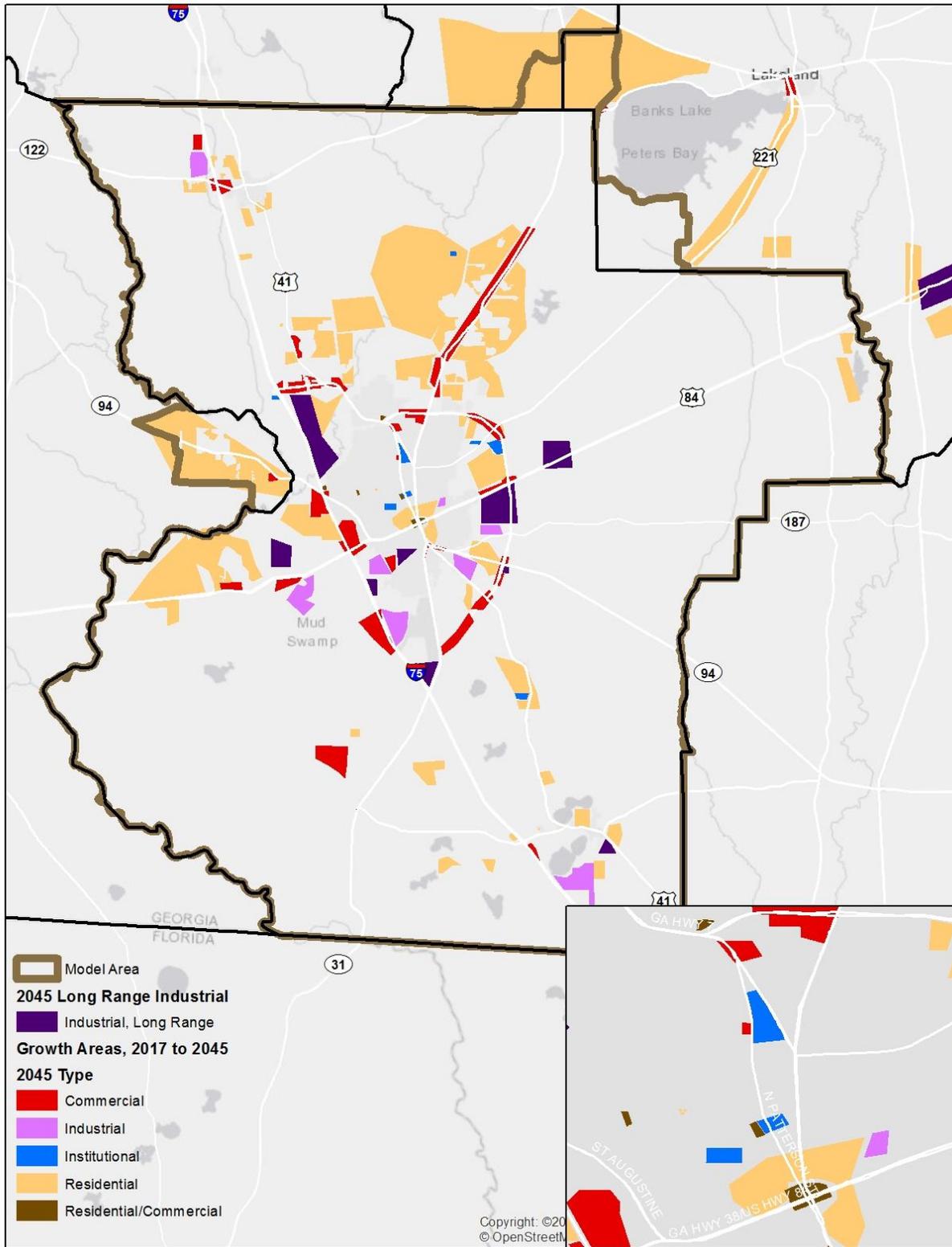


Figure 11 Long Term Industrial Growth Areas

While staff identified few areas with significant potential for redevelopment, the Tax Assessor's database does show areas with potential for housing reinvestment to promote community development. These areas are shown below by observed condition as reported in the WinGAP database for Lowndes County. Parcels with average to poor condition are located within central Valdosta as well as scattered in the southern part of the county.

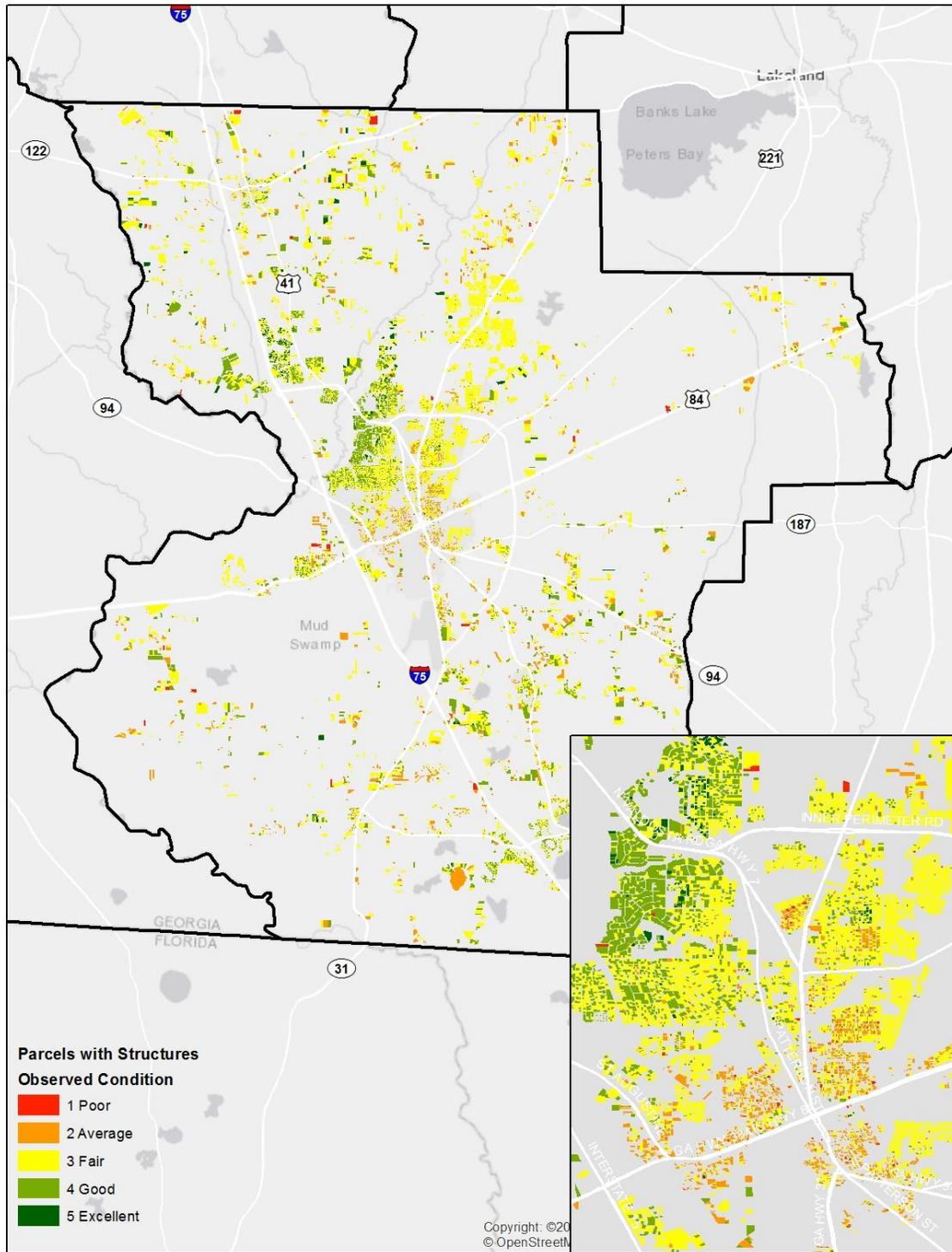


Figure 12 Residential Parcels by Observed Condition

Source: Lowndes County Tax Assessor

ALLOCATION OF STUDENTS

Transport Studio assumed that enrollment in primary and secondary schools will increase proportionately to population growth. We assumed that existing schools, two new elementary schools and the new Pine Grove High School will accommodate additional students. Valdosta High School is planned to relocate between 2015 and 2020. We assumed that City of Valdosta and Lowndes County schools will absorb 1% increased enrollment per year based on capacity estimates submitted by both school systems. We assigned a 1% annual increase to private schools. The figure to the right shows change in school enrollment between the 2015 base year and 2045.

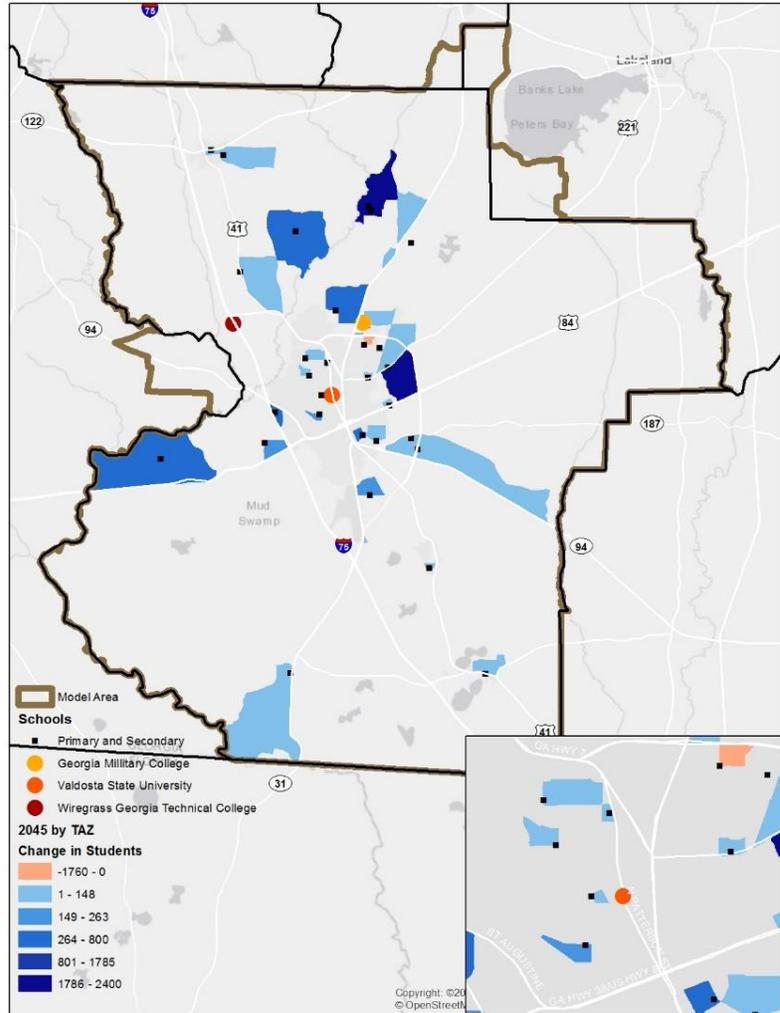


Figure 13 Change in Student Enrollment from 2015 to 2045

Post-secondary institutions grow at rates based on projected statewide growth of college age students. We assumed that Valdosta State University and Georgia Military College enrollment will increase 16% between 2015 and 2045. We assumed that Wiregrass Technical College enrollment will grow at 2.5% per year based on historic enrollment increases. Service employment at each school was increased proportionately with increase in student enrollment.

