

# State of the Workforce Report IV: Jefferson County

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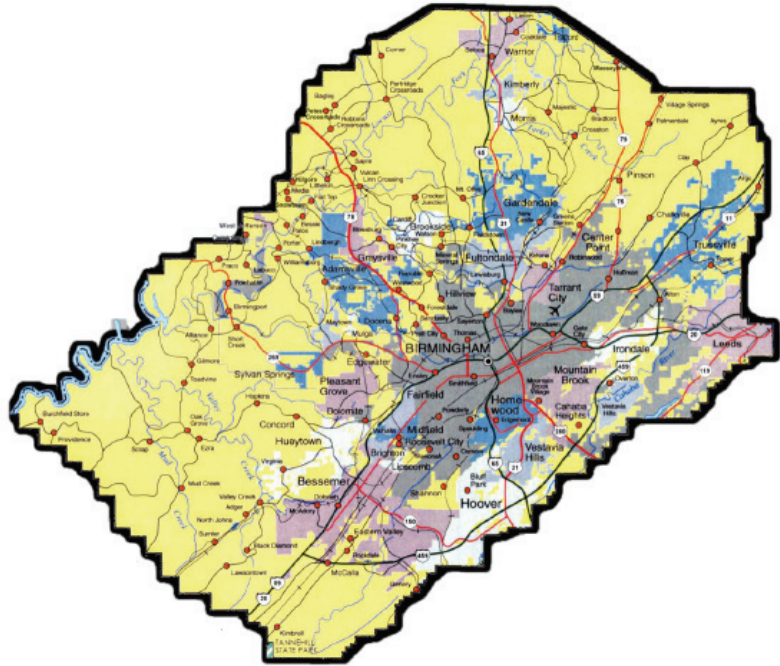
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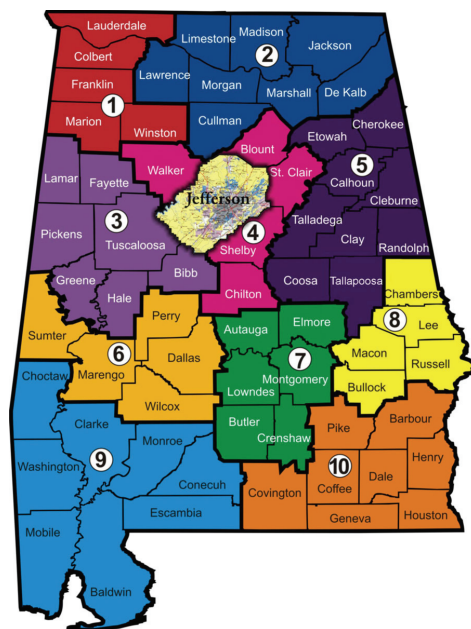
October 2009

Center for Business and Economic Research  
University Center for Economic Development  
Institute for Social Science Research

**THE UNIVERSITY OF ALABAMA**



# State of the Workforce Report IV: Jefferson County



October 2009

by

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## Summary

- This report analyzes workforce supply and demand issues using available metrics of workforce characteristics for Jefferson County, Alabama and presents implications and recommendations.
- Jefferson County had an 8.4 percent unemployment rate in May 2009, with 25,417 unemployed. An underemployment rate of 25.2 percent for 2009 means that the county has a 95,547-strong available labor pool that includes 70,130 underemployed workers who are looking for better jobs and are willing to commute farther and longer for such jobs.
- Congestion, which can slow economic development, is worsening. From 2000 to 2006, net in-commuting fell from 62,621 to 53,003, but the number of in- and out-commuters increased 72 percent to 199,543. This, combined with considerable commuting within the county, suggests a strong need for constant maintenance and development of transportation infrastructure and systems to ensure that the movement of workers and goods is not impeded.
- By sector, the top five employers in the county are health care and social assistance; retail trade; manufacturing; accommodation and food services; and finance and insurance. In third quarter 2008 these five industries provided 184,909 jobs, 49.5 percent of the county total. Two of these leading employers paid more than the county's \$3,792 average monthly wage. Economic development should continue to diversify and strengthen the county's economy by retaining, expanding, and attracting more high-wage providing industries; workforce development should focus on preparing workers for these industries.
- On average 18,096 jobs were created per quarter from second quarter 2001 to third quarter 2008; quarterly net job flows averaged 1,122. Job creation is the number of new jobs that are created either by new businesses or through expansion of existing firms. Net job flows reflect the difference between current and previous employment at all businesses.
- The top five high-demand occupations are Registered Nurses; Customer Service Representatives; Accountants and Auditors; Home Health Aides; and Management Analysts.
- The top five fast-growing occupations are Medical Scientists, Except Epidemiologists; Biological Technicians; Network Systems and Data Communication Analysts; Home Health Aides; and Industrial Engineers.
- The top 50 high-earning occupations are in management, health, engineering, postsecondary education, computer, legal, and science fields and have a minimum salary of \$78,764. Eight of the top 10 are health occupations.
- Of the top 40 high-demand, the top 38 fast-growing, and 50 high-earning occupations, two—Management Analysts and Personal Financial Advisors—belong to all three categories; seven are in high-demand and high-earning and 25 are both high-demand and fast-growing.

- Of the county's 856 occupations and occupational categories, 95 are expected to decline over the 2006 to 2016 period, with 25 sharply declining by at least 7 percent and losing a minimum of 30 jobs each. Education and training for these 25 occupations should slow accordingly.
- Skill and education requirements for jobs keep rising. Educational and training requirements of high-demand, fast-growing, and high-earning occupations demonstrate the importance of education in developing the future workforce. In the future, more jobs will require postsecondary education and training at a minimum.
- The importance of basic skills generally and for high-demand, high-growth, and high-earning jobs indicates a strong need for training in these skills. For Jefferson County the pace of training needs to increase for systems, complex problem solving, and social skills. The scale of training should be raised for basic and social skills. Ideally, all high school graduates should possess basic skills so that postsecondary and higher education can focus on other and more complex skills. Employers should be an integral part of planning for training as they can help identify future skill needs and any existing gaps.
- Job growth is expected to exceed population and labor force growth through 2016 and 2025. From a 2006 base, worker shortfalls of 22,440 and 101,624 are estimated by 2016 and 2025, respectively. Filling these jobs is likely to increase in-commuting and worsen congestion. A focus on both worker skills and the expected shortfalls, especially for critical occupations, must be a top priority through 2025. Strategies to address skill needs and worker shortfalls could include: (1) improvements in education and its funding; (2) continuation and enhancement of programs to assess, retrain, and place dislocated workers; (3) focus on hard-to-serve populations (e.g. out-of-school youth); (4) lowering the high school dropout rate; (5) use of economic opportunities to attract new residents; (6) facilitation of in-commuting; and (7) encouragement of older worker participation in the labor force.
- Improving education is important because (i) a highly educated and productive workforce is a critical economic development asset, (ii) productivity rises with education, (iii) educated people are more likely to work, and (iv) it yields high private and social rates of return on investment. Workforce development must view all of education and other programs (e.g. adult education, career technical training, worker retraining, career readiness, etc.) as one system. Funding to support workforce development may require tax reform at state and local levels and should provide for flexibility as workforce needs change over time and demand different priorities. Publicizing both private and public returns to education can encourage individuals to raise their own educational attainment levels, while also promoting public and legislative support for education.
- Higher incomes that come with improved educational attainment and work skills will help to increase personal income for the county as well as raise additional local (county and city) tax revenues. This is important, especially for a county that has low or declining population and labor force growth rates.
- Together, workforce development and economic development can build a strong, well-diversified Jefferson County economy. Indeed, one cannot achieve success without the other.

