

**2040 Statewide Transportation Plan /
2015 Statewide Strategic Transportation Plan:
Economic Forecast**

Technical Memorandum 4B

**final technical
memorandum**

prepared for

Georgia Department of Transportation

prepared by

Cambridge Systematics, Inc.

final technical memorandum

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date

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Executive Summary

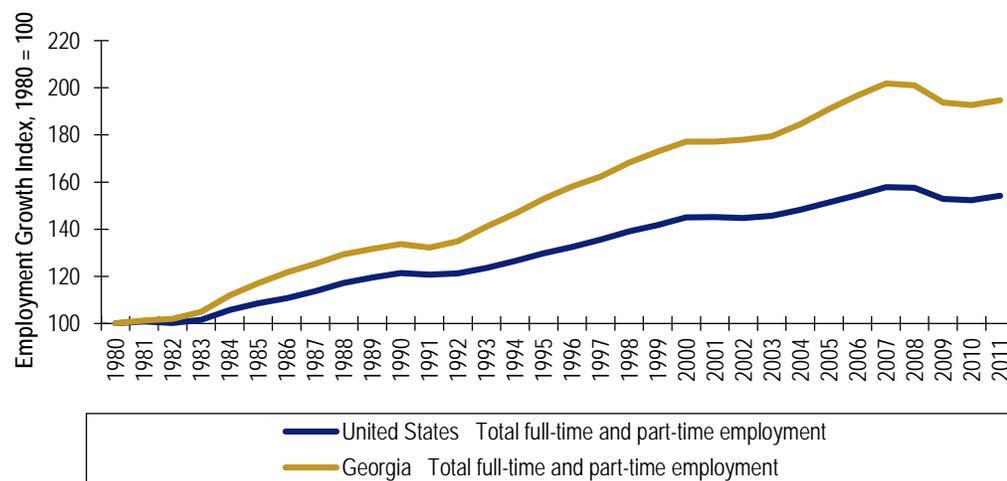
Transportation infrastructure investment and economic growth are closely linked. As infrastructure investments are made the results are not only experienced by the traveler in improved travel time, comfort and safety, but also in the economy in improved productivity and growth. Economic factors such as employment, industry structure, and population all influence transportation demand. Therefore, the performance and state of the transportation system in Georgia is and will be impacted in the future by how these economic factors change over time. The economic forecasts developed in this Technical Memorandum for the Georgia Department of Transportation's Statewide Transportation Plan/Statewide Strategic Transportation Plan (SWTP/SSTP) will drive the forecasts of travel demand to be used to evaluate the future conditions and needs of Georgia's transportation system.

1.0 Economic Trends

To estimate future economic performance, a review of recent historical trends is important to understand where we are today. This section describes the major macroeconomic and demographic trends in Georgia that may influence the future trend of Georgia's economy.

Employment. Employment growth in Georgia has steadily outpaced the national rate of growth since the early 1980s with the late 1990s being an exceptional period as shown in Figure 1.1. With a short period of flat growth in the early 2000s, employment took off in the mid 2000s until the economic downturn. The rapid growth in employment during the early 2000s is generally associated with the housing bubble formation (a surge in equity prices of homes across the U.S. above the true value) during the same period. Much of the housing and construction industry in Georgia depend upon the timber and associated products produced in Georgia. Georgia's economy, as did most other states, slowed during the 2006 to 2008 time period with an average annual loss in employment of approximately 1.5 percent during that period. Only since 2011 has the economy begun to improve as indicated by a slight tick upward in employment growth during the last year. Although an improvement, employment levels are only about where they were in 2009 when the economy was in the early stages of recovering from the 2008 recession.

Figure 1.1 U.S. and Georgia Employment Growth
1980-2011



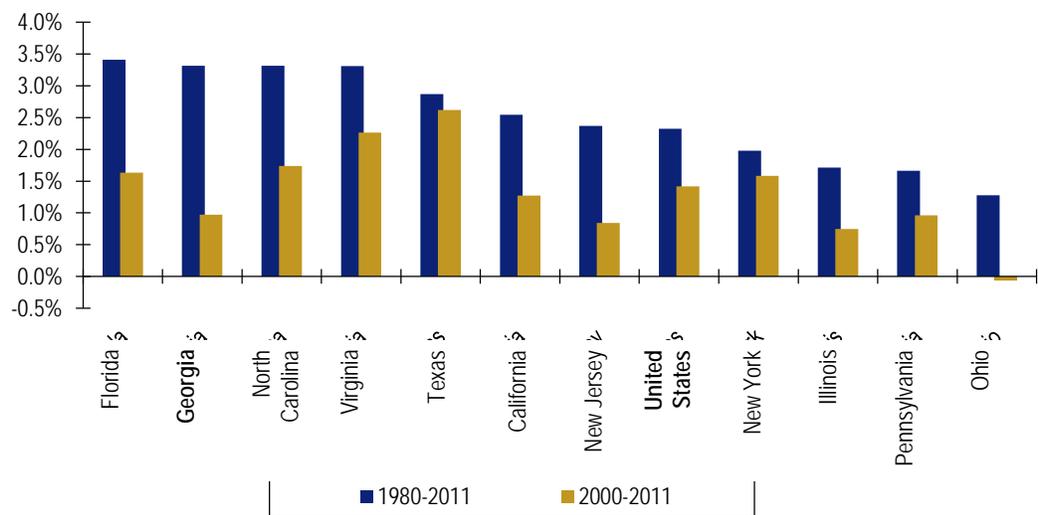
Source: Bureau of Economic Analysis.

Gross State Product. Georgia's GSP, a universal measure of economic size and activity, will be used as a key determinant of transportation demand throughout the forecast period (2012-2040). Higher economic growth is tied to increased

production of goods and services, which leads to an increase in transportation demand. The economic sectors which contribute most to transportation demand are manufacturing, trade, agriculture, retail, distribution, and construction.

Historically, Georgia ranked as one of the fastest growing states in the U.S. among the larger states in terms of economy, second only to Florida between 1980 and 2011. However, given the recent economic downturn and residential housing bust, Georgia has fallen behind most states in the recovery (Figure 1.2). Not only has Georgia’s recovery slowed over the past several years but its average growth is not keeping pace with that of the nation.