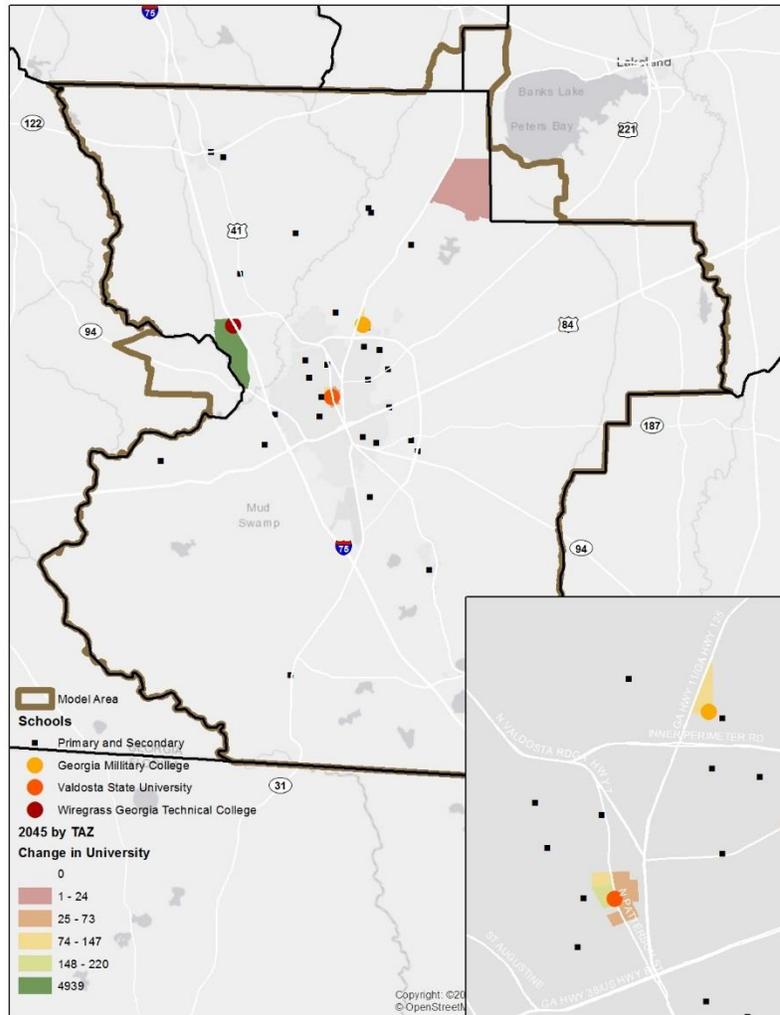


Figure 14 Change in University Enrollment from 2015 to 2045

POPULATION AND EMPLOYMENT DISTRIBUTION RESULTS

The map below shows the resulting change in employment from 2015 to the 2045 planning horizon by traffic analysis zone. The only reduction in employment occurs on Moody Air Force Base, per information provided by the base staff. The largest increases are in designated Growth Areas. Significant growth occurs in commercial and industrial areas along major corridors in the region.

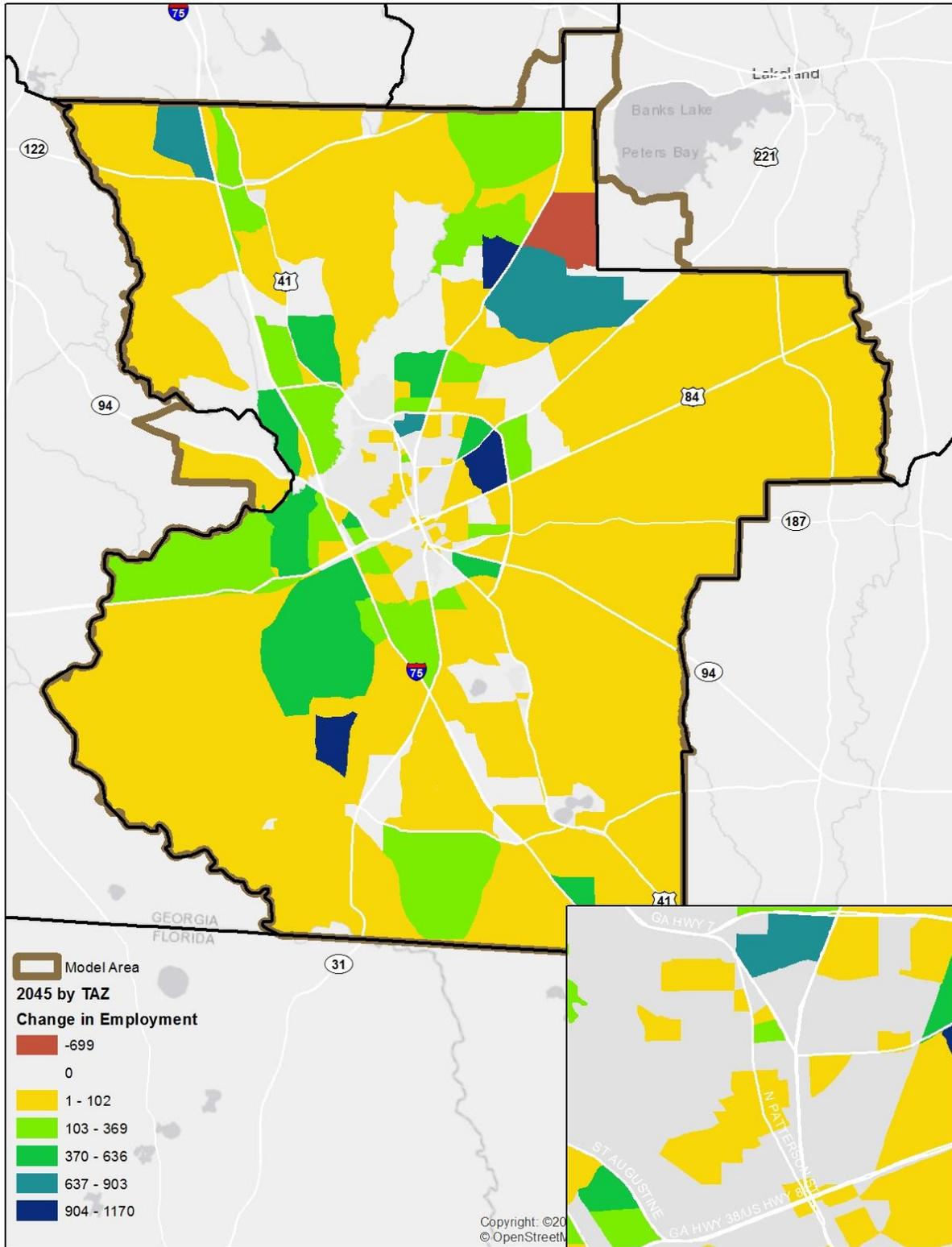


Figure 15 Employment Growth from 2015 to 2045 by Zone

The map below shows the change in population between 2015 and 2045. The Growth Areas along SR 125/Bemiss Rd to the north of Valdosta, and along US 84 to the west of Valdosta contain a significant amount of residential development. Most of the population growth occurs outside of the city of Valdosta.