## Workforce Supply

### Labor Force Activity

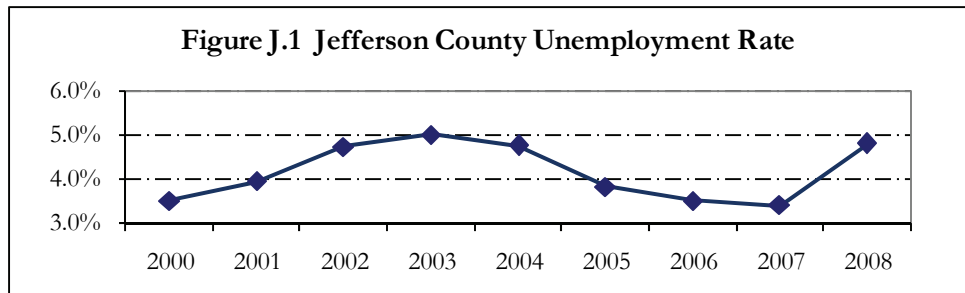
The labor force includes all persons in the civilian noninstitutional population who are age 16 and over and who have a job or are actively looking for one. Typically, those who have no job and are not looking for one are not included (e.g. students, retirees, the disabled, and discouraged workers). Table J.1 shows labor force information on Jefferson County for 2008 and for May 2009.<sup>1</sup> The recession that began in December 2007 discouraged some workers but sharply increased the number of unemployed and raised the county unemployment rate from 4.8 percent for 2008 to 8.4 percent in May 2009, slightly below Alabama's 8.8 percent.

**Table J.1 Jefferson County Labor Force Information**

	<b>2008</b>			
	Labor Force	Employed	Unemployed	Rate (%)
Jefferson County	311,589	296,643	14,946	4.8
Alabama	2,162,479	2,053,502	108,977	5.0
United States	154,287,000	145,362,000	8,924,000	5.8
	<b>May 2009</b>			
	Labor Force	Employed	Unemployed	Rate (%)
Jefferson County	303,822	278,405	25,417	8.4
Alabama	2,124,766	1,938,686	186,081	8.8
United States	153,830,000	140,265,000	13,565,000	8.8

Source: Alabama Department of Industrial Relations and U.S. Bureau of Labor Statistics.

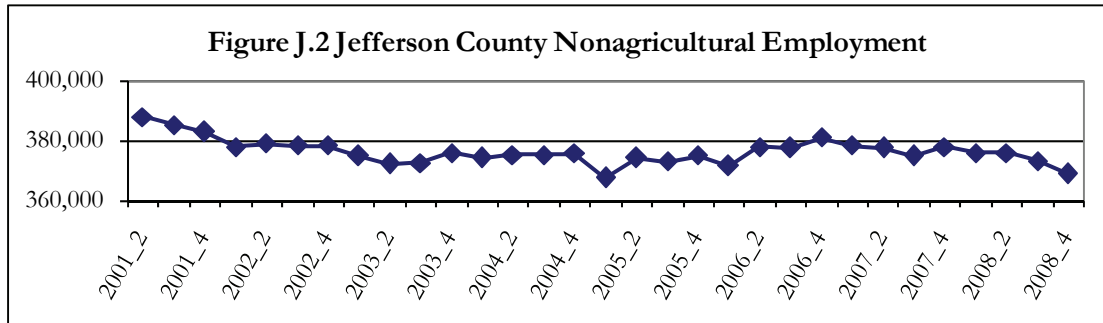
Annual unemployment rates for 2000 to 2008 are shown in Figure J.1. The county's unemployment rose from 3.5 percent in 2000 to 5.0 percent in 2003 primarily because of the 2001 national economic recession. Employment gains since 2005 resulting from successful economic development efforts at both state and local levels took unemployment to a record low 3.4 percent in 2007. However, year-to-date monthly labor force data point to higher county unemployment rates than the 4.8 percent of 2008 for 2009 and a few years afterward because of the most recent recession.



Source: Alabama Department of Industrial Relations.

<sup>1</sup> Alabama labor force information is available from the Labor Market Information (LMI) Division of the Alabama Department of Industrial Relations. LMI compiles data in cooperation with the U.S. Bureau of Labor Statistics.

Nonagricultural employment, which represents jobs located in the county, averaged 376,243 quarterly from the second quarter of 2001 to the fourth quarter of 2008 (Figure J.2). The number of jobs has been declining since the fourth quarter of 2007.



Source: Alabama Department of Industrial Relations and U.S. Census Bureau.

Table J.2 shows worker distribution by age in Jefferson County for the third quarter of 2008. The county's workforce is slightly older than the state's; workers age 45 and over are 40.6 percent of the nonagricultural employment versus 39.9 percent for the state. Those who are age 65 and over constitute 3.7 percent of nonagricultural employment, matching Alabama. Labor force participation of younger residents must increase to meet long term occupational projections for growth and replacement. Otherwise older workers may have to work longer.

**Table J.2 Workers by Age Group Q3 2008**

	Nonagricultural Employment	
	Number	Percent
14-18	9,637	2.6
19-24	42,513	11.4
25-34	84,841	22.7
35-44	84,862	22.7
45-54	86,129	23.1
55-64	51,574	13.8
65+	13,775	3.7
45 and over total	151,478	40.6
Total all ages	373,330	100.0

Note: Rounding errors may be present. Nonagricultural employment is by place of work not residence.

Source: U.S. Census Bureau, Local Employment Dynamics Program.

### Commuting Patterns

From 2000 to 2006, net in-commuting of workers to Jefferson County fell from 62,621 to 53,003, but there was a 71.7 percent increase to 199,543 in the number of people who commuted into and out of the county for work (Table J.3). Average commute time and distance are up slightly in 2009, many more people are traveling to work, and there is considerable commuting within the county. All of this suggests that congestion, which can impede the mobility of workers and goods and delay or slow economic development, is worsening. Thus, county transportation infrastructure and

systems must be maintained and developed to ensure that the flow of goods and movement of workers are not interrupted.