Figure 1.2 Average Annual GSP Growth in Georgia
1980-2011 and 2000-2011

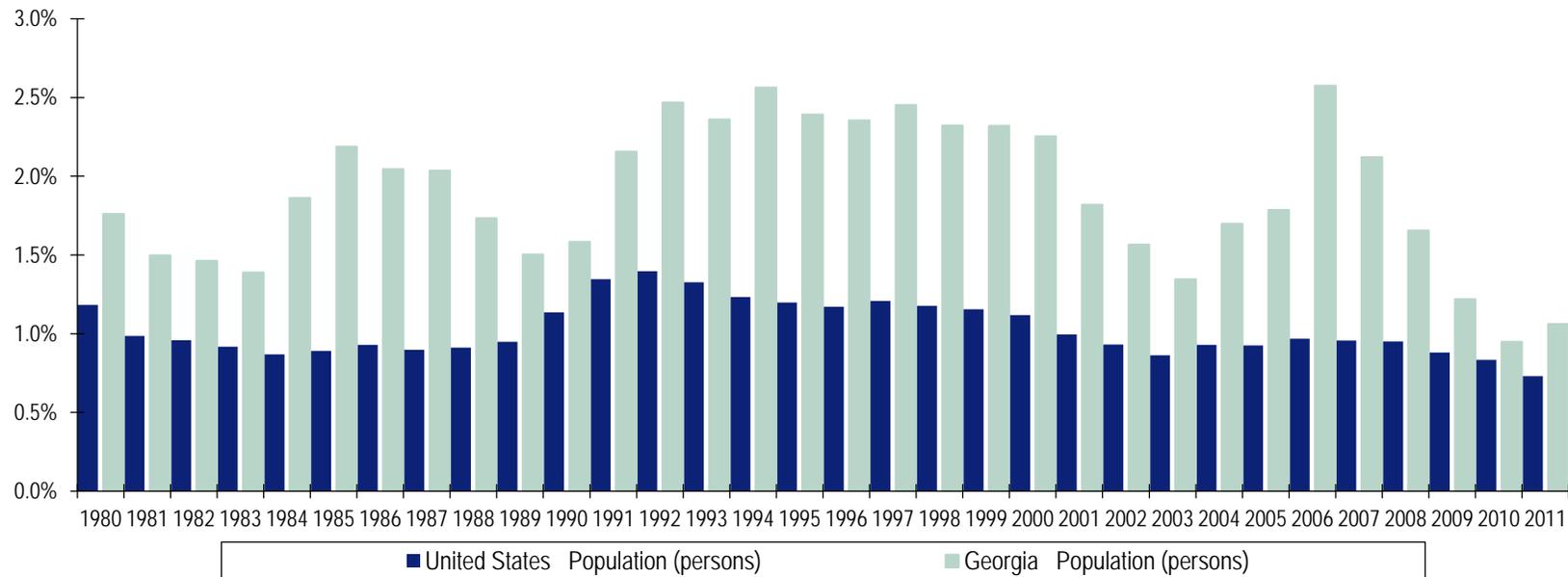


Source: Bureau of Economic Analysis.

Population. Figure 1.3 compares the rate of population growth for Georgia and the U.S., and shows that since the 1980s Georgia has consistently outpaced the nation. The 1990s marked the fastest population growth period in Georgia with an average growth rate of 23 percent between 1990 and 1999, which is double the national growth rate of 12.3 percent growth. Throughout the 1990s Georgia population growth rates exceeded that of the U.S. on average by about 1.1 percent per year. However, since 2000, that growth has slowed somewhat. With the exception of a spike in growth between 2006 and 2007, the average growth rate between 2000 and 2011 in Georgia has been only 0.75 percent higher than the growth rate nationally. Nevertheless, despite the slowdown in economic growth during recent years, Georgia’s population has continued to grow partially due to a large influx of immigrants. Between 2007 and 2011 foreign-born Georgia residents accounted for 9.7 percent of the State’s population, up from 7.1 percent between 1990 and 2000.¹

¹ U.S. Census Bureau.

Figure 1.3 U.S. and Georgia Annual Population Percent Change
1980-2011



Source: Bureau of Economic Analysis.

Typically, population growth tends to follow employment, and this trend is evident in major metropolitan centers, such as Atlanta. Table 1.1 shows the change over time of how population growth has shifted from urban Atlanta to suburban areas nearby.

As dense urban areas become more populated the average annual growth rate in population is estimated to begin to flatten when the ability for growth maxes out land use and transportation capacity. A prime example of this occurrence in Georgia is in the metropolitan Atlanta area. The shift in growth from urban Atlanta comprised of Clayton, Cobb, Dekalb, Douglas, Fulton, and Gwinnett counties, to the outlying suburban counties including Barrow, Bartow, Carroll, Cherokee, Coweta, Fayette, Forsyth, Henry, Newton, Paulding, Pickens, Rockdale, Spalding, and Walton, occurred in the early 2000s. At that time, growth in the outer suburban regions of Atlanta began increasing faster than in urban and inner suburban regions. The growth in counties northwest of Atlanta (Barrow, Cherokee, and Paulding counties), southeast of Atlanta (Henry and Newton counties), and north of Atlanta (Forsyth County) averaged well over four percent annually during this most recent decade. This shift in growth in suburban areas over urban areas is not unique to the metropolitan Atlanta area. Similar trends are taking place in suburban areas around other urban areas such as Columbus, Savannah, and Macon, where noticeable increases in population growth is taking place in the suburbs more so than in urban areas.

Table 1.1 Georgia Population Estimates by County

Geographic Area	1990	2000	2010	CAGR	
				1990-2000	2000-2010
Inner Suburban and Urban Atlanta					
Clayton	181,436	236,644	259,424	2.69%	0.92%
Cobb	447,745	607,450	688,078	3.10%	1.25%
Dekalb	546,174	666,158	691,893	2.01%	0.38%
Douglas	71,120	92,315	132,403	2.64%	3.67%
Fulton	648,776	815,579	920,581	2.31%	1.22%
Gwinnett	352,910	588,133	805,321	5.24%	3.19%
Outer Suburban Atlanta					
Barrow	29,721	46,177	69,367	4.50%	4.15%
Bartow	55,915	76,062	100,157	3.12%	2.79%
Carroll	71,422	87,302	110,527	2.03%	2.39%
Cherokee	90,204	142,013	214,346	4.64%	4.20%
Coweta	53,853	89,254	127,317	5.18%	3.62%
Fayette	62,415	91,313	106,567	3.88%	1.56%

Geographic Area	1990	2000	2010	CAGR	
				1990-2000	2000-2010
Forsyth	44,083	98,360	175,511	8.36%	5.96%
Henry	58,741	119,498	203,922	7.36%	5.49%
Newton	41,808	61,906	99,958	4.00%	4.91%
Paulding	41,611	81,615	142,324	6.97%	5.72%
Pickens	14,432	23,022	29,431	4.78%	2.49%
Rockdale	54,091	70,292	85,215	2.65%	1.94%
Spalding	54,457	58,461	64,073	0.71%	0.92%
Walton	38,586	60,637	83,768	4.62%	3.28%
Inner Suburban/Urban Atlanta	2,248,161	3,006,279	3,497,700	2.95%	1.53%
Outer Suburban Atlanta	711,339	1,105,912	1,612,483	4.51%	3.84%
Georgia	6,478,149	8,186,653	9,687,653	2.37%	1.70%

Source: U.S. Census and Cambridge Systematics calculations.