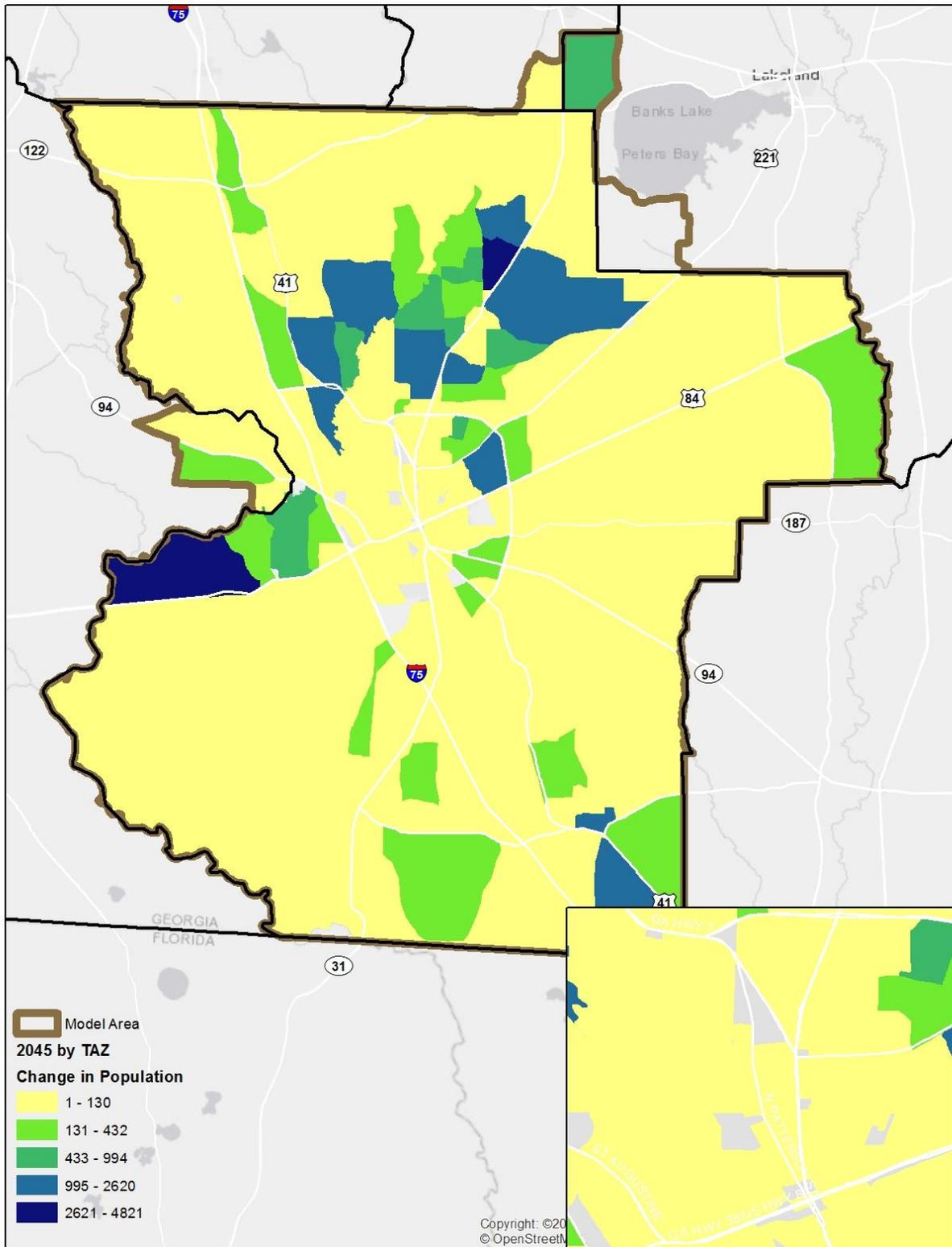


Figure 16 Population Growth from 2015 to 2045

The maps below show 2045 population, population density, employment, and employment density by TAZ. Figure 18 and Figure 20 are helpful in visualizing the population and employment projections because they show gross density by zone. While Valdosta remains the population center in the region, the projected development along major corridors results in increased population densities elsewhere, particularly along SR 125, US 84, and US 41.