**Table J.3 Commuting in Jefferson County**

Year	Inflow		Outflow	
	Number	Percent	Number	Percent
2000	89,409	100.0	26,788	100.0
2006	126,273	100.0	73,270	100.0
Percent of workers				
<b>Average commute time (one-way)</b>	<b>2004</b>	<b>2005/2006</b>	<b>2008</b>	<b>2009</b>
Less than 20 minutes	53.0	45.7	50.2	44.7
20 to 40 minutes	35.4	39.0	37.2	43.2
40 minutes to an hour	7.2	10.8	7.2	7.5
More than an hour	0.9	0.7	1.7	1.5
<b>Average commute distance (one-way)</b>	<b>2004</b>	<b>2005/2006</b>	<b>2008</b>	<b>2009</b>
Less than 10 miles	40.6	37.5	42.9	39.2
10 to 25 miles	39.1	43.9	39.0	44.6
25 to 45 miles	12.2	10.0	12.4	12.8
More than 45 miles	3.2	3.3	4.3	2.3

Note: Rounding errors may be present.

Source: U.S. Census Bureau; Alabama Department of Industrial Relations; and Center for Business and Economic Research, The University of Alabama.

## Population

The Jefferson County population estimate of 659,503 for 2008 is 0.4 percent less than was recorded for 2000 (Table J.4). The county's population is projected to be slightly above its 2000 level in 2010.

**Table J.4 Jefferson County Population**

	1990 Census	2000 Census	2008 Estimate	% Change 2000-2008	2010 Projection	% Change 2000-2010
Jefferson County	651,525	662,047	659,503	-0.4	662,603	0.1
Alabama	4,040,587	4,447,100	4,661,900	4.8	4,768,769	7.2
U.S.	248,709,873	281,421,906	304,059,724	8.0	310,232,863	10.2

Source: Center for Business and Economic Research, The University of Alabama and U.S. Census Bureau.

Table J.5 shows population counts, estimates, and projections by age group. The population aged 65 and over will grow rapidly after 2010, with the first of the baby boom generation turning 65 in 2011. Consequently, growth of the prime working age group (20-64) and youth (0-19) will lag that of the total population. This poses a challenge for workforce development. Employment growth is expected to outpace labor force growth in the medium to long term and together with significant in-commuting presents communities with the opportunity to attract new residents. However, growing the population may require investment in amenities and infrastructure.

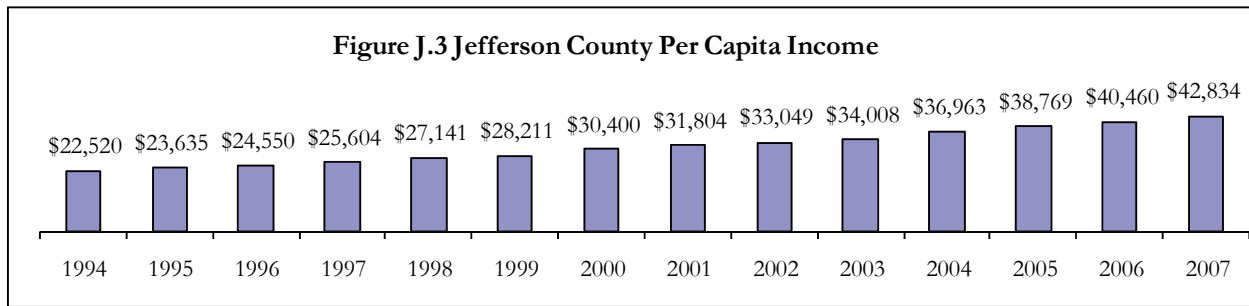
**Table J.5 Population by Age Group (2000-2006) and Projections**

Age Group	2000	2006	2016	2025
0-19	182,231	177,020	172,766	176,220
20-24	45,580	45,753	45,571	43,939
25-29	47,399	45,918	47,217	43,421
30-34	45,466	46,375	46,512	47,182
35-39	50,592	44,351	45,540	47,416
40-44	53,081	47,696	45,221	45,831
45-49	49,873	50,264	42,760	44,365
50-54	41,596	47,332	44,922	43,247
55-59	30,607	39,770	45,981	39,286
60-64	25,337	29,395	41,876	41,171
65+	90,285	85,529	95,753	118,874
<b>20-64 Total</b>	<b>389,531</b>	<b>396,853</b>	<b>405,600</b>	<b>395,858</b>
<b>Total Population</b>	<b>662,047</b>	<b>659,403</b>	<b>674,119</b>	<b>690,952</b>
<i>Change from 2006</i>				
0-19			-2.4%	-0.5%
20-64			2.2%	-0.3%
Total Population			2.2%	4.8%

Source: Center for Business and Economic Research, The University of Alabama and U.S. Census Bureau.

### Per Capita Income

Per capita income (PCI) in Jefferson County was at \$42,834 in 2007 (Figure J.3), up 90 percent from 1994, and \$10,415 or 32 percent above the state average of \$32,419.

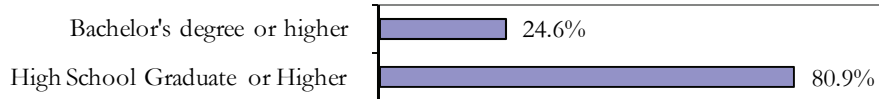


Source: U.S. Bureau of Economic Analysis and Center for Business and Economic Research, The University of Alabama.

### Educational Attainment

Educational attainment in 2000 of Jefferson County residents who were 25 years old and over is shown in Figure J.4 and Table J.6. Almost 81 percent graduated from high school and 24.6 percent held a bachelor's or higher degree. Educational attainment is important as skills rise with education and high-wage jobs for the 21st century demand more skill sets.

**Figure J.4 Jefferson County Educational Attainment**



**Table J.6 Educational Attainment in 2000, Population 25 Years and Over**

	<u>Jefferson County</u>
Total	434,158
No schooling completed	4,227
Nursery to 4th grade	1,708
5th and 6th grade	5,904
7th and 8th grade	12,461
9th grade	11,360
10th grade	13,932
11th grade	14,635
12th grade, no diploma	18,723
High school graduate/equivalent	121,233
Some college, less than 1 year	27,914
Some college, 1+ years, no degree	70,628
Associate degree	24,600
Bachelor's degree	68,866
Master's degree	23,560
Professional school degree	10,532
Doctorate degree	3,875

Source: Center for Business and Economic Research, The University of Alabama and U.S. Census Bureau.

### **Underemployment and Available Labor**

Labor force data are often limited to information on the employed and the unemployed that is available from government sources. However, this information is not complete from the perspective of employers. New or expanding employers are also interested in underemployment because current workers are potential employees. In fact, experience requirements in job ads are evidence that many prospective employers look beyond the unemployed for workers.

Workers in occupations that underutilize their experience, training, and skills are underemployed. These workers might look for other work because their current wages are below what they believe they can earn or because they wish to not be underemployed. Underemployment occurs for various reasons including (i) productivity growth, (ii) spousal employment and income, and (iii) family constraints or personal preferences. Underemployment is unique to areas because of the various contributing factors combined with each area's economic, social, and geographic characteristics.