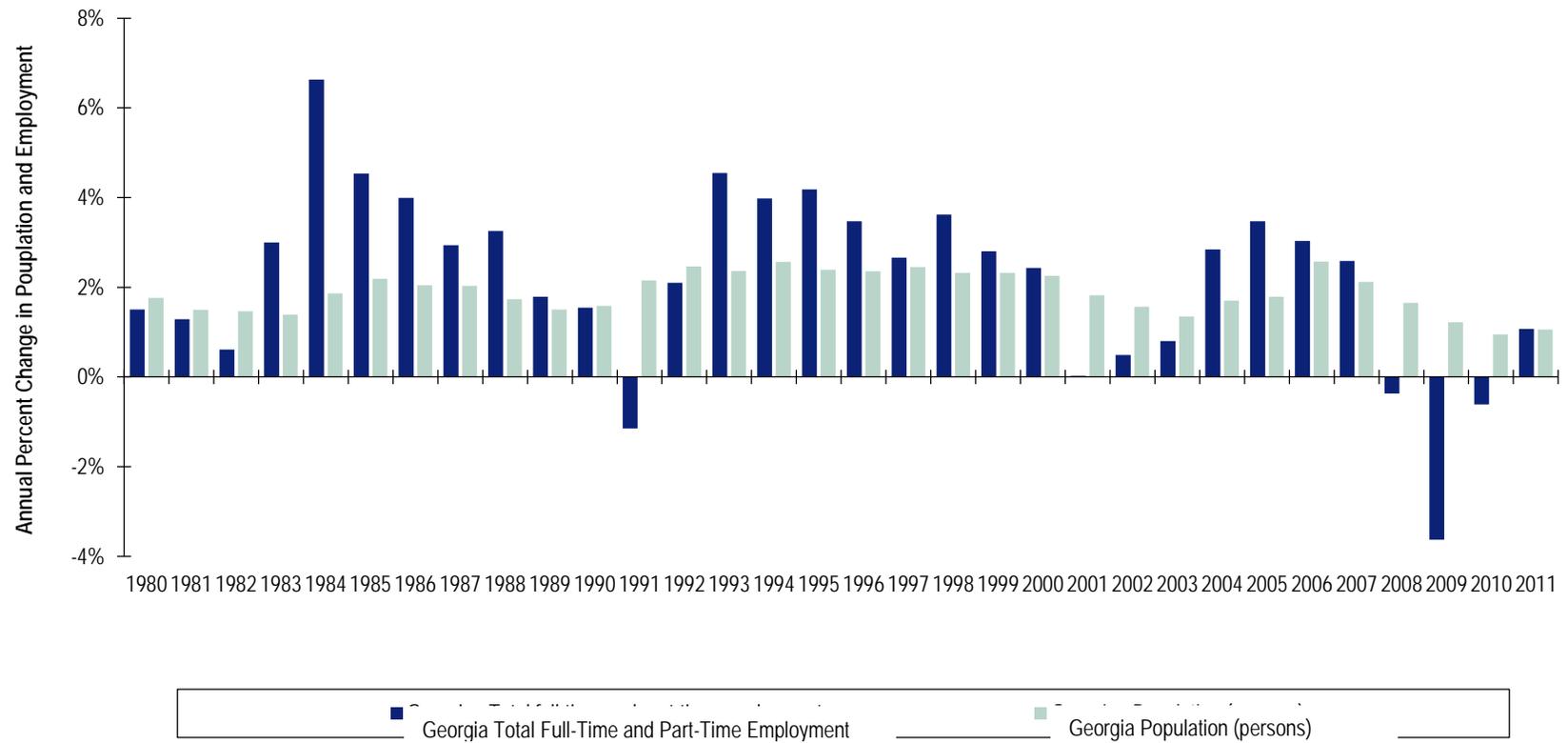
 Lowest growth	 Highest growth
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The 2035 Georgia Statewide Transportation Plan, which was completed in 2005, assumed there would be variations in economic growth over the forecast period; however, the severity of the 2008 recession and the slow subsequent recovery was not anticipated by forecasters earlier in the decade. Strong employment growth in the 1990s spurred population growth as people moved into the State to participate in employment opportunities generated by the expanding economy (Figure 1.4). Since the recession, employment growth has lagged behind population growth. While population growth has largely remained around two percent each year with slower growth rates during times of recession, the relatively stable statewide population growth in Georgia indicates that population growth has not been significantly affected by fluctuations in employment. Thus, even when employment levels declined between 2007 and 2009, Georgia's population continued to grow. This demonstrates that Georgia has continued to attract internal U.S. migrants (such as a modest number of 15,000 retirees moving annually to Georgia between 2007 and 2011²) and immigrants, despite the economic slowdown. If this pattern was to continue it would inevitably result in a decline in per capita income. Therefore, job creation and the supporting infrastructure investment is an area

² Golden Rules: Evaluating Retiree-Based Economic Development in Georgia, Selig Center for Economic Growth Terry College of Business, August 2013.

Georgia will need to continue to focus on to accommodate the anticipated growth in population over the next 30 years.

Figure 1.4 Georgia Annual Population and Employment Change
1980-2011



Source: Bureau of Economic Analysis.

2.0 Trends and Events That May Influence Georgia's Economic Growth

In addition to the forecasts and data sources inventoried to develop a recommended forecast, additional materials were gathered to supplement the research. In reviewing published forecasts and outlook reports, such as the Wells Fargo Georgia Economic Outlook June 2013 and the University of Georgia's Terry College of Business' Georgia Economic Outlook 2013, insights into trends with the potential to disrupt or change the patterns for growth in Georgia were identified and are presented in this section. Although available forecasts and trends reviewed indicate that Georgia will maintain solid growth through 2040, there are some key events and trends that may alter these patterns. The subsequent changes, if large enough, could affect the transportation demand, land use, and trip-making patterns.

Industry Employment Shift. According to Wells Fargo, Georgia's productivity will likely grow at a rate of over 1 percent annually over the next few years. This is likely due to the influx of higher value-added jobs such as manufacturing, distribution, and professional services, while at the same time the State sheds some of the more traditional low value-added jobs. For example, hiring in the business and professional services sector grew at a rate of 5.8 percent during the past year. In 2012, Georgia placed sixth nationally in the Site Selections' Annual Governor's Cup with 296 new and expanded facility announcements.³ In 2013, Georgia was ranked #1 in Site Selection's annual ranking for best business climate.⁴ Companies planning new facilities include Caterpillar; Baxter International; Bed, Bath & Beyond; and Lowes. The Atlanta area, a center for business and professional services, is attracting large IT and software sector industries with expansions by CBS, General Motors, PointClear Solutions, Ernst & Young, Infosys, and Athena Health.

Global Recession. The recovery from the 2008 global economic downturn is still in the midst of working through its cycle. Georgia was one of the harder hit states in the U.S., given its relatively lower skilled labor manufacturing employment concentration compared to other states. Imports and exports through Georgia took a steep decline in 2009⁵ as the U.S. economy tried to recover under stressed

³ Wells Fargo Securities, LLC. Georgia Economic Outlook: June 2013.

⁴ Site Selection magazine, November 2013

⁵ Office of Trade and Industry Information, Manufacturing and Services, International Trade Administration, U.S. Department of Commerce.

global economic conditions. Lower global economic demand led to reduced import and export volumes thereby impacting businesses reliant upon the ports and trade-related services in Georgia.

Panama Canal Expansion. Due to open in 2015, the expanded Panama Canal could potentially impact Georgia's ports. The Georgia Ports Authority operates and maintains two Atlantic seaports and two inland ports. The Port of Savannah primarily handles containers, while the Port of Brunswick specializes in the handling of break-bulk and agri-bulk commodities. The expansion of the Panama Canal could enable more of this traffic, in the form of larger vessels, which originates from or is destined for growing Asian markets to transit the canal and directly service East Coast ports. This increase in demand could boost employment at the ports and the large warehousing, distribution, and logistics sectors which have grown up around the Port of Savannah in particular. However, the Port will need to compete with other East Coast ports for this growing business which will require significant land- and waterside infrastructure investments.

Baby Boomers and the Aging Population. The Baby Boom population in the U.S. is expected to double from 40.2 million in 2010 to 88.5 million by 2050⁶, most of whom will retire between 2011 and 2029. As more people retire and move from northern states, especially the Northeast, a popular retirement destination for many is the South. This people could increase vehicular traffic, particularly in rural and suburban areas where retired people tend to live. Over time, this aging population will need alternative modes of transportation as well.

⁶ The Next Four Decades: The Older Population in the United States: 2010 to 2050, U.S. Census Bureau, P25-1138 May 2010.

3.0 Selecting a Consensus Economic Forecast

The 2040 economic forecast comparison developed for this SWTP/SSTP is based on a combination of projections from several sources. Prior to selecting the most suitable forecast for use as the foundation for the statewide update, Cambridge Systematics inventoried available forecasts and evaluated them on a number of factors. These factors include forecast horizon, levels of geographic and industry detail, and licensing cost. The key economic indicators required for the statewide update includes population, employment, and Gross State Product (GSP).