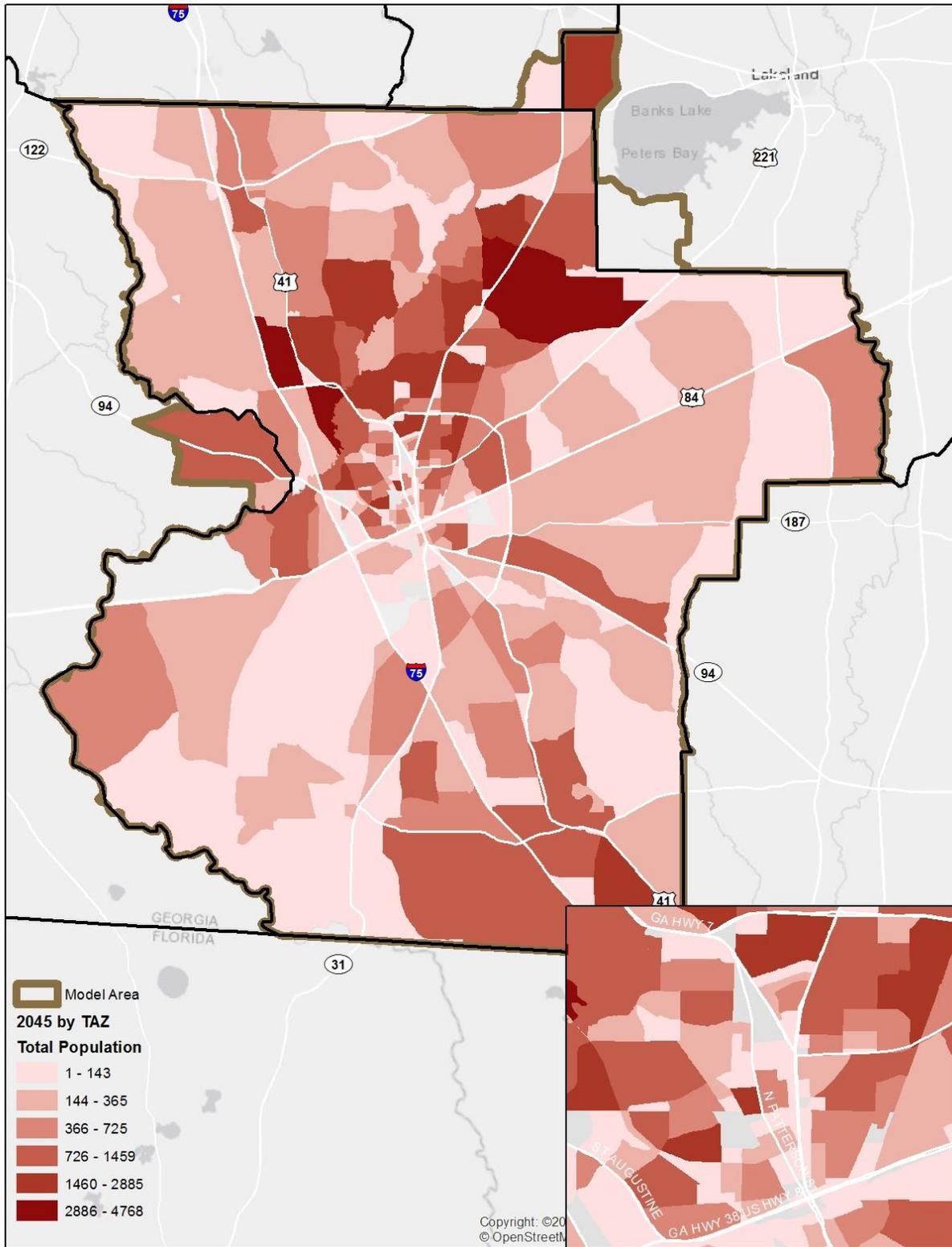


Figure 17 2045 Population Projections by Zone

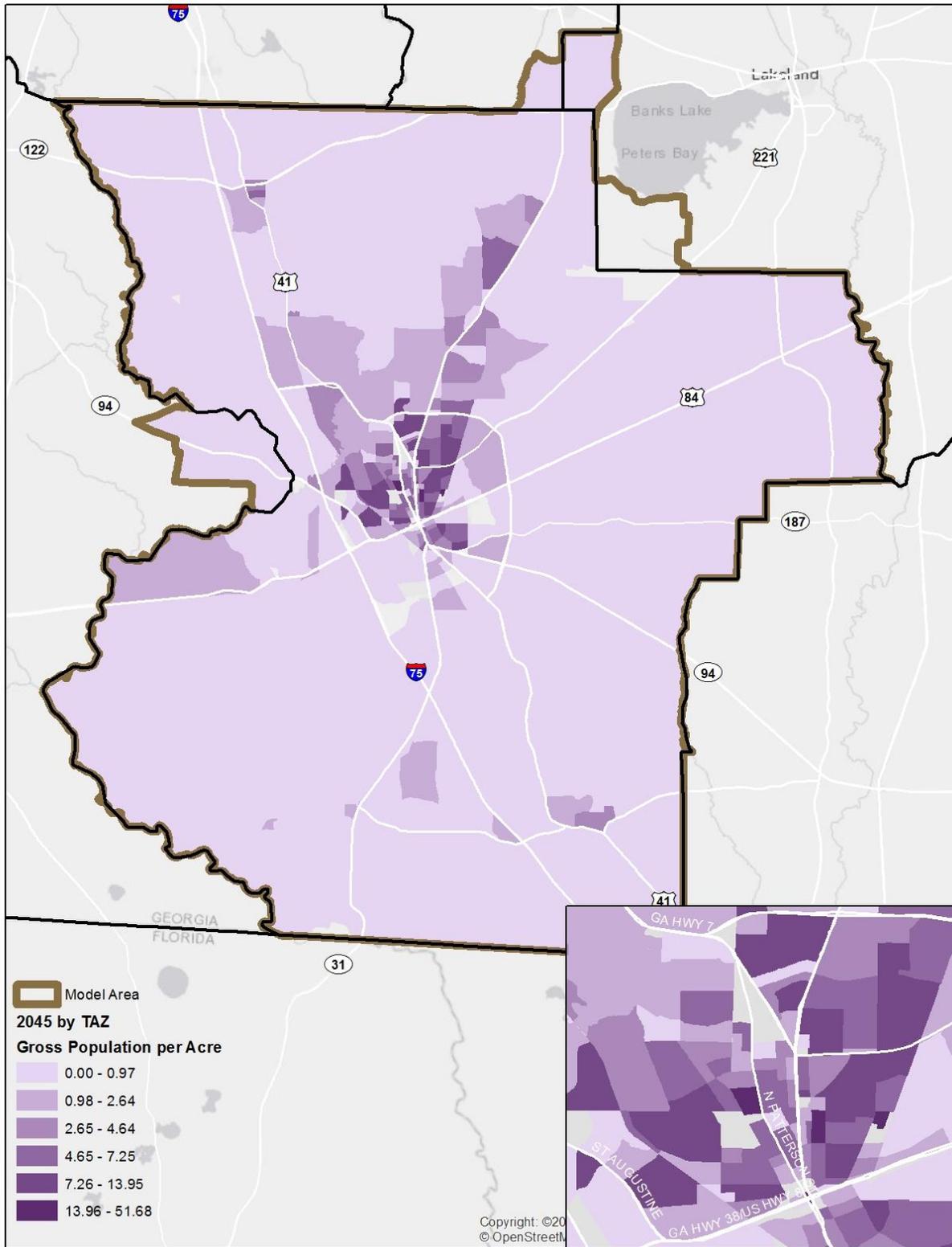


Figure 18 2045 Gross Population Density

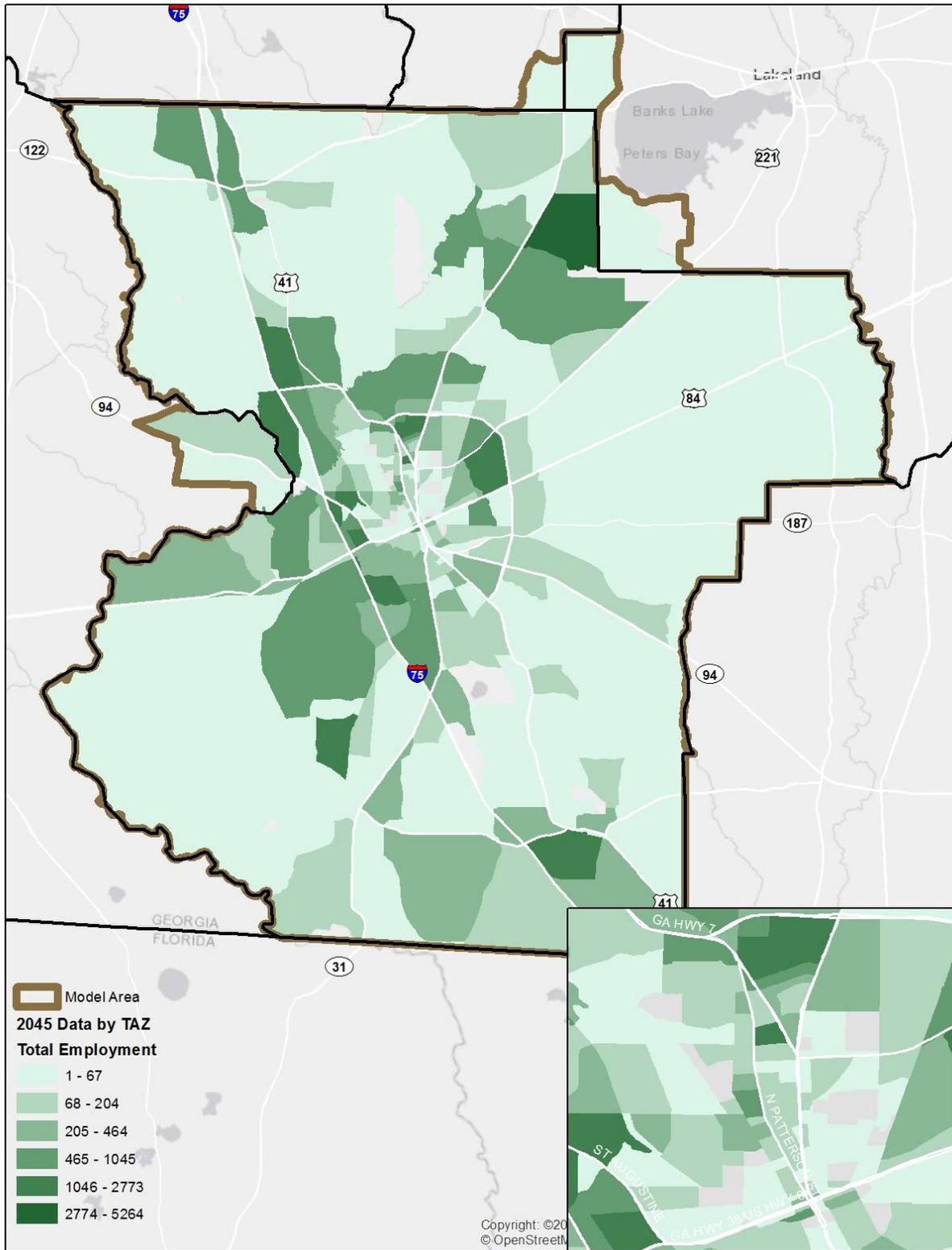


Figure 19 2045 Employment Projections by Zone

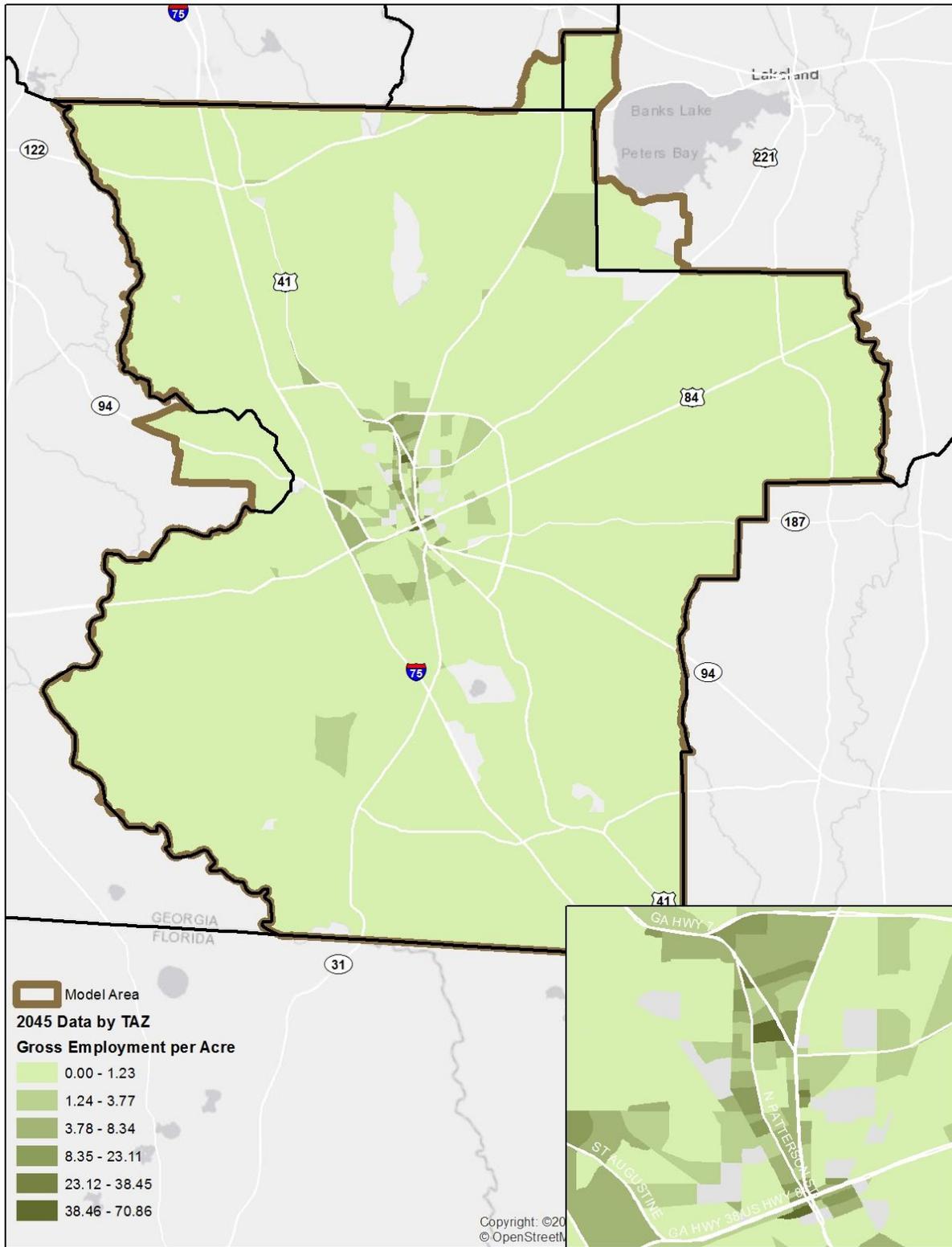


Figure 20 2045 Gross Employment Density by Zone

2045 HORIZON YEAR FINDINGS

Because the developable area in designated Growth Areas was sufficient to accommodate almost all of the projected growth by 2045, little growth was assigned outside of designated Growth Areas. A small amount of household growth (six percent of total growth to 2045) was assumed in developable areas zoned residential with existing access to water or sewer service. This is a reasonable assumption as areas with access to water and sewer service are likely to develop even if they are not within an identified Growth Area.

All of the job increases in retail, manufacturing, and wholesale sectors were accommodated in the developable portions of commercial and industrial Growth Areas. As mentioned above, the land identified for industrial growth exceeds what will be needed to accommodate the 2045 MTCUW employment targets.

Because Growth Areas did not accommodate the 2045 service sector job target, we did assign service jobs (based on zoning) to developable land with existing access to water and sewer service outside of Growth Areas. Growth Areas accommodated 60 percent of the service employment growth to 2045. *The share of service employment in Growth Areas could be increased by assuming a higher value for service jobs per acre.* However, the current assumption is consistent with the range of jobs per acre for other employment categories.

INTERIM YEARS

The study team developed additional projections at five-year intervals. We assumed linear growth trends between the base year and 2045 projections to establish interim year targets in each socioeconomic category. Then, we assumed horizon years for the Growth Area timeframes provided by SGRC and local staff. The timeframes were short term, mid-term, mid-long term, and long term. We tested a range of assumptions until the targets for each interim year were met within five percent. The assumed horizon years for development are shown in the map to the right in ten-year increments. The recommended assumptions about timing of future development are:

1. Commercial, industrial, and institutional development to 2025 will occur in short term Growth Areas and mid-term Growth Areas with water or sewer access, and about half of those areas zoned appropriately with water and sewer access.
2. Commercial, industrial, and institutional development to 2035 will occur in mid-term Growth Areas that are not already developed.
3. Commercial, industrial, and institutional development to 2045 will occur in mid-long term and long term Growth Areas, with the exception of long term industrial areas without access to water/sewer service, which will develop after 2045.
4. Residential development to 2025 will occur in short term residential Growth Areas.
5. Residential development to 2035 will occur in short term, mid-term, mid-long term, and some long term residential Growth Areas, as well as areas zoned residential with access to water and sewer service. The long term Growth Areas with water and sewer access are included in the 2035 residential acreage.
6. Residential development to 2045 will include long term Growth Areas without existing access to water and sewer service.