The existence of underemployment identifies economic potential that is not being realized. It is extremely difficult to measure this economic potential because of uncertainties regarding additional income that the underemployed can bring to an area. It is clear, however, that underemployment provides opportunities for selective job creation and economic growth. A business that needs skills

prevalent among the underemployed could locate in places that have such workers regardless of those areas' unemployment rates. A low unemployment rate, which may falsely suggest limited labor availability, is therefore not a hindrance to the business.

The underemployed present a significant pool of labor because they tend to respond to job opportunities that they believe are better for reasons that include (i) higher income, (ii) more benefits, (iii) superior terms and conditions of employment, and (iv) a better match with skills, training, and experience. The underemployed also create opportunities for entry level workers as they leave lower-paying jobs for better-paying ones. Even if their previously-held positions are lost or not filled (perhaps due to low unemployment or adverse economic conditions), there is economic growth in gaining higher-paying jobs. Such income growth boosts consumption, savings, and tax collections. Quantifying the size of the underemployed is a necessary first step in considering this group for economic development, workforce training, planning, and other purposes. It is important to note that the underemployed can take on more responsibilities and earn more income, but they cannot be counted on to address possible future worker shortages as they are already employed.

Jefferson County had an underemployment rate of 25.2 percent in 2009. Applying this rate to May 2009 labor force data means that 70,130 employed residents were underemployed (Table J.7). Adding the unemployed gives a total available labor pool of 95,547 for the county. This is 3.8 times the number of unemployed and is a more realistic measure of the available labor pool in the county. Prospective employers must be able to offer the underemployed higher wages, better benefits or terms of employment, or some other incentives to induce them to change jobs.

**Table J.7 Underemployed and Available Labor**

	<u>Jefferson County</u>
Labor Force	303,822
Employed	278,405
Underemployment rate	25.2%
Underemployed workers	70,130
Unemployed	25,417
<b>Available labor pool</b>	<b>95,547</b>

Note: Rounding errors may be present. Based on May 2009 labor force data and 2009 underemployment rates.

Source: Center for Business and Economic Research, The University of Alabama and Alabama Department of Industrial Relations.

Underemployment rates for counties, Workforce Development Regions (WDRs), and the state were determined from an extensive survey on the state's workforce. A total of 534 complete responses were obtained from Jefferson County. Nearly half (266 respondents) were employed, of whom 67 stated that they were underemployed. Low wages at available jobs and a lack of job opportunities in their area are the primary reasons given for being underemployed. Ongoing economic development efforts can help in this regard. Nonworkers cite retirement, disability or other health concerns, and a lack of job opportunities in their area as the main reasons for their status. Such workers may become part of the labor force if their problems can be addressed.

A comparison of underemployed workers to the overall workforce in Jefferson County shows that:

- Fewer work full-time and more of the part-timers would like to work full-time.
- The same share (10.5 percent) holds multiple jobs.

- They have less commute time and distance.
- More are administrative support/clerical workers, transportation operators, and laborers.
- They have similar job tenure.
- More are in local government; transportation, communication, or public utilities; and healthcare, business, hotel, restaurant, and household services.
- They earn less.
- Fewer believe their jobs fit well with their education and training, skills, and experience.
- More believe they are qualified for a better job.
- About the same share would leave their current jobs for higher income.
- Roughly the same share is willing to commute farther and longer for a better job.
- Fewer are satisfied with their current jobs.
- More have sought better jobs in the preceding quarter.
- More are willing to train for a better job, particularly if they do not have to share the training costs.
- Slightly fewer are married.
- Fewer are male.
- Their median age, 50, is 1 year older.
- Fewer are Hispanic.
- Fewer are white.
- They have slightly lower educational attainment.

Table J.8 shows the detailed survey results on job satisfaction and willingness to train. Responses for overall job satisfaction as well as various aspects of the job were obtained. In general most of the county's workers (74.4 percent) are satisfied or completely satisfied with their jobs. Workers are most satisfied with the work that they do and least satisfied with their earnings. Slightly more than half (52.3 percent) of underemployed workers are satisfied or completely satisfied with their jobs. The underemployed are also most satisfied with the work that they do, but very dissatisfied with their earnings.

Workers are generally willing to train for a new or better job, with the underemployed being much more willing (75.5 percent vs. 59.8 percent). However, the willingness to train is strongly influenced by who pays for the cost of training. Workers typically do not wish to pay for the training and so their willingness is highest when the cost is fully borne by government and lowest when the trainee must pay the full costs. Underemployed workers are more willing to train for the new or better job when either the government or they themselves pay the full training cost. The results show that workers expect the government to bear at least a part of the training cost. This expectation may result from worker awareness of government workforce programs that provide such assistance.

**Table J.8 2009 Job Satisfaction and Willingness to Train (Percent)**

		<b>Job Satisfaction</b>				
		Completely Dissatisfied	Dissatisfied	Neutral	Satisfied	Completely Satisfied
<b>Employed</b>						
Overall		2.3	3.4	19.6	31.2	43.2
	Earnings	7.1	10.5	24.1	25.9	32.0
	Retention	3.4	6.4	13.5	20.3	55.3
	Work	0.0	2.3	8.7	30.1	58.7
	Hours	1.9	4.5	12.4	24.1	57.1
	Shift	1.5	3.8	8.3	21.1	65.4
	Conditions	2.3	4.9	14.3	29.7	48.9
	Commuting Distance	3.4	4.9	15.4	17.3	59.0
<b>Underemployed</b>						
Overall		7.5	4.5	35.8	23.9	28.4
	Earnings	16.4	16.4	28.4	20.9	17.9
	Retention	7.5	11.9	22.4	11.9	44.8
	Work	0.0	1.5	17.9	34.3	46.3
	Hours	4.5	10.5	13.4	25.4	46.3
	Shift	1.5	9.0	10.5	20.9	58.2
	Conditions	6.0	9.0	23.9	25.4	35.8
	Commuting Distance	3.0	1.5	20.9	11.9	62.7
<b>Willingness to Train</b>						
		Completely Unwilling	Unwilling	Neutral	Willing	Completely Willing
<b>Employed</b>						
For a new or better job		19.5	4.1	16.7	13.6	46.2
	If paid by trainee	35.4	21.4	27.5	9.6	5.1
	If paid by trainee and government	10.1	12.9	29.2	21.4	25.8
	If paid by government	6.2	4.5	7.3	15.7	66.3
<b>Underemployed</b>						
For a new or better job		7.0	1.8	15.8	15.8	59.7
	If paid by trainee	30.2	26.4	22.6	15.1	1.9
	If paid by trainee and government	5.7	9.4	43.4	15.1	26.4
	If paid by government	3.8	0.0	3.8	17.0	75.5

Note: Rounding errors may be present.