Public Forecasts. On the public side, readily available forecasts published by the U.S. Census Bureau, U.S. Bureau of Economic Analysis, Georgia Governor’s Office of Planning and Budget, Georgia’s Workforce Statistics and Economic Research, Georgia Department of Transportation’s Statewide Travel Demand Model, and individual Georgia Metropolitan Planning Organizations (MPO) were examined. Along with these, forecasts presented in the 2005-2035 Georgia Statewide Transportation Plan and the more recent (2011) Georgia Statewide Freight and Logistics Action Plan (F&L) also were reviewed.

Commercial Forecasts. Information also was gathered on the offerings of several private producers of economic forecasts, including Regional Economic Models, Inc. (REMI) and Economy.com.

All publicly and privately available forecast options were evaluated based on five factors – time horizon, date of last update, geographic detail, industry detail, and licensing cost. From these factors, a recommended forecast for the SWTP/SSTP was identified. After evaluating the public and private projections that would feed into the recommended forecast, the REMI forecast was selected. This forecast not only satisfied each of the five evaluation factors but also corresponded to the employment and population forecasts used in Georgia’s Statewide Travel Demand Model. Table 3.1 presents the comparison between all forecasts reviewed in the selection process.

Table 3.1 Historical and Forecast Comparison

Historical and Forecast Comparison	Population	Employment	GSP
Average Annual Percent Change			
Historical – BEA (1980-2011, 32-year period)	1.9%	2.2%	3.2%
Historical – BEA (2001-2011, 11-year period)	1.6%	0.9%	0.9%
Total Percent Change			
Historical – BEA (1980-2011, 32-year period)	78.9%	94.7%	174.9%
Historical – BEA (2001-2011, 11-year period)	17.2%	9.9%	9.6%
Average Annual Percent Change (2012-2040)			
Forecast – Georgia Statewide Transportation Model	1.2%	1.6%	N/A
Forecast – Economy.com	1.3%	1.3%	2.4%
Forecast – REMI	1.2%	1.2%	2.4%
Forecast – GA Office of Planning and Budget: Census Data Program (2012-2030)	1.9%	N/A	N/A
Forecast – GA Workforce Statistics and Economic Research (2010-2020)	N/A	1.1%	N/A
Forecast – MPOs (2012-2040)	1.4%	1.7%	N/A
Total Percent Change			
Forecast – Georgia Statewide Transportation Model	41.3%	58.6%	N/A
Forecast – Economy.com	46.1%	46.0%	98.7%
Forecast – REMI	40.9%	43.0%	100.4%
Forecast – GA Office of Planning and Budget: Census Data Program (2012-2030)	40.3%	N/A	N/A
Forecast – GA Workforce Statistics and Economic Research (2010-2020)	N/A	11.7%	N/A
Forecast – MPOs (2012-2040)	48.8%	57.5%	N/A

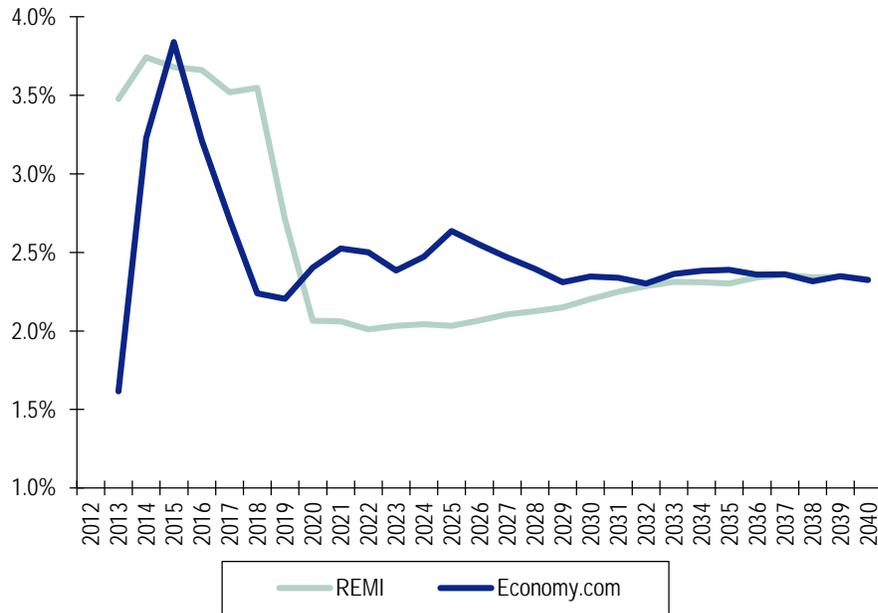
A 32-year (1980-2011) historical period and an 11-year (2001-2011) historical period for each economic indicator was collected from the U.S. Bureau of Economic Analysis for Georgia as a benchmark for each forecast reviewed. The purpose in identifying two historical trend periods is to capture the longer-term historical trend as well as a short-term trend that incorporates the major economic events that transpired within the last 5 to 6 years. Since the statewide update requires a 28-year forecast (2012-2040), each of the forecasts reviewed were compared to both 32-year and 11-year historical period annual average percent changes to determine whether the forecasts were reasonable.

The public data sources published by the State were not used in developing a consensus forecast due to the absence of industry-specific data for GSP and employment. This absence of industry- and region-specific data limited comparison with the other forecasts to only the state-level, making it difficult to identify causes for the major variance between these and other forecasts. Thus, they are presented for macro-level comparison only.

As part of their transportation planning responsibilities, each of Georgia's MPOs develop their own long-term employment and population forecasts. As a check, the forecast chosen for the SWTP/SSTP was compared to the aggregate MPO forecast. This comparison showed that the growth rate of the MPOs is comparable to the aggregate of their component counties taken from the most recent Economy.com forecasts and in most cases presents similar average growth projections. Under further examination, it was learned that many of the MPOs utilized Economy.com as their primary source for their regional forecasts. Thus, the concurrence of these forecasts makes sense.

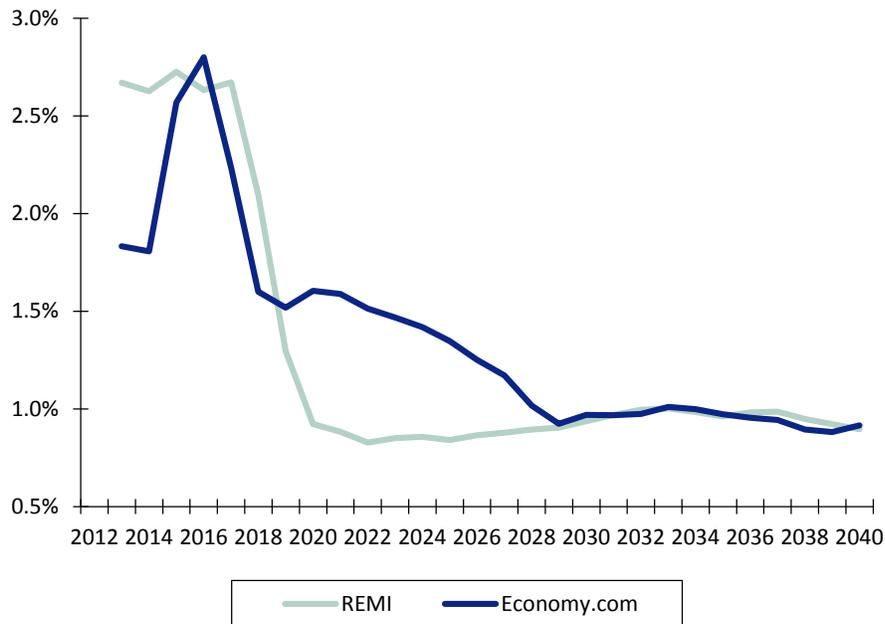
The Economy.com forecast provides the most current data (released August 2013) and boasts a robust forecasting capability. However, the Economy.com data is not the underlying forecast data used in the Georgia Statewide Travel Demand Model, which is used to assess all transportation projects by GDOT. As such, this forecast will not be used in the SWTP/SSTP to update overall travel demand, but will be used in the freight demand analysis to update commodity forecasts in Georgia since it offers county-level data. A comparison of the Economy.com and the REMI forecasts show almost identical long-term trends. Figures 3.1, 3.2, and 3.3 compare the forecasted annual percent change by major economic indicator for the REMI and Economy.com forecasts.