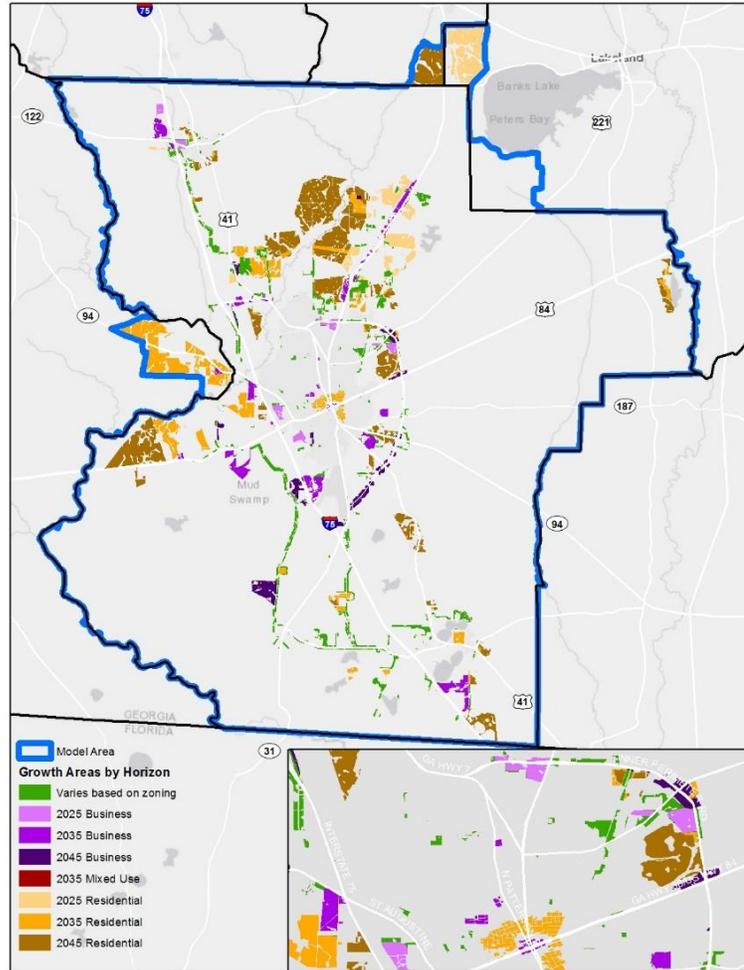


Figure 21 Growth Areas by Projected Development Horizon

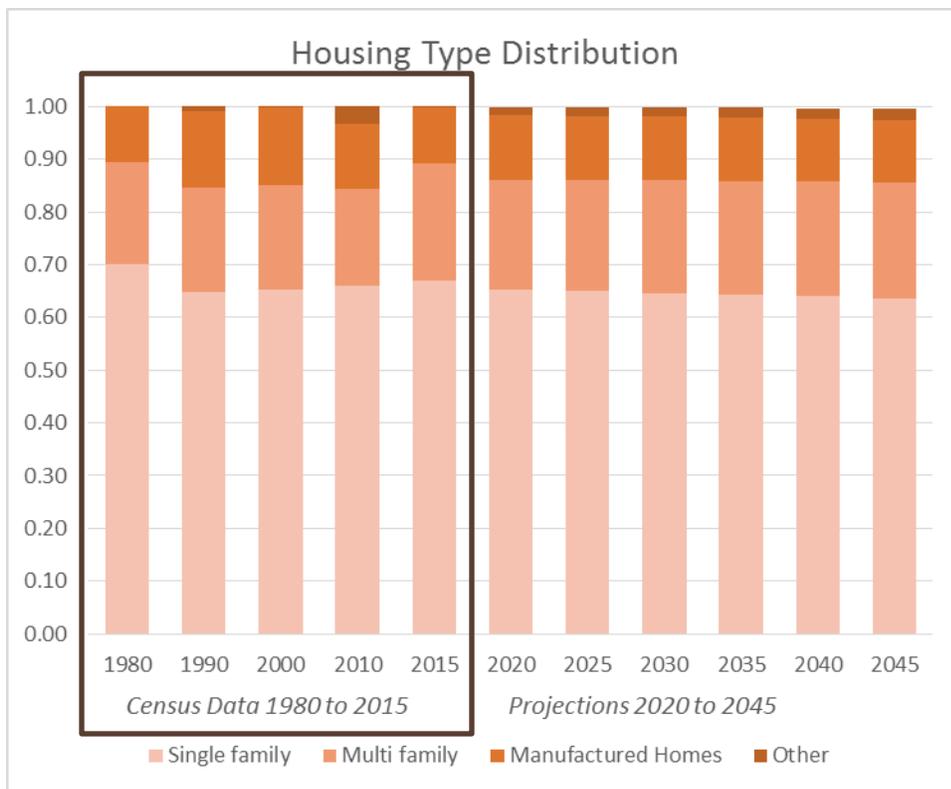
LOWNDES COUNTY PROJECTIONS FOR COMPREHENSIVE PLANNING

In addition to the transportation planning data discussed in the sections above, the study team developed projections for population, housing, age, educational attainment, race, and the labor force for comprehensive planning in Lowndes County.

In general, projections for specific variables follow the trend established by Decennial Census and American Community Survey data from 1980 to 2015. Housing variable trend lines were estimated based on the proportion, or share, of total housing units. For example, to project the number of single family housing units into the future, we calculated the share of all housing units that were single family over time, and projected the share into the future. The calculated and projected shares, and resulting single family unit projections, are shown in the table below.

	Census Data					Projections					
	1980	1990	2000	2010	2015	2020	2025	2030	2035	2040	2045
SF units share of all housing units	0.70	0.65	0.65	0.66	0.67	0.65	0.65	0.65	0.64	0.64	0.64
SF units	17,033	18,719	23,831	28,966	30,426	32,251	34,200	36,125	3,8032	39,918	41,783

The figure below shows a summary of housing types reported in the Decennial Census and American Community Survey and projected into the future for all of Lowndes County. This is an example of a trend in the distribution of characteristics amongst all housing units.



Transport Studio obtained historic population characteristics as well as projections developed by Woods & Poole for the Atlanta Journal Constitution. While Woods & Poole does not project all racial cohorts as reported in the Census, the study team considered the projections when refining the trend. Projections of population characteristics follow the historic demographic trend from 1980 to 2015 as well as historical birth, death and migration data. The reported and projected racial composition of the Lowndes County population is shown below. Note that multi-race was not a response available to Census takers until 2010.

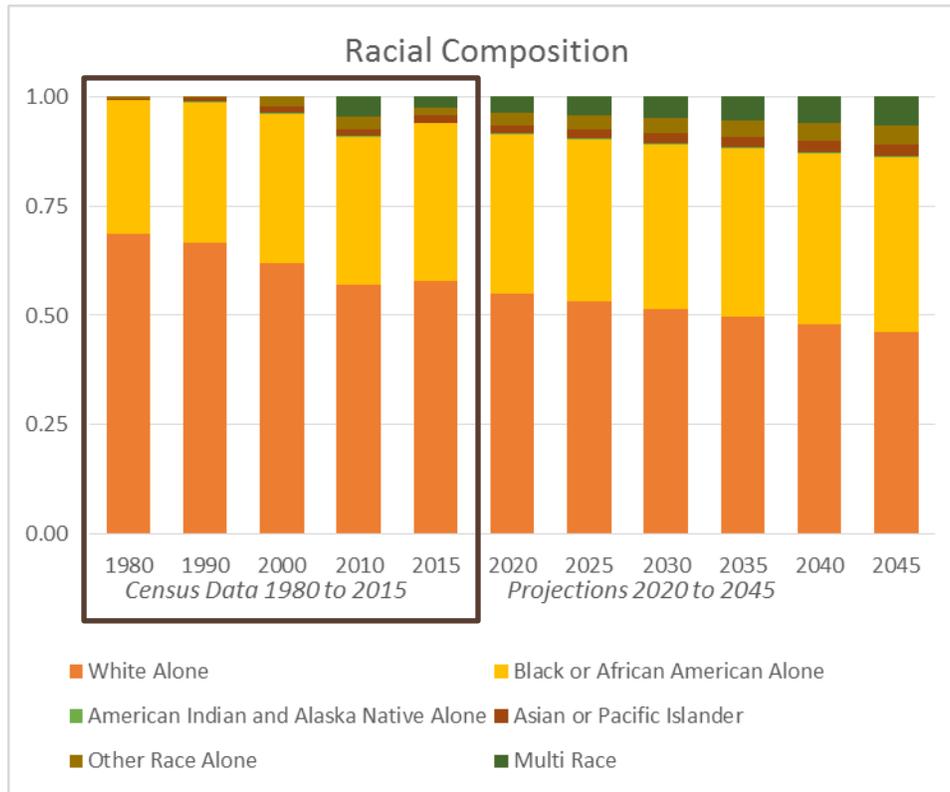


Figure 22 Racial Breakdown in Lowndes County over Time

The figure below combines the four VLMPO region counties to demonstrate how racial breakdown will shift during the study period.

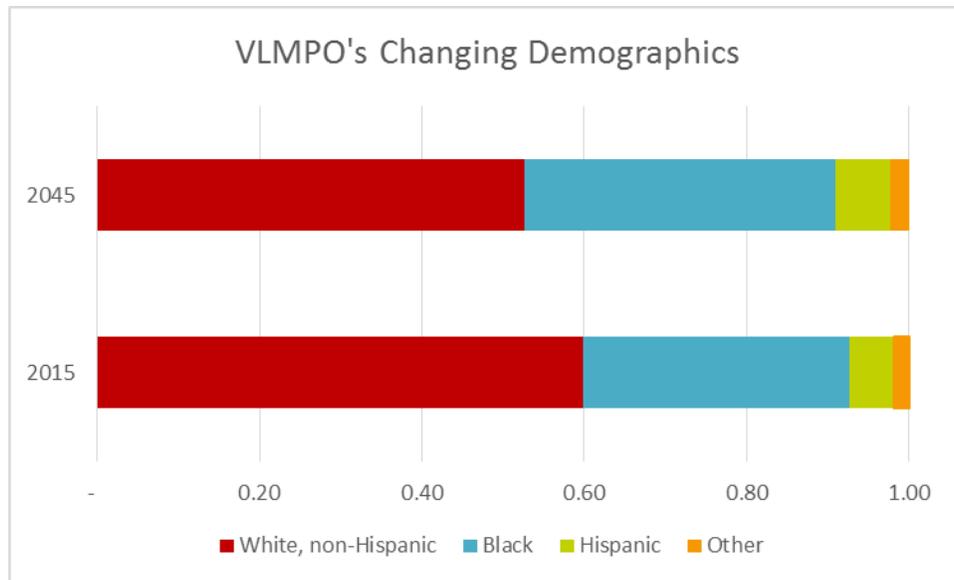


Figure 23 Race and Ethnicity Trends in the VLMPO Region (Source: Woods and Poole and US Census Bureau)

CONCLUSION

The 2045 Socioeconomic Data Study included data collection, projecting demographics into the future, and allocating future growth to small areas such as traffic analysis zones, Census block groups, and Census tracts.

Consistent with current practice, the study team recommends a regular county-wide review and revision of Census boundaries to reflect physical boundaries and homogenous areas, where applicable. Traffic analysis zone boundaries should be revised to follow Census boundaries and guidelines established by the Georgia Department of Transportation. Consistent boundaries facilitate coordinated planning and data collection. Accurate boundaries also facilitate an accurate Census count, which is critical to population-based funding for the region. The Local Update of Census Addresses is a good opportunity to review Census boundaries and propose changes as needed to the Census Bureau.