Source: Center for Business and Economic Research, The University of Alabama.

## Workforce Demand

### Industry Mix

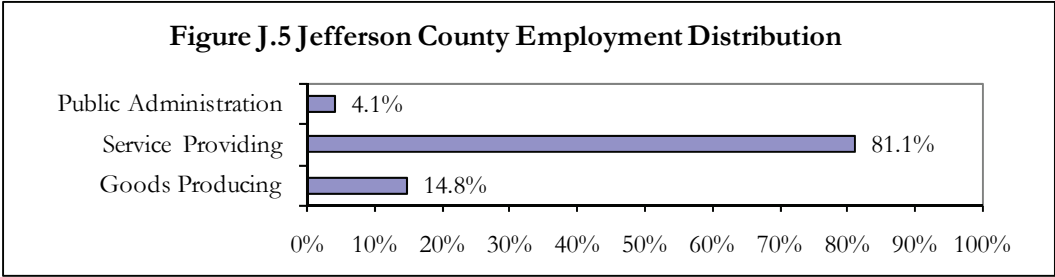
The health care and social assistance sector was the lead employer with 54,025 jobs in the third quarter of 2008 (Table J.9). Rounding out the top five industries by employment are retail trade; manufacturing; accommodation and food services; and finance and insurance. These five industries provided 184,909 jobs, 49.5 percent of the Jefferson County total. The average monthly wage across all industries in the county was \$3,792; two leading employers paid more. New hire monthly earnings averaged \$2,598, about 69 percent of the average monthly wage. The highest average monthly wages were for utilities at \$5,687, mining \$5,508, and professional, scientific, and technical services \$5,126. Accommodation and food services paid the least at \$1,477. Mining had the highest average monthly new hire wages with \$4,739, followed by utilities at \$3,951, and professional, scientific, and technical services \$3,431. Accommodation and food services paid newly hired workers the least, \$1,027.

**Table J.9 Industry Mix (Third Quarter 2008)**

Industry by 2-digit NAICS Code	Total Employment	Share	Rank	Average Monthly Wage	Average Monthly New Hire Earnings
11 Agriculture, Forestry, Fishing and Hunting	161	0.04%	20	\$2,809	\$1,834
21 Mining	1,439	0.39%	19	\$5,508	\$4,739
22 Utilities	6,014	1.61%	16	\$5,687	\$3,951
23 Construction	24,314	6.51%	7	\$4,255	\$3,164
31-33 Manufacturing	29,256	7.84%	3	\$4,702	\$3,358
42 Wholesale Trade	21,912	5.87%	10	\$4,731	\$3,265
44-45 Retail Trade	46,659	12.50%	2	\$2,355	\$1,355
48-49 Transportation and Warehousing	10,469	2.80%	13	\$3,529	\$2,627
51 Information	9,556	2.56%	14	\$4,651	\$3,182
52 Finance and Insurance	26,190	7.02%	5	\$4,821	\$3,357
53 Real Estate and Rental and Leasing	5,909	1.58%	17	\$3,526	\$2,515
54 Professional, Scientific, and Technical Services	22,206	5.95%	9	\$5,126	\$3,431
55 Management of Companies and Enterprises	6,693	1.79%	15	\$4,461	\$2,656
56 Administrative and Support and Waste Management and Remediation Services	23,038	6.17%	8	\$2,277	\$1,647
61 Educational Services	25,557	6.85%	6	\$3,532	\$1,978
62 Health Care and Social Assistance	54,025	14.47%	1	\$3,643	\$2,410
71 Arts, Entertainment, and Recreation	4,120	1.10%	18	\$1,975	\$1,107
72 Accommodation and Food Services	28,779	7.71%	4	\$1,477	\$1,027
81 Other Services (Except Public Administration)	11,637	3.12%	12	\$2,997	\$2,114
92 Public Administration	15,397	4.12%	11	\$3,783	\$2,246
<b>ALL INDUSTRIES</b>	<b>373,331</b>	<b>100.00%</b>		<b>\$3,792</b>	<b>\$2,598</b>

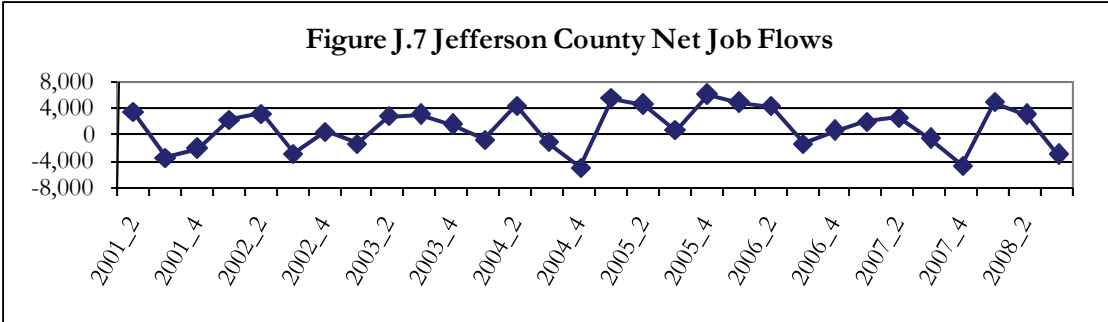
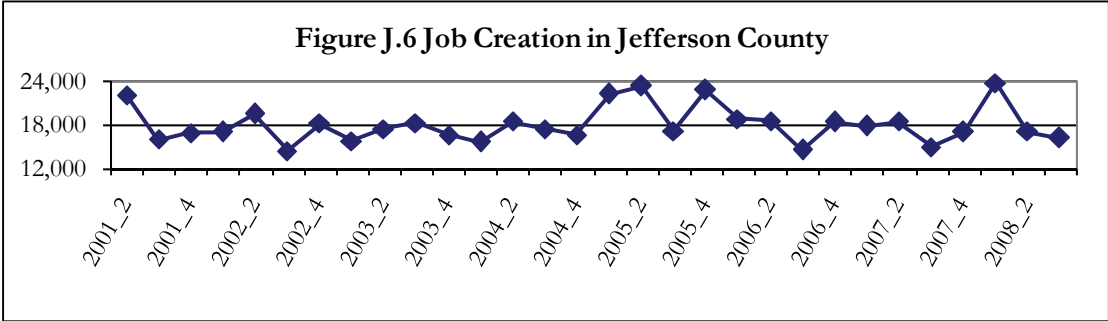
Source: Alabama Department of Industrial Relations and U.S. Census Bureau.

By broad industry classification, service providing industries provided 81.1 percent of all nonagricultural jobs in the county in third quarter 2008 (Figure J.5). Goods producing industries were next with 14.8 percent and public administration accounted for 4.1 percent.