**Figure 3.1 GSP Annual Percent Change Comparison
2012-2040**



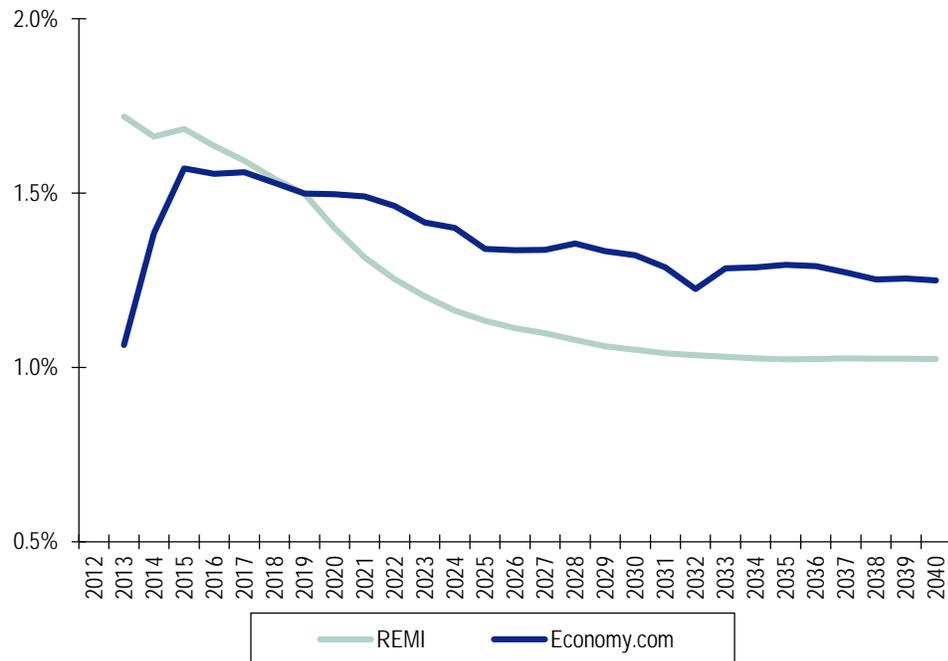
Source: REMI, Economy.com, and Cambridge Systematics, Inc.

**Figure 3.2 Employment Annual Percent Change Comparison
2012-2040**



Source: REMI, Economy.com, and Cambridge Systematics, Inc.

**Figure 3.3 Population Annual Percent Change Comparison
2012-2040**



Source: REMI, Economy.com, and Cambridge Systematics, Inc.

The REMI forecast is the more conservative of the two private forecasts, with annual growth rates well below those of Economy.com in the shorter term. However, in the longer term, with the exception of population, the forecasts converge near the 2030 timeframe with very similar forecasts out to 2040. Population is the exception as REMI projects annual population growth to drop to almost 1 percent by 2030 whereas Economy.com is slightly higher at around 1.25 percent. The REMI forecast anticipates a general decline in population growth that is mostly driven by a larger exit of working age population than the number of international and domestic migrants expected to move into Georgia.

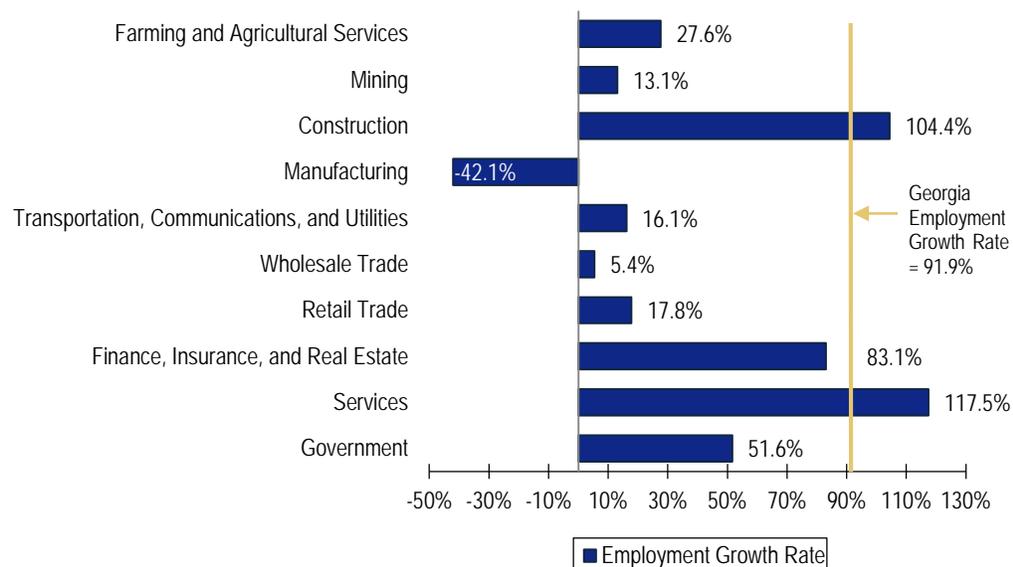
A cross-check of all forecast data sources, public and private, revealed that the REMI forecast published in 2011 provides the most relevant and appropriate forecast for the SWTP/SSTP. It meets all five evaluation factors and the forecast deviation between REMI and the Economy.com forecast is minimal.

4.0 Statewide Forecast in Detail

The recommended economic forecast for use in the SWTP/SSTP is the REMI 2011 forecast for the 2012 to 2040 period. This forecast is used to develop population, employment, and GSP by industry – all key drivers for the Georgia Statewide Transportation Model.

Employment. Several major industry employment trends already taking place today in Georgia are expected to continue over the next 30 years. Job growth will continue to be dominated by the services sector which includes business and professional services occupations (e.g., engineering, architecture, administrative, and managerial), healthcare, recreation, and education, as shown in Figure 4.1. Manufacturing, due to increasing competition from abroad and increased productivity overseas, is projected to continue its decline of recent years, with a drop of 42 percent between 2000 and 2040. A decline in manufacturing employment, however, does not necessarily equate to a decline in output as domestic manufacturers continue to implement labor saving technologies to maintain current, or to improve, levels of productivity. Conversely, services are projected to experience the most robust growth, increasing a total of 117.5 percent over the same forty year period.