The study team has developed one set of future year socioeconomic projections based largely on the Growth Areas identified by local and regional staff. The development patterns and policies associated with these Growth Areas should be assessed during the upcoming comprehensive plan efforts. The travel demand model and GIS should be used where possible to evaluate the performance of future development alternatives. Finally, the horizon year projections should be adjusted as new data becomes available. As development proposals make their way through the planning pipeline, the distribution of population and jobs should be updated as needed. Local and regional staff should continue to coordinate with major employers and developers into the future.

APPENDIX

The table below shows total population and employment variables in five year increments. Note that county-wide population is total population while TDM population has been adjusted for use in the travel demand model, as discussed in the Growth Targets section above.

Year	County	County-wide Population	Travel Demand Model (TDM) Area Variables						
			TDM Population	TDM Employment	MTCUW Employment	Service Employment	Retail Employment	AMC Employment	TDM Households
2045	Lowndes	154,885	152,487	74,644	8,675	48,657	12,383	4,929	58,340
2045	Berrien	16,271	56	47	0	15	0	32	30
2045	Brooks	12,927	2,514	185	21	114	28	22	1,231
2045	Lanier	15,032	2,438	28	0	28	0	0	934
2045	Total	199,115	157,495	74,904	8,696	48,814	12,411	4,983	60,535
2040	Lowndes	150,012	144,406	71,545	8,673	46,422	11,535	4,915	55,225
2040	Berrien	17,010	53	47	0	15	0	32	28
2040	Brooks	13,479	2,478	185	21	114	28	22	1,231
2040	Lanier	14,303	2,440	28	0	28	0	0	934
2040	Total	194,803	149,377	71,805	8,694	46,579	11,563	4,969	57,418
2035	Lowndes	145,139	136,240	68,317	8,669	44,083	10,668	4,894	52,091
2035	Berrien	17,748	49	47	0	15	0	32	26
2035	Brooks	14,031	2,439	185	21	114	28	22	1,230
2035	Lanier	13,573	2,442	28	0	28	0	0	934
2035	Total	190,491	141,170	68,577	8,690	44,240	10,696	4,948	54,281
2030	Lowndes	138,165	130,026	66,821	8,652	43,002	10,397	4,770	49,718
2030	Berrien	18,216	49	47	0	15	0	32	26
2030	Brooks	14,508	2,323	183	21	113	27	22	1,172
2030	Lanier	12,858	2,442	28	0	28	0	0	934
2030	Total	183,746	134,840	67,079	8,673	43,158	10,424	4,824	51,850
2025	Lowndes	131,190	123,730	65,285	8,631	41,896	10,117	4,641	47,288
2025	Berrien	18,683	49	47	0	15	0	32	26
2025	Brooks	14,985	2,205	177	21	110	24	22	1,112
2025	Lanier	12,142	2,442	28	0	28	0	0	934
2025	Total	177,000	128,426	65,537	8,652	42,049	10,141	4,695	49,360

Year	County	County-wide Population	Travel Demand Model (TDM) Area Variables						
			TDM Population	TDM Employment	MTCUW Employment	Service Employment	Retail Employment	AMC Employment	TDM Households
2020	Lowndes	122,197	118,351	61,033	8,655	38,719	9,098	4,561	45,224
2020	Berrien	18,851	49	47	0	15	0	32	26
2020	Brooks	15,311	2,205	177	21	110	24	22	1,112
2020	Lanier	11,273	2,050	28	0	28	0	0	784
2020	Total	167,631	122,655	61,285	8,676	38,872	9,122	4,615	47,146
2015	Lowndes	113,203	112,963	56,678	8,676	35,472	8,054	4,476	43,150
2015	Berrien	19,019	49	47	0	15	0	32	26
2015	Brooks	15,637	2,205	177	21	110	24	22	1,112
2015	Lanier	10,403	1,658	28	0	28	0	0	634
2015	Total	158,262	116,875	56,930	8,697	35,625	8,078	4,530	44,922

The four maps below provide a look at the interim steps in growth allocation for the study area.