**Job Creation and Net Job Flows**

On average, 18,096 jobs were created per quarter from second quarter 2001 to third quarter 2008 (Figure J.6); quarterly net job flows averaged 1,122 (Figure J.7). Both job creation and net job flows have been declining since the first quarter of 2008. Quarterly net job flows fluctuate considerably and have ranged from a loss of 4,975 to a gain of 6,013. Job creation refers to the number of new jobs that are created either by new area businesses or through the expansion of existing firms. Net job flows reflect the difference between current and previous employment at all businesses.



Source: Alabama Department of Industrial Relations and U.S. Census Bureau.

## High-Demand, Fast-Growing, High-Earning, and Sharp-Declining Occupations

Out of a total 856 occupations and occupational categories in the county, 740 are single occupations. Table J.10 shows the 40 occupations that are expected to be in high-demand, ranked by projected average annual job openings over the 2006 to 2016 period. Many of these occupations are common to four of the five largest employment sectors identified earlier (Table J.9): health care and social assistance; retail trade; manufacturing; and finance and insurance. Thus, these sectors will continue to dominate employment in the county.

The top five high-demand occupations are Registered Nurses; Customer Service Representatives; Accountants and Auditors; Home Health Aides; and Management Analysts. Twenty-five of the high-demand occupations are also fast-growing. This means that these 25 occupations have a minimum annual growth rate of 2.27 percent, much faster than the county and state occupational growth rates of 1.04 percent and 1.38 percent, respectively.

The 38 fastest growing occupations ranked by projected growth of employment are listed in Table J.11. Most of these occupations are related to health, education, and finance industries. The top five fast-growing occupations are Medical Scientists, Except Epidemiologists; Biological Technicians; Network Systems and Data Communication Analysts; Home Health Aides; and Industrial Engineers.

Table J.12 shows the 50 selected highest earning occupations in the county. These occupations are mainly in health, management, engineering, postsecondary education, legal, science, and computer fields. Eight of the top 10 listed are health occupations. Any discussion of earnings must consider that wages vary with experience. Occupations with the highest entry wages may not necessarily have the highest average or experienced wages.

The selected high-earning occupations are generally not fast-growing or in high-demand. Seven occupations are both high-earning and in high-demand (Table J.10): Management Analysts; Pharmacists; Securities, Commodities, and Financial Services Sales Agents; Personal Financial Advisors; Medical and Health Services Managers; Mathematical Science Teachers, Postsecondary; and Business Teachers, Postsecondary. Two occupations are in high-demand, fast-growing, and high-earning: Management Analysts and Personal Financial Advisors.

Of the county's 856 occupations and occupational categories, 95 are expected to decline over the 2006 to 2016 period. Employment in the 25 sharpest-declining occupations will fall by at least 7 percent, with each losing a minimum of 30 jobs over the period (Table J.13). No efforts should be made to sustain these occupations because they are declining as a result of structural changes in the economy of the county.

**Table J.10 Selected High-Demand Occupations (Base Year 2006 and Projected Year 2016)**

Occupation	Average Annual Job Openings		
	Total	Due to Growth	Due to Separations
Registered Nurses *	465	280	185
Customer Service Representatives	335	145	190
Accountants and Auditors	130	65	65
Home Health Aides *	105	85	20
<b>Management Analysts *</b>	<b>100</b>	<b>65</b>	<b>35</b>
Computer Systems Analysts	85	35	50
Pharmacy Technicians *	80	40	40
Medical Assistants *	60	45	15
Clergy *	60	40	20
Network Systems and Data Communications Analysts *	50	35	15
<b>Pharmacists</b>	<b>45</b>	<b>25</b>	<b>20</b>
Network and Computer Systems Administrators	40	20	20
Paralegals and Legal Assistants	40	25	15
Computer Software Engineers, Applications *	35	25	10
<b>Securities, Commodities, and Financial Services Sales Agents</b>	<b>35</b>	<b>15</b>	<b>20</b>
<b>Personal Financial Advisors *</b>	<b>30</b>	<b>25</b>	<b>5</b>
Personal and Home Care Aides *	30	20	10
Dental Hygienists *	30	20	10
Computer Software Engineers, Systems Software *	30	20	10
<b>Medical and Health Services Managers</b>	<b>30</b>	<b>15</b>	<b>15</b>
Dental Assistants *	25	15	10
Child, Family, and School Social Workers	25	15	10
Advertising Sales Agents	25	15	10
Biological Science Teachers, Postsecondary *	20	15	5
Financial Analysts *	20	15	5
Directors, Religious Activities and Education *	20	10	10
Biological Technicians *	15	10	5
Physical Therapist Assistants *	15	10	5
Vocational Education Teachers, Postsecondary *	15	10	5
Physician Assistants *	15	10	5
Physical Therapists *	15	10	5
Health Specialties Teachers, Postsecondary *	15	10	5
Industrial Engineers *	10	5	5
Veterinarians	10	5	5
Materials Engineers *	10	5	5
Occupational Therapists *	10	5	5
Engineering Teachers, Postsecondary	10	5	5
<b>Mathematical Science Teachers, Postsecondary</b>	<b>10</b>	<b>5</b>	<b>5</b>
Database Administrators	10	5	5
<b>Business Teachers, Postsecondary</b>	<b>10</b>	<b>5</b>	<b>5</b>

Note: Occupations are growth- and wages-weighted and data are rounded to the nearest 5. Occupations in bold are also high-earning.

\* Qualify as both high-demand and fast-growing occupations.

Source: Alabama Department of Industrial Relations and Center for Business and Economic Research, The University of Alabama.

**Table J.11 Selected Fast-Growing Occupations (Base Year 2006 and Projected Year 2016)**

Occupation	Employment		Percent Change	Annual Growth (Percent)	Average Annual Job Openings
	2006	2016			
Medical Scientists, Except Epidemiologists	NA	NA	83	6.25	5
Biological Technicians *	NA	NA	55	4.48	15
Network Systems and Data Communications Analysts *	780	1,130	45	3.78	50
Home Health Aides *	1,950	2,800	44	3.68	105
Industrial Engineers *	200	280	40	3.42	10
<b>Personal Financial Advisors *</b>	<b>660</b>	<b>920</b>	<b>39</b>	<b>3.38</b>	<b>30</b>
Physical Therapist Assistants *	280	390	39	3.37	15
Veterinary Technologists and Technicians	230	320	39	3.36	15
Health Educators	80	110	38	3.24	5
Medical Assistants *	1,120	1,540	38	3.24	60
Personal and Home Care Aides *	540	730	35	3.06	30
Vocational Education Teachers, Postsecondary *	370	500	35	3.06	15
Physician Assistants *	230	310	35	3.03	15
<b>Management Analysts *</b>	<b>1,940</b>	<b>2,610</b>	<b>35</b>	<b>3.01</b>	<b>100</b>
Dental Hygienists *	530	710	34	2.97	30
Occupational Therapist Assistants	90	120	33	2.92	5
Substance Abuse and Behavioral Disorder Counselors	NA	NA	33	2.92	10
Pharmacy Technicians *	1,270	1,680	32	2.84	80
Dental Assistants *	470	620	32	2.81	25
Computer Software Engineers, Systems Software *	690	910	32	2.81	30
Computer Software Engineers, Applications *	690	910	32	2.81	35
Biological Science Teachers, Postsecondary *	NA	NA	32	2.78	20
Mental Health Counselors	190	250	32	2.78	10
Medical Equipment Repairers	130	170	31	2.72	10
Physical Therapists *	420	540	29	2.54	15
Instructional Coordinators	140	180	29	2.54	5
Audio and Video Equipment Technicians	110	140	27	2.44	10
Financial Analysts *	480	610	27	2.43	20
Health Specialties Teachers, Postsecondary *	NA	NA	27	2.39	15
Materials Engineers *	150	190	27	2.39	10
Rehabilitation Counselors	150	190	27	2.39	10
Directors, Religious Activities and Education *	380	480	26	2.36	20
Occupational Therapists *	230	290	26	2.35	10
Social and Human Service Assistants	920	1,160	26	2.35	35
Bus Drivers, Transit and Intercity	NA	NA	26	2.31	15
Medical Transcriptionists	430	540	26	2.30	15
Registered Nurses *	11,080	13,870	25	2.27	465
Clergy *	1,630	2,040	25	2.27	60