Figure 4.1 Georgia Employment Growth Forecast by Industry
2000-2040

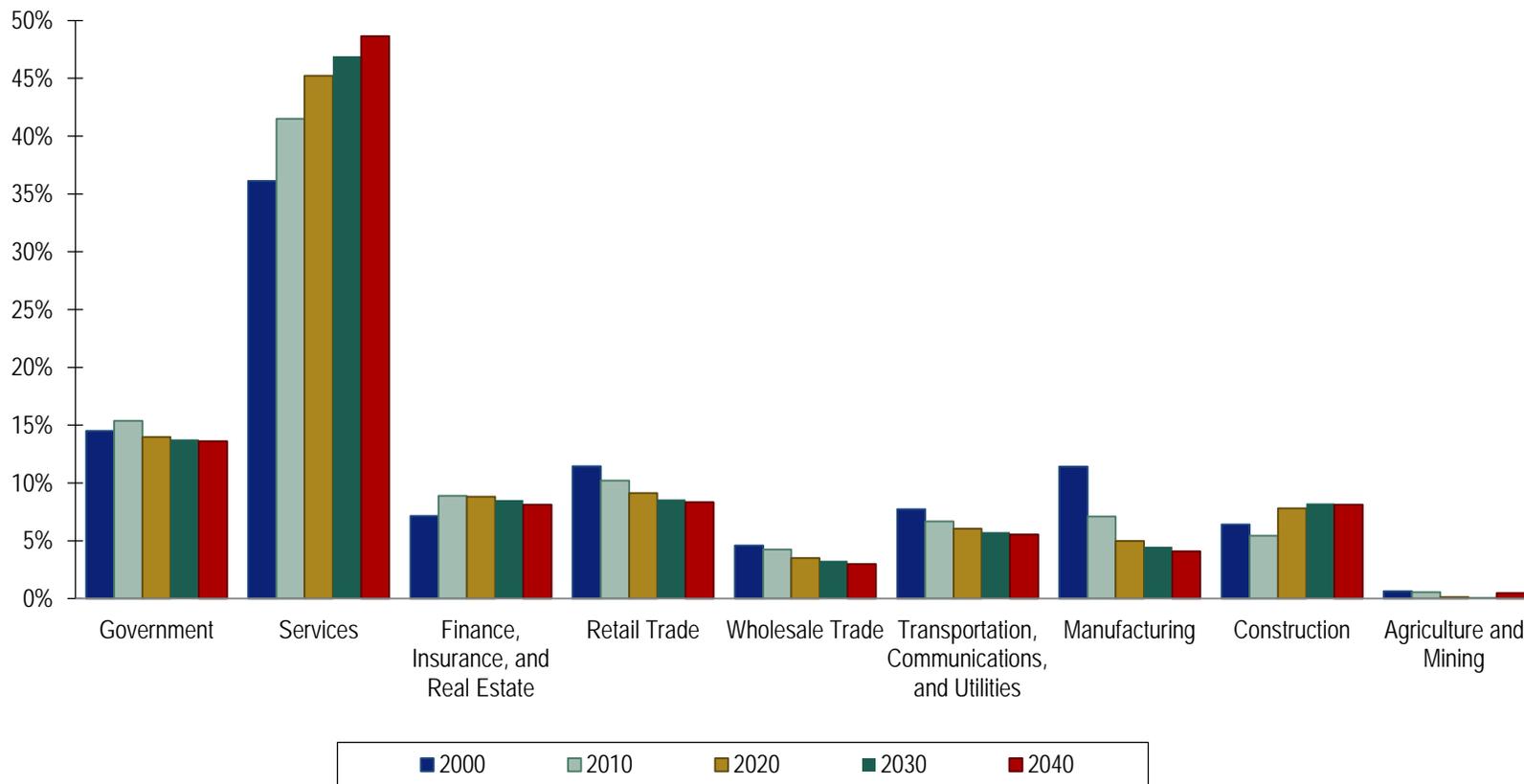


Source: REMI and Cambridge Systematics, Inc.

The long-term decline in manufacturing and the upswing in the services sector can be clearly seen in Figure 4.2, which traces employment shares by major industry

sector by decade between 2000 to 2040. The services and construction industries are the only two economic sectors that are projected to have an increasing share of total statewide employment, with the others experiencing either declines or minimal changes. However, agriculture and mining are forecast to make a small comeback in the 2030 and 2040 time period due to the anticipated uptick in demand for higher quality food grade crops throughout the U.S., and in mineral deposits.

Figure 4.2 Georgia Employment Shares by Industry
2000-2040

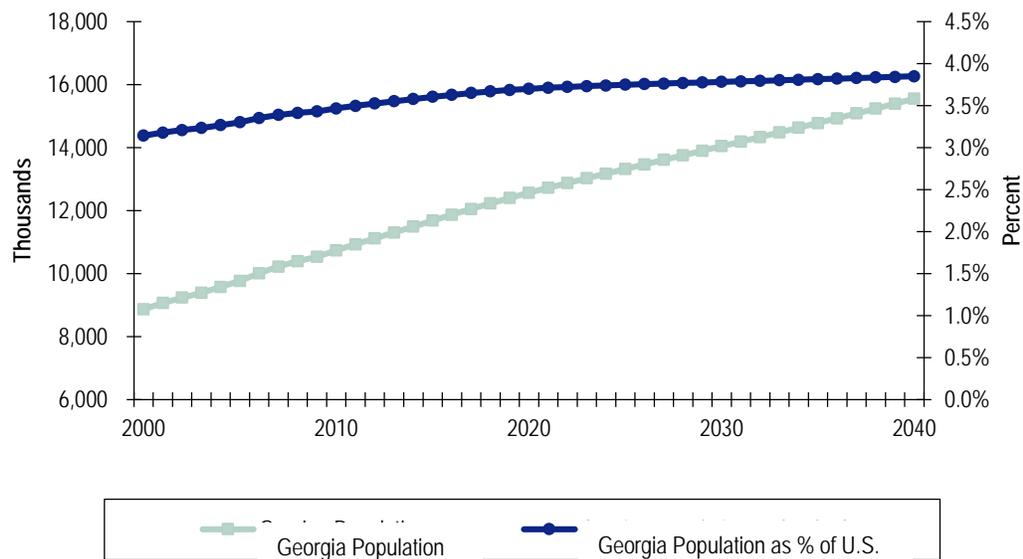


Source: REMI and Cambridge Systematics, Inc.

The construction industry is anticipated to grow in Georgia as commercial and residential structures are needed to meet increasing demands resulting from the forecasted growth in employment. Construction already is a noteworthy industry in Georgia, second only to services, and looks to continue to be a major sector in the future.

Population. Georgia ranks among the faster growing states demographically and is adding people at a higher rate than the national average of 1.1 percent between 1990 and 2010. Population growth did slow during the recent recession, but continued despite the decline in employment. However, the State still attracts people as a key destination in the South, and one of the fastest growing regions in the country. Although growth is expected to taper in the long run, Georgia will continue to grow faster than the national average (Figure 4.3). The State’s transportation system will accordingly need to grow and adapt to accommodate the needs of residents, retirees, and workers, which by 2040 will reach over 15.6 million people.