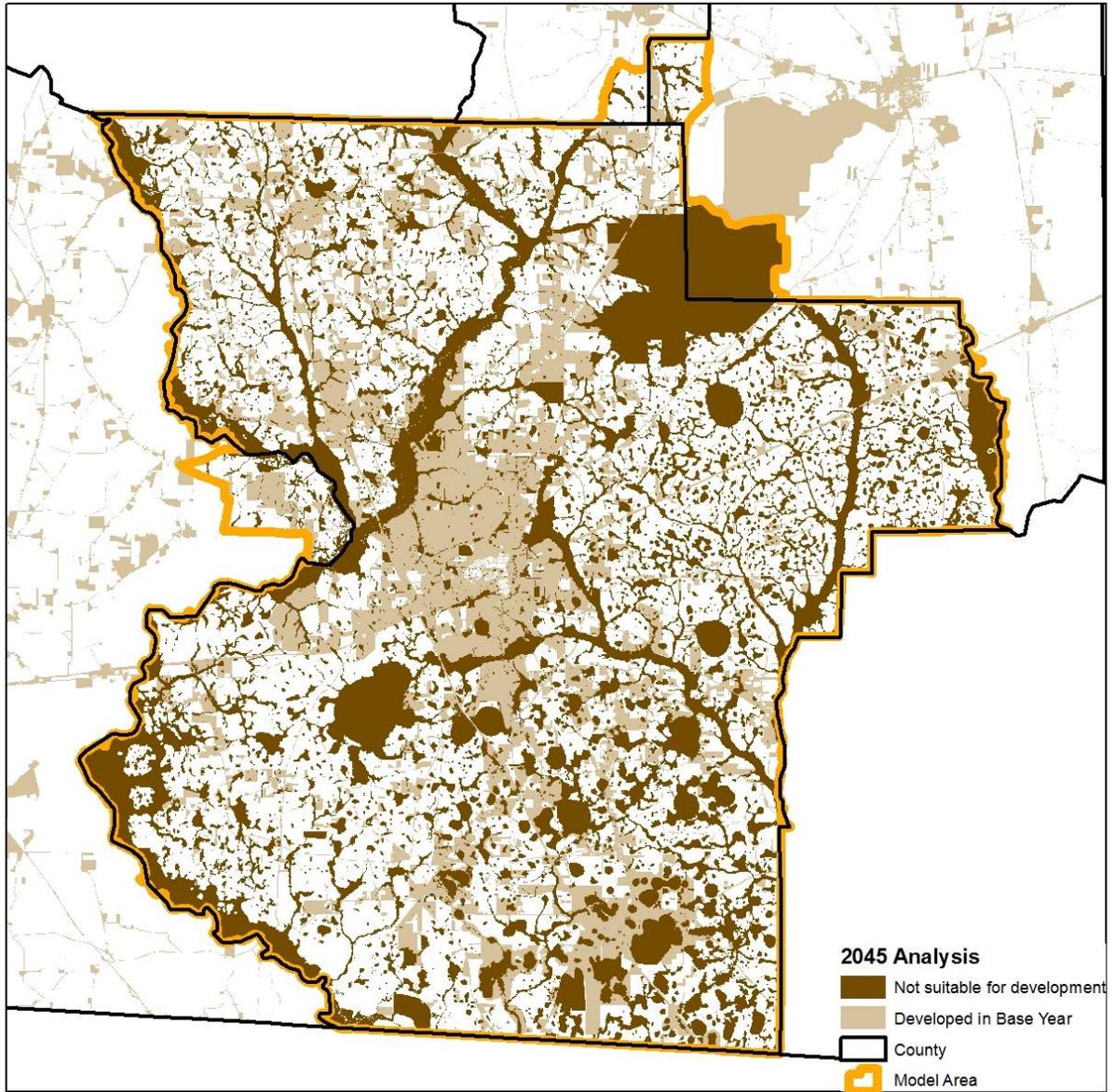


Figure 24 Land Not Suitable for Development or Already Developed

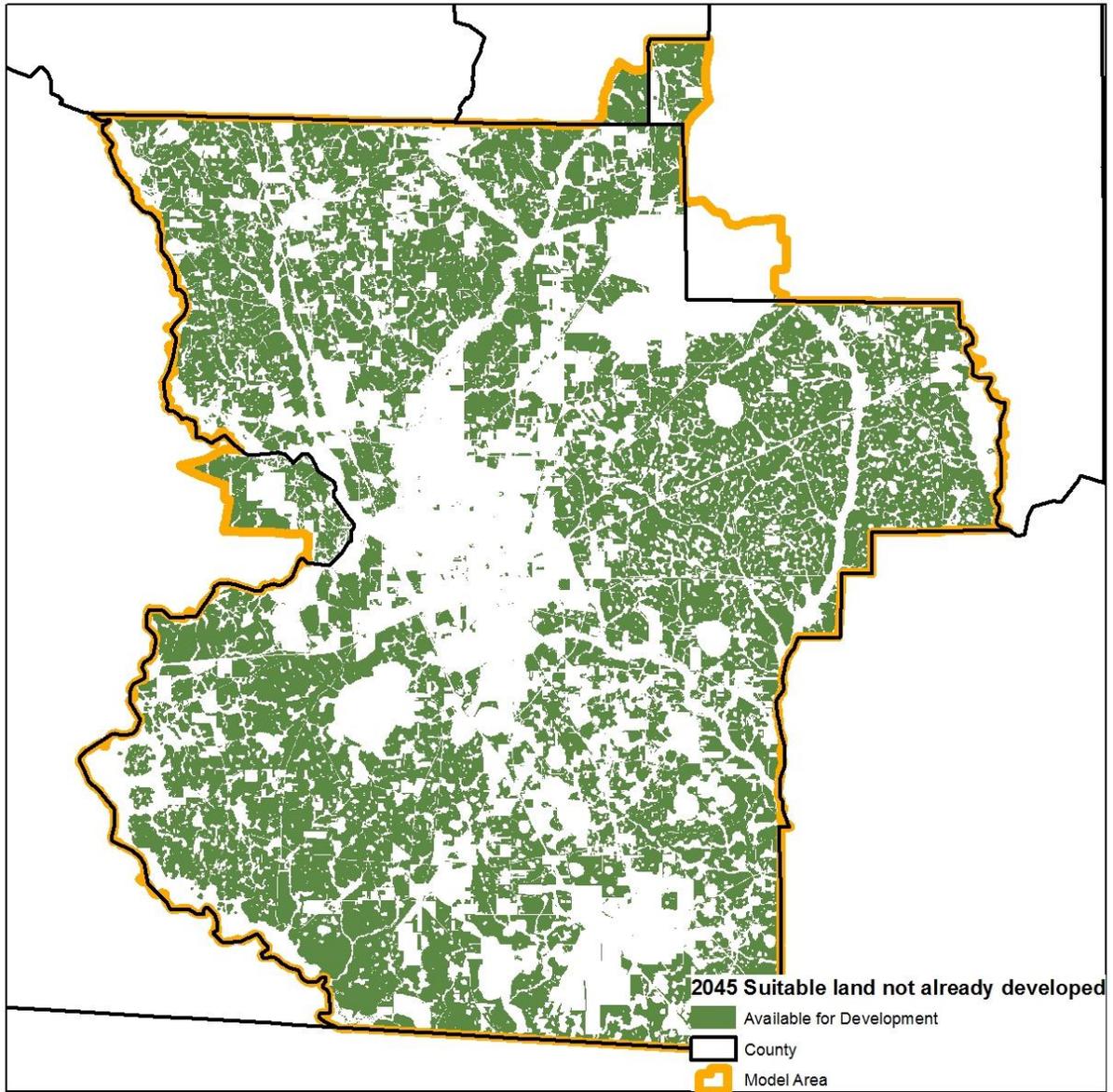


Figure 25 Land Available for Development from 2015 to 2045

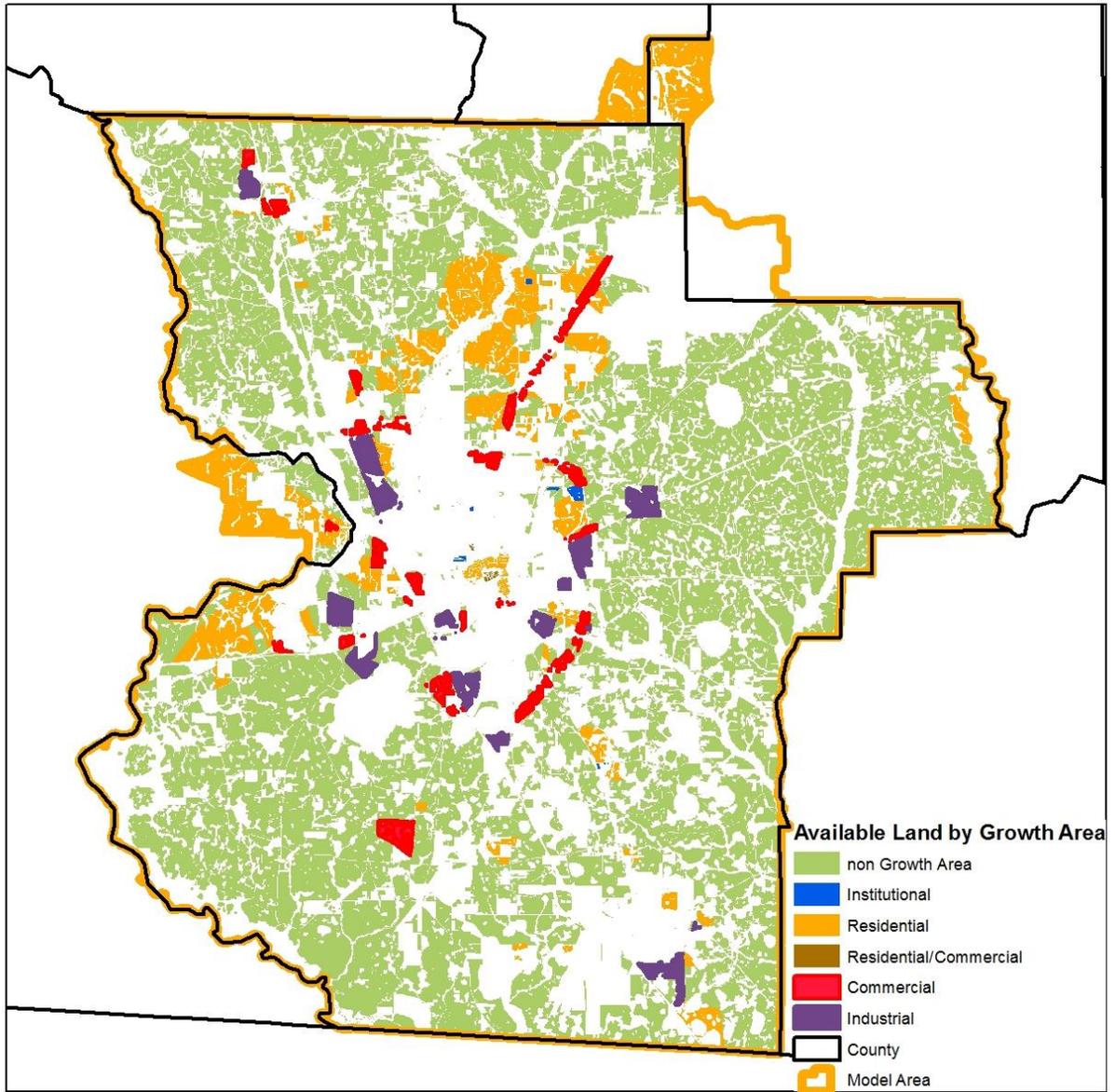


Figure 26 Areas Available for Development by Growth Area Type

(emphasis added to commercial and industrial areas)

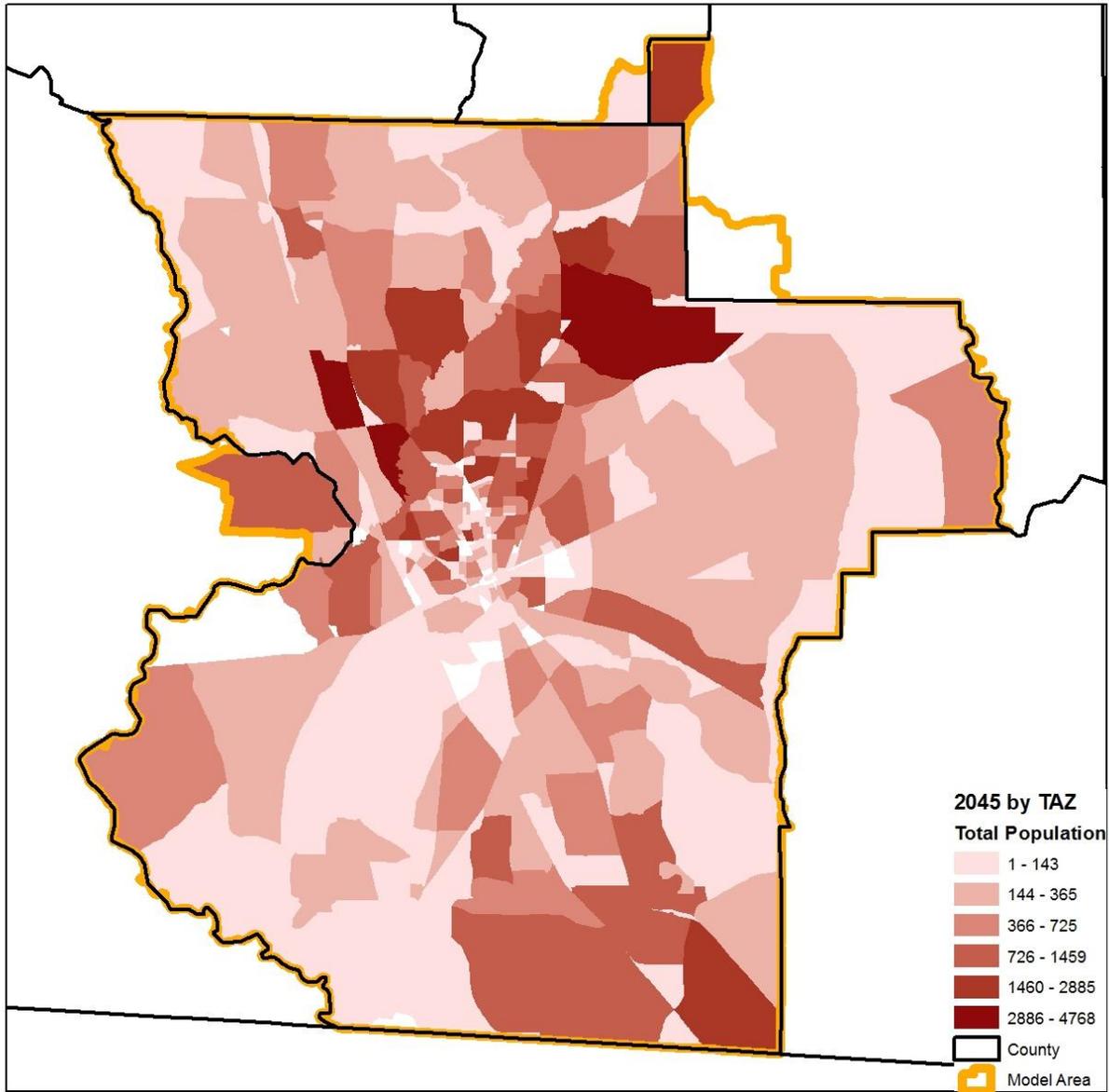


Figure 27 2045 Population Allocation by Zone

The map below shows the growth areas and traffic analysis zone boundaries for reference. The developable land within each Growth Area was calculated by TAZ to project future residential and business development in the TAZ.