Note: Employment data are rounded to the nearest 10 and job openings are rounded to the nearest 5. Occupations in bold are also high-earning.

\* Qualify as both high-demand and fast-growing occupations. NA – Not available.

Source: Alabama Department of Industrial Relations and Center for Business and Economic Research, The University of Alabama.

**Table J.12 Selected High-Earning Occupations (Base Year 2006 and Projected Year 2016)**

Occupation	Employment		Annual Growth (Percent)	Average Annual Job Openings	Mean Annual Salary (\$)
	2006	2016			
Surgeons	300	330	0.96	10	227,007
Psychiatrists	NA	NA	0.00	0	218,429
Orthodontists	NA	NA	0.00	0	214,932
Internists, General	170	180	0.57	5	178,133
Chief Executives	950	1,010	0.61	30	170,202
Obstetricians and Gynecologists	80	90	1.18	0	167,565
Anesthesiologists	90	100	1.06	0	145,402
Pediatricians, General	170	190	1.12	5	137,131
Administrative Law Judges, Adjudicators, and Hearing Officers	NA	NA	0.00	0	135,630
Family and General Practitioners	220	250	1.29	10	129,800
Lawyers	2,590	2,850	0.96	75	129,635
Clinical, Counseling, and School Psychologists	230	280	1.99	10	127,430
Physicists	20	20	0.00	0	119,380
Natural Sciences Managers	50	50	0.00	0	109,686
Engineering Managers	390	410	0.50	10	105,727
General and Operations Managers	6,560	6,750	0.29	180	104,351
Computer Hardware Engineers	NA	NA	1.26	5	103,514
Human Resources Managers, All Other	210	250	1.76	10	102,637
Computer and Information Systems Managers	670	780	1.53	20	102,594
Mining and Geological Engineers, Including Mining Safety Engineers	40	40	0.00	0	102,206
Marketing Managers	410	450	0.94	15	101,072
<b>Personal Financial Advisors *</b>	<b>660</b>	<b>920</b>	<b>3.38</b>	<b>30</b>	<b>100,246</b>
Financial Managers	1,480	1,640	1.03	35	100,039
Education Administrators, Postsecondary	NA	NA	1.63	25	98,808
Dentists, General	NA	NA	0.54	10	97,532
Pharmacists *	1,090	1,330	2.01	45	97,520
Purchasing Managers	170	190	1.12	5	96,729
Sales Managers	940	1,040	1.02	30	96,704
Managers, All Other	2,890	3,050	0.54	75	95,667
Compensation and Benefits Managers	100	120	1.84	0	93,078
Advertising and Promotions Managers	170	180	0.57	5	92,503
Public Relations Managers	240	280	1.55	10	92,369
Physicians and Surgeons, All Other	1,210	1,360	1.18	35	91,890
Business Teachers, Postsecondary *	210	260	2.16	10	90,311
Transportation, Storage, and Distribution Managers	270	280	0.36	10	89,999
Medical and Health Services Managers *	710	840	1.70	30	88,794
Industrial Production Managers	340	340	0.00	10	87,977
Computer and Information Scientists, Research	20	20	0.00	0	86,157
Airline Pilots, Copilots, and Flight Engineers	40	40	0.00	0	84,508
Electronics Engineers, Except Computer	280	320	1.34	10	81,910
Mathematical Science Teachers, Postsecondary *	160	200	2.26	10	81,775
<b>Management Analysts *</b>	<b>1,940</b>	<b>2,610</b>	<b>3.01</b>	<b>100</b>	<b>81,609</b>
Electrical Engineers	800	810	0.12	20	81,308
Physical Scientists, All Other	20	30	4.14	0	81,079
Chemical Engineers	NA	NA	0.00	0	80,904
Securities, Commodities, and Financial Services Sales Agents *	800	950	1.73	35	79,944
History Teachers, Postsecondary	NA	NA	2.26	0	79,923
Optometrists	110	130	1.68	0	79,522
Loan Officers	1,210	1,310	0.80	25	79,338
Commercial Pilots	NA	NA	0.80	5	78,764

Note: Employment data are rounded to the nearest 10; openings to the nearest 5. The salary data provided are based on the May 2008 release of the Occupational Employment Statistics (OES) combined employment and wage file. Estimates for specific occupations may include imputed data. Occupations in bold are also fast-growing. NA – Not available.

\* Qualify as both high-earning and high-demand occupations.

Source: Center for Business and Economic Research, The University of Alabama and Alabama Department of Industrial Relations.

**Table J.13 Selected Sharp-Declining Occupations (Base Year 2006 and Projected Year 2016)**

Occupation	Employment		Net Change	Percent Change
	2006	2016		
Stock Clerks and Order Fillers	5,060	4,690	-370	-7
File Clerks	700	420	-280	-40
Computer Operators	650	440	-210	-32
Order Clerks	710	510	-200	-28
Telephone Operators	350	170	-180	-51
Telemarketers	1,150	1,020	-130	-11
Data Entry Keyers	950	860	-90	-9
Telecommunications Equipment Installers and Repairers, Except Line Installers	730	640	-90	-12
Machine Feeders and Offbearers	520	430	-90	-17
Photographic Processing Machine Operators	160	80	-80	-50
Mail Clerks and Mail Machine Operators, Except Postal Service	450	390	-60	-13
Printing Machine Operators	590	530	-60	-10
Switchboard Operators, Including Answering Service	660	610	-50	-8
Postal Service Mail Sorters, Processors and Processing Machine Operators	710	660	-50	-7
Electrical and Electronic Equipment Assemblers	220	170	-50	-23
Cutting, Punching, and Pressing Machine Setters, Operators, and Tenders, Metal and Plastic	510	460	-50	-10
Bindery Workers	160	110	-50	-31
Job Printers	180	140	-40	-22
Grinding and Polishing Workers, Hand	230	190	-40	-17
Electrical and Electronic Engineering Technicians	330	300	-30	-9
Travel Agents	170	140	-30	-18
New Accounts Clerks	NA	NA	-30	-19
Meter Readers, Utilities	320	290	-30	-9
Weighers, Measurers, Checkers, and Samplers, Recordkeeping	150	120	-30	-20
Pressers, Textile, Garment, and Related Materials	270	240	-30	-11

Note: Employment data are rounded to the nearest 10. NA - Not available.

Source: Alabama Department of Industrial Relations and Center for Business and Economic Research, The University of Alabama.

## Skills and Skills Gap Analyses

Jobs require skill sets and it is necessary that jobholders have the relevant skills. Table J.14 shows skill types and definitions as provided by O\*NET Online, which offers skill sets for all occupations ranked by the degree of importance. High-earning occupations typically require skills that are obtained in the pursuit of the high educational attainment levels that such jobs require. Lower earning occupations require more basic skill sets. Some occupations have no minimum skill set requirements (e.g. dishwashers and maids).

Table J.15 shows the percentage of selected occupations in the county that list a particular skill as primary. We define primary skills as the 10 most important skills in the required skill set for an occupation. It is important to note that a particular skill may be more important and more extensively used in one occupation than another. Table J.15 does not address such cross-occupational skill importance comparisons. In general, basic skills are most frequently listed as primary, which means that they are important for practically all jobs.

**Table J.14 Skill Types and Definitions**

<p><b>Basic Skills:</b> Developed capacities that facilitate learning or the more rapid acquisition of knowledge.</p> <p>Active Learning — Understanding the implications of new information for both current and future problem-solving and decision-making.</p> <p>Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.</p> <p>Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems.</p> <p>Learning Strategies — Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.</p> <p>Mathematics — Using mathematics to solve problems.</p> <p>Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.</p> <p>Reading Comprehension — Understanding written sentences and paragraphs in work-related documents.</p> <p>Science — Using scientific rules and methods to solve problems.</p> <p>Speaking — Talking to others to convey information effectively.</p> <p>Writing — Communicating effectively in writing as appropriate for the needs of the audience.</p> <p><b>Complex Problem Solving Skills:</b> Developed capacities used to solve novel, ill-defined problems in complex, real-world settings.</p> <p>Complex Problem Solving — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.</p> <p><b>Resource Management Skills:</b> Developed capacities used to allocate resources efficiently.</p> <p>Management of Financial Resources — Determining how money will be spent to get the work done and accounting for these expenditures.</p> <p>Management of Material Resources — Obtaining and seeing to the appropriate use of equipment, facilities, and materials needed to do certain work.</p> <p>Management of Personnel Resources — Motivating, developing, and directing people as they work, identifying the best people for the job.</p> <p>Time Management — Managing one's own time and the time of others.</p> <p><b>Social Skills:</b> Developed capacities used to work with people to achieve goals.</p> <p>Coordination — Adjusting actions in relation to others' actions.</p> <p>Instructing — Teaching others how to do something.</p> <p>Negotiation — Bringing others together and trying to reconcile differences.</p> <p>Persuasion — Persuading others to change their minds or behavior.</p> <p>Service Orientation — Actively looking for ways to help people.</p> <p>Social Perceptiveness — Being aware of others' reactions and understanding why they react as they do.</p> <p><b>Systems Skills:</b> Developed capacities used to understand, monitor, and improve socio-technical systems.</p> <p>Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.</p> <p>Systems Analysis — Determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes.</p> <p>Systems Evaluation — Identifying measures or indicators of system performance and the actions needed to improve or correct performance, relative to the goals of the system.</p> <p><b>Technical Skills:</b> Developed capacities used to design, set-up, operate, and correct malfunctions involving application of machines or technological systems.</p> <p>Equipment Maintenance — Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.</p> <p>Equipment Selection — Determining the kind of tools and equipment needed to do a job.</p> <p>Installation — Installing equipment, machines, wiring, or programs to meet specifications.</p> <p>Operation and Control — Controlling operations of equipment or systems.</p> <p>Operation Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.</p> <p>Operations Analysis — Analyzing needs and product requirements to create a design.</p> <p>Programming — Writing computer programs for various purposes.</p> <p>Quality Control Analysis — Conducting tests and inspections of products, services, or processes to evaluate quality or performance.</p> <p>Repairing — Repairing machines or systems using the needed tools.</p> <p>Technology Design — Generating or adapting equipment and technology to serve user needs.</p> <p>Troubleshooting — Determining causes of operating errors and deciding what to do about it.</p>
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Source: O\*NET Online (<http://online.onetcenter.org/skills/>).

**Table J.15 Percentage of Selected Occupations for Which Skill Is Primary**

	Selected High-Demand Occupations	Selected Fast-Growing Occupations	Selected High-Earning Occupations
<b>Basic Skills</b>			
Active Learning	80	66	60
Active Listening	93	89	76
Critical Thinking	85	82	80
Learning Strategies	25	29	8
Mathematics	33	21	26
Monitoring	38	26	36
Reading Comprehension	98	95	80
Science	23	21	26
Speaking	78	76	58
Writing	53	50	36
<b>Complex Problem Solving Skills</b>			
Complex Problem Solving	28	24	26
<b>Resource Management Skills</b>			
Management of Financial Resources	8	5	16
Management of Material Resources	0	0	2
Management of Personnel Resources	0	0	12
Time Management	65	66	46
<b>Social Skills</b>			
Coordination	25	26	34
Instructing	53	58	18
Negotiation	3	0	10
Persuasion	3	3	18
Service Orientation	43	37	14
Social Perceptiveness	35	42	16
<b>Systems Skills</b>			
Judgment and Decision Making	40	37	68
Systems Analysis	8	5	6
Systems Evaluation	3	0	22
<b>Technical Skills</b>			
Equipment Maintenance	3	11	0
Equipment Selection	8	8	8
Installation	5	5	0
Operation and Control	3	8	10
Operation Monitoring	0	3	6
Operations Analysis	10	8	8
Programming	5	5	2
Quality Control Analysis	8	5	2
Repairing	0	3	0
Technology Design	10	11	6
Troubleshooting	15	13	8

Note: Rounding errors may be present.

Source: O\*NET Online and Center for Business and Economic Research, The University of Alabama.

High-earning occupations require more systems, resource management, and three social skills—coordination, negotiation, and persuasion—than both high-demand and fast-growing jobs. These skills require long training periods and postsecondary education. However, high-earning jobs require significantly less technical skills. Fast-growing occupations require slightly more technical skills, but less basic, complex problem solving, and systems skills than high-demand occupations.

Table J.16 shows skill gap indexes for all 35 skills in Table J.14. Skills gap indexes