Figure 4.3 Georgia Population Forecast
2000-2040

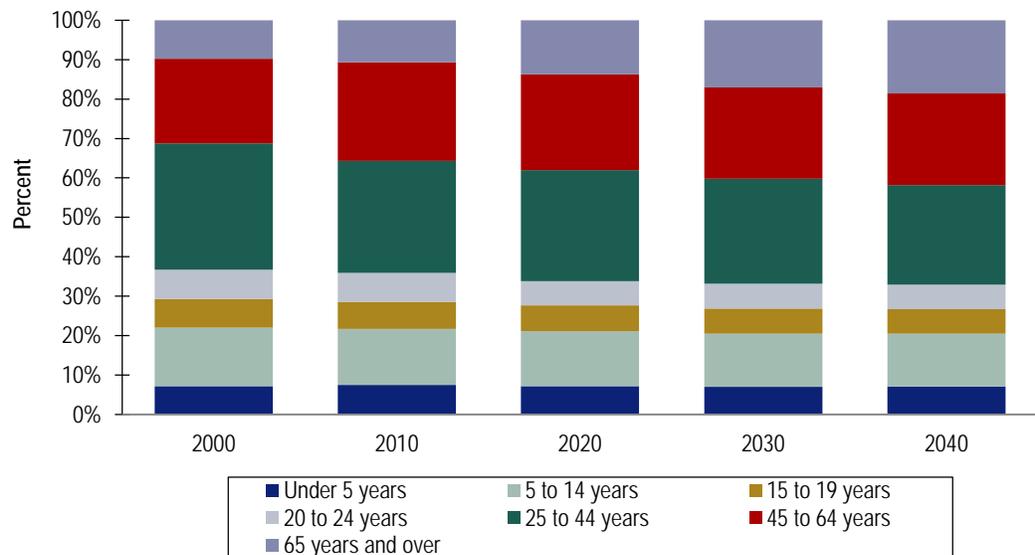


Source: REMI and Cambridge Systematics, Inc.

Along with strong population growth, the age distribution of Georgia’s population will change as well over the next 30 years. As the Baby Boom generation retires, many will move to the south and Georgia could see a significant increase in the number of residents age 65 and older. As Figure 4.4 shows, the share of Georgia’s population that is 65 years and older is projected to nearly double from 10 percent to 19 percent between 2000 and

2040. The share of population that is working age (20-64 years)⁷ is expected to decrease from about 61 percent to only 55 percent in the same period. This shift in population age cohorts will have implications for transportation demand. Traditionally, people aged 20-64 give rise the greatest transportation demand so as those age groups decline, so will the demand for transportation. In addition to decreased demand, one can also expect changes in modal demand. For example, the younger working age population under 30, particularly in urban areas, have stronger preferences for alternative transportation modes including public transportation, walk, and bicycling, relative to previous generations.

Figure 4.4 Percentage of Georgia Population by Age Group 1990-2040



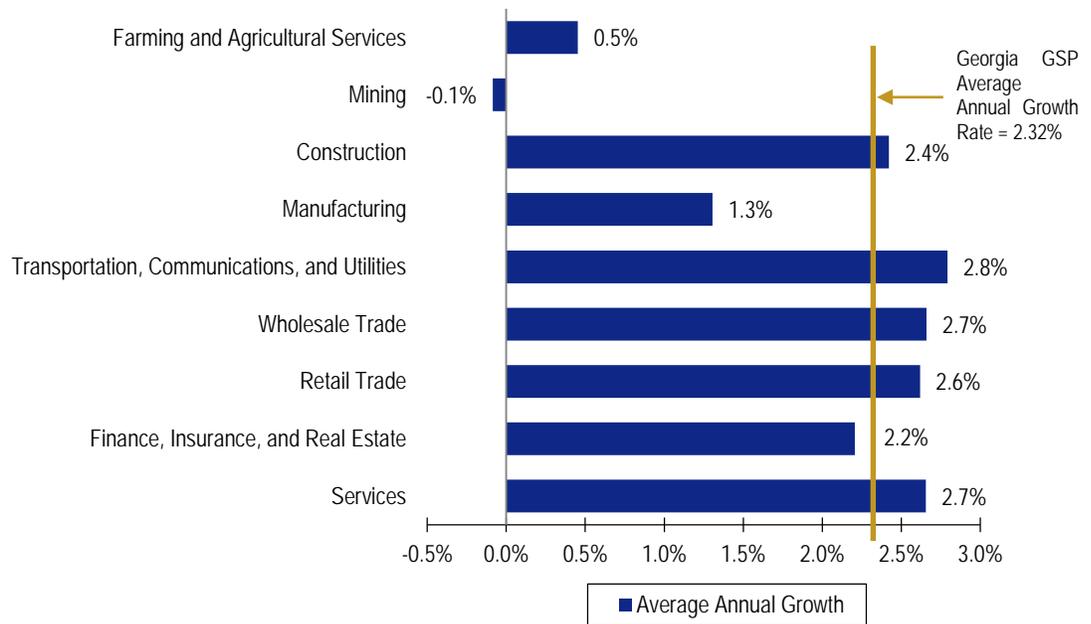
Source: REMI and Cambridge Systematics, Inc.

Gross State Product. The pace of Georgia’s economic growth is a key determinant of transportation demand as higher economic growth is tied to the increased production of goods and services. This increase in production puts a greater demand on Georgia’s freight transportation infrastructure to support the expansion in key industries such as manufacturing, construction, trade and transportation, agriculture, and retail.

Taking into account the recent recession, the State’s overall average annual growth between 2000 and 2040 (Figure 4.5) is expected to be 2.3 percent. Most notable is the high growth expected in the transportation, communications, and utility (TCU) industries, which slightly exceeds expected growth in services. This clearly indicates Georgia’s continued ability to attract and maintain its competitive advantage with large broadcasting- and transportation-related industries.

⁷ Standard definition of working age population as used in the REMI model.

Figure 4.5 Georgia Average Annual GSP Growth Forecast by Industry 2000-2040



Source: REMI and Cambridge Systematics, Inc.

The services and finance, insurance, and real estate (FIRE) industries will continue to account for the largest shares of the economy, as shown in Figure 4.6. Following this trend since the 2000s, over 20 percent of GSP is attributed to each of these two industries, while gaining shares over time. The high contribution to GSP from the services sector is to be expected to continue over the long run given the anticipated growth in population in Georgia. A growing and aging population will demand more services, especially those in health care and social assistance programs. The relatively lower concentration of employment in the FIRE industries relative to the contribution to GSP is not surprising given the higher productivity expected in those industries. The government sector and manufacturing are anticipated to continue to contract over time slowly reducing their contribution to GSP, with the government sector exhibiting the largest decrease between 2000 and 2040.

Figure 4.6 GSP Shares by Industry
2000-2040



Source: REMI and Cambridge Systematics, Inc.

5.0 Summary of Economy.com Forecast

Freight transportation demand is driven by a state's demographic and industrial structure. As such, the economic future of Georgia and the success of its major industries are intertwined with the capabilities of the State's freight transportation network. The capacity, accessibility, efficiency, and reliability of this transportation system will be a key contributor to economic competitiveness, enabling Georgia's industries to grow. This growth is determined by the relative success in future economic growth as it drives the demand for freight-related industrial services, which in turn will lead to improved employment levels in a state hard hit by the recession.

Since the economic forecast provided by Economy.com is the most recent and provides county-level data, this forecast is being used to verify and adjust the U.S. Federal Highway Administration's Freight Analysis Framework (FAF) forecasts. The freight task will cross-check the anticipated growth in employment, population, and GSP between 2012 and 2040 with the commodity forecast provided in FAF, and adjustments will be made as necessary.

Table 5.1 presents the historical and forecast employment growth in the freight-intensive industries. These industries, which primarily consist of manufacturing, agricultural production and food products, and mining, are forecast to continue to decline going forward from 2010 to 2040. Some manufacturing growth is captured within the miscellaneous manufacturing industry categories, which include industries such as petroleum and coal products manufacturing; transportation equipment manufacturing; and medical equipment manufacturing.

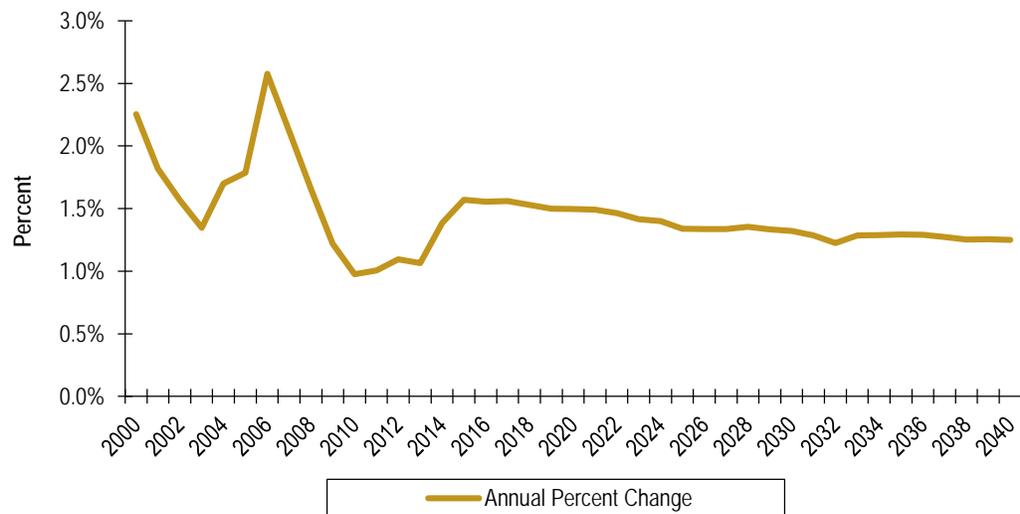
Table 5.1 Employment by Freight Dependent Industries (1990-2040)

Employment by Industry (thousands)	1990	2000	2010	2020	2030	2040	Annual Percent Change (1990-2010)	Annual Percent Change (2010-2040)
Freight Related								
Computer and Electronic Products	37	42	21	21	19	16	-2.6%	-1.0%
Machinery Manufacturing	25	30	19	21	19	17	-1.5%	-0.3%
Food Products	53	67	62	65	62	56	0.8%	-0.3%
Transportation Equipment	36	50	37	43	40	36	0.2%	-0.2%
Miscellaneous Manufacturing	236	298	214	246	278	310	-0.5%	1.2%
Plastics and Rubber Products	19	26	19	20	18	16	0.0%	-0.5%
Nonmetallic Mineral Products	18	20	15	14	14	14	-0.9%	-0.3%
Paper Manufacturing	33	29	19	18	15	13	-2.8%	-1.3%
Wood Products	23	30	15	16	15	14	-2.3%	-0.1%
Chemical Manufacturing	21	24	19	20	18	16	-0.4%	-0.6%
Furniture and Related Products	14	19	14	14	13	13	0.0%	-0.2%
Mining	9	8	5	4	4	4	-3.2%	-0.4%
Forestry and Logging	7	6	4	4	4	4	-2.1%	-0.4%
Beverage and Tobacco Products	7	7	3	4	4	4	-3.5%	0.4%
Textiles and Leather	164	113	51	44	33	26	-5.6%	-2.3%
Primary Metal Manufacturing	11	8	6	7	6	5	-3.2%	-0.7%
Non-Freight Related								
Non-Goods Producing Industries	1,763	2,583	2,638	3,341	3,919	4,390	2.0%	1.7%
Government	552	617	699	728	770	821	1.2%	0.5%

Source: Economy.com and Cambridge Systematics, Inc.

Population is another factor that puts demand on the transportation network in Georgia, not only by those driving their personal cars but indirectly as goods and services are transported for consumption. Population growth, according to Economy.com, will flatten out and remain at or close to 1.25 percent annually between 2010 and 2040, as seen in Figure 5.1.

**Figure 5.1 Economy.com Georgia Population Forecast
2000-2040**



Source: Economy.com and Cambridge Systematics, Inc.

Georgia is known as a state with good quality roadways including bridges and pavement, which is a major selling point in attracting new businesses to the State.⁸ The State boasts the world's busiest airport,⁹ Hartsfield-Jackson Atlanta International Airport (HJIA), as well as the nation's fourth largest container port,¹⁰ the Port of Savannah. To accommodate Georgia's economy, the freight-related industries rely on the efficient movement of goods to keep costs down, customers supplied, and ultimately to maintain competitiveness domestically as well as globally. Although most industries reliant on freight transportation are on a decline, there is some rebound potential over the long run. As seen in Table 5.2, most growth is expected to take place in the non-directly freight-related industries such as services. However, one of the growth industries in Georgia is expected to be mining which is very transportation dependent, with an average annual percent growth rate between 2010 and 2040 of almost seven percent. While a small

⁸ Georgia Statewide Transportation Plan/Statewide Strategic Transportation Plan, Technical Memorandum 3, Chapter 1.

⁹ Airports Council International 2013 Statistics.

¹⁰ U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics.

overall employment category, it is expected to contribute more to Georgia GSP over the next 30 years than it did in the previous 20 years.

Table 5.2 Gross State Product by Freight Dependent Industries as Percent of Total (1990-2040)

Gross State Product by Industry as Percent of Total	1990	2000	2010	2020	2030	2040	Annual Percent Change (1990-2010)	Annual Percent Change (2010-2040)
Freight Related								
Computer and Electronic Products	2.4%	2.3%	1.3%	1.4%	1.3%	1.3%	-2.9%	-0.1%
Machinery Manufacturing	0.5%	0.5%	0.5%	0.4%	0.4%	0.3%	-0.4%	-1.6%
Food Products	0.4%	0.4%	0.2%	0.2%	0.1%	0.1%	-4.8%	-2.2%
Transportation Equipment	0.3%	0.3%	0.2%	0.2%	0.1%	0.1%	-2.6%	-4.0%
Miscellaneous Manufacturing	15.8%	16.4%	13.1%	13.1%	13.1%	12.3%	-0.9%	-0.2%
Plastics and Rubber Products	0.7%	0.5%	0.3%	0.3%	0.4%	0.4%	-4.0%	0.6%
Nonmetallic Mineral Products	0.3%	0.3%	0.1%	0.2%	0.2%	0.1%	-5.7%	1.0%
Paper Manufacturing	0.6%	0.5%	0.2%	0.2%	0.1%	0.1%	-3.9%	-4.8%
Wood Products	1.8%	1.3%	0.8%	0.7%	0.5%	0.3%	-4.0%	-3.1%
Chemical Manufacturing	0.6%	0.6%	0.6%	0.7%	0.7%	0.7%	-0.4%	0.9%
Furniture and Related Products	0.5%	0.3%	0.3%	0.3%	0.3%	0.3%	-3.1%	-0.2%
Mining	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-2.1%	6.9%
Forestry and Logging	1.6%	1.0%	0.9%	0.6%	0.5%	0.4%	-2.7%	-2.9%
Beverage and Tobacco Products	1.5%	0.9%	0.4%	0.3%	0.2%	0.1%	-6.4%	-4.8%
Textiles and Leather	2.5%	1.5%	0.9%	0.7%	0.4%	0.3%	-4.7%	-4.2%
Primary Metal Manufacturing	0.7%	0.7%	0.5%	0.6%	0.7%	0.8%	-2.0%	1.6%
Non-Freight Related								
Non-Goods Producing Industries	56.5%	61.8%	66.6%	69.6%	72.2%	75.2%	0.8%	0.4%
Private Household Workers	0.3%	0.2%	0.2%	0.2%	0.3%	0.3%	-2.7%	1.8%
Government	13.0%	10.5%	13.0%	10.4%	8.7%	7.1%	0.0%	-2.0%

Source: Economy.com and Cambridge Systematics, Inc.