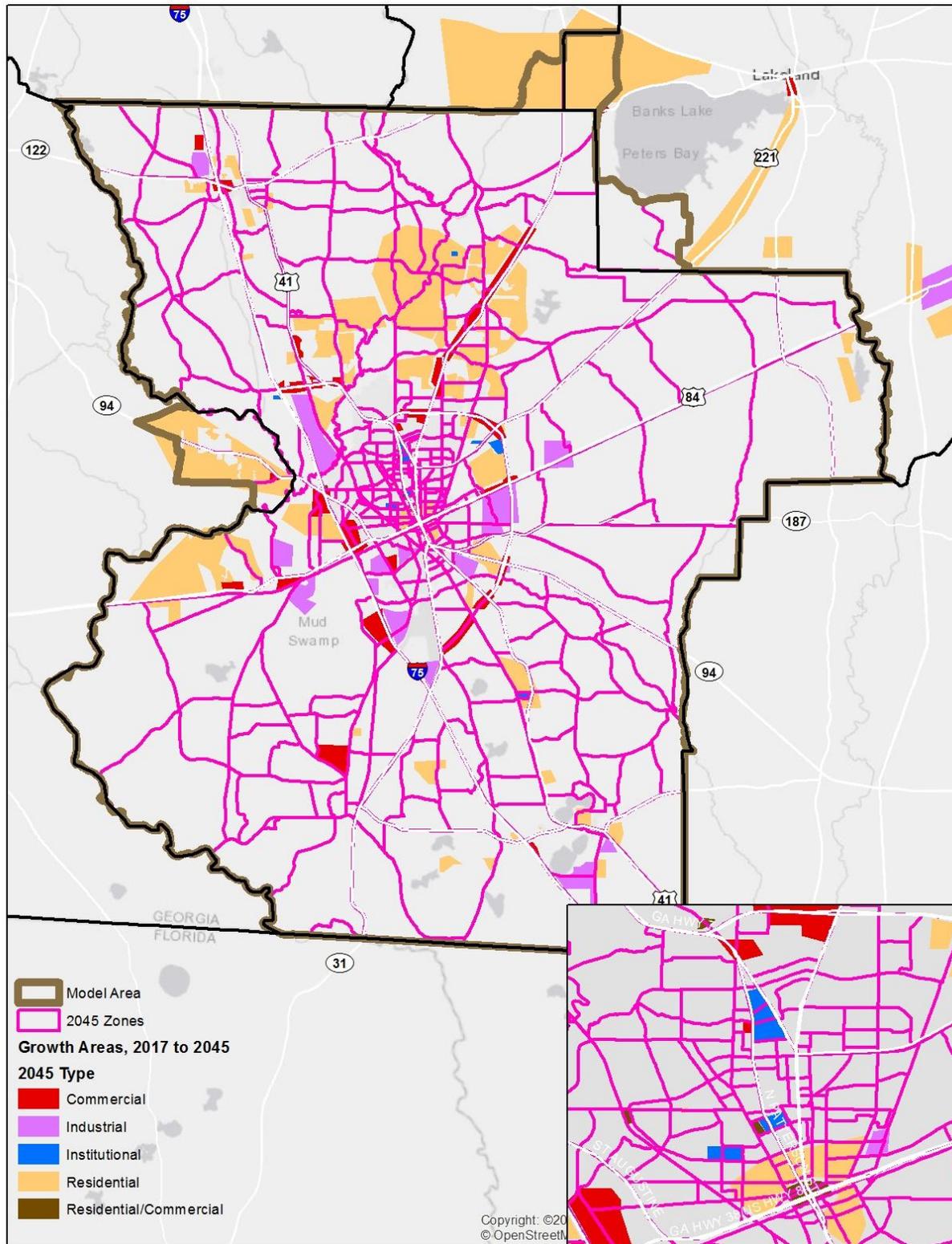


Figure 28 Growth Areas and Traffic Analysis Zone Boundaries

The map below shows primary and secondary school enrollment in each zone in 2015.

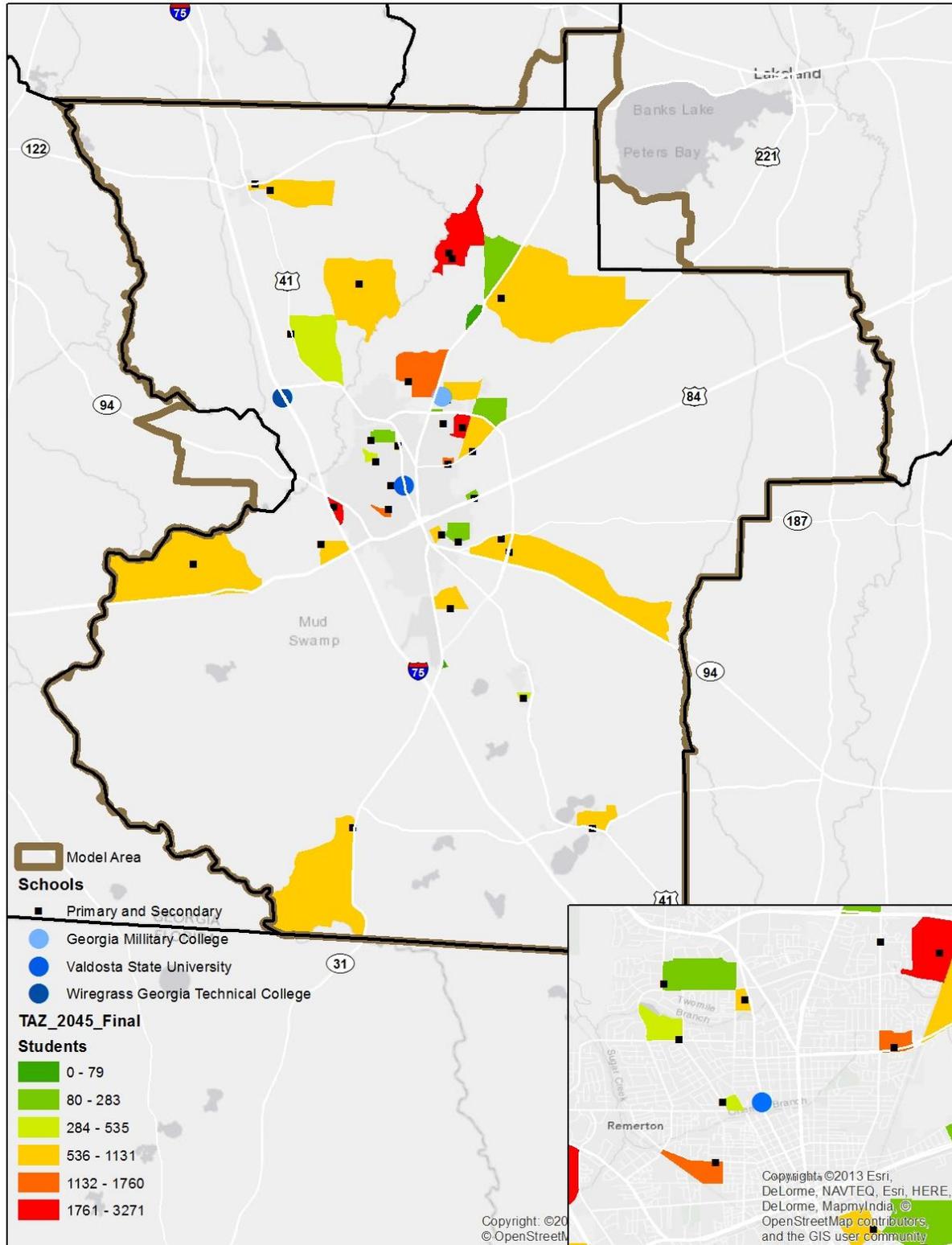


Figure 29 Primary and Secondary School Enrollment, 2015

The map below shows university enrollment in each zone in 2015.

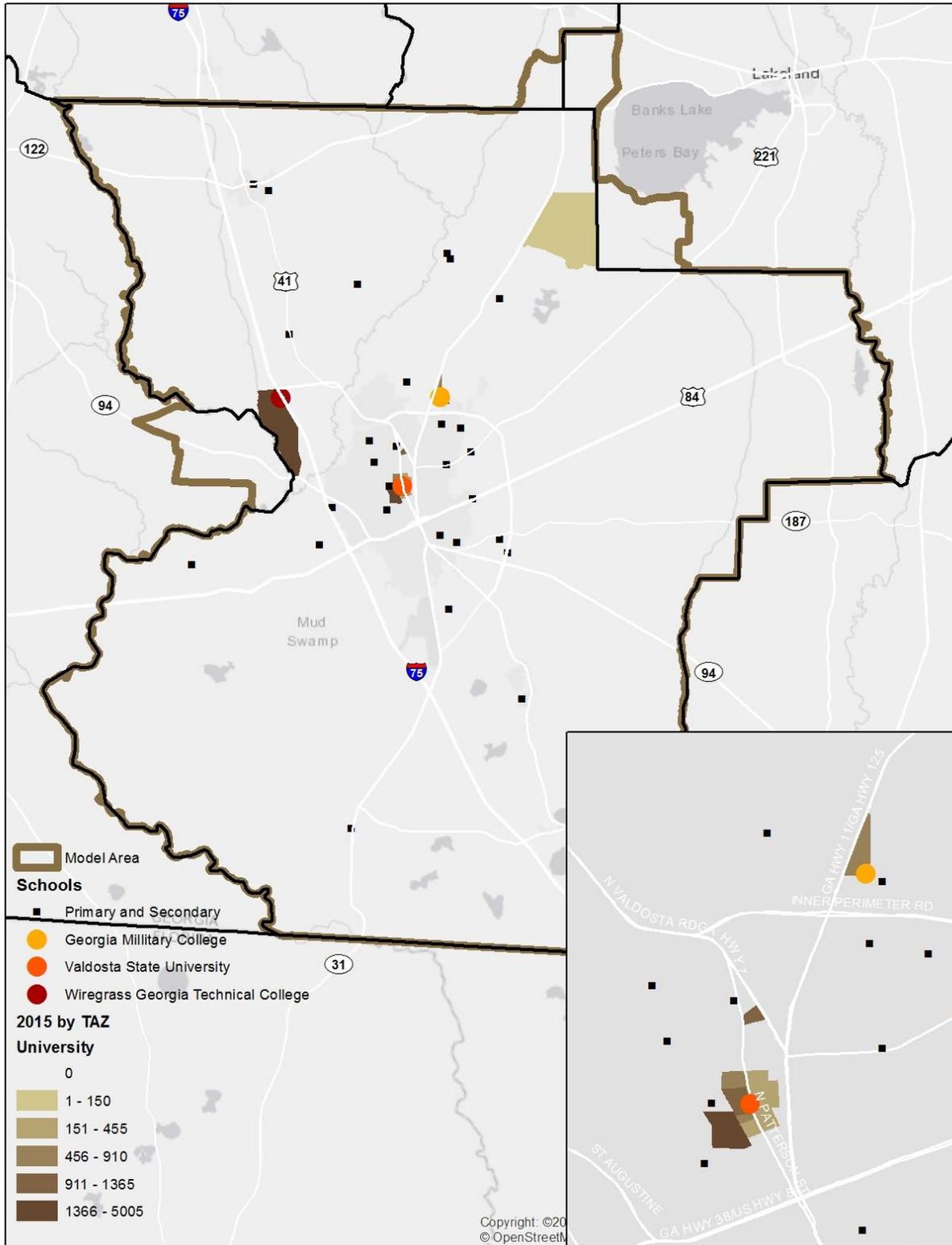


Figure 30 University Enrollment, 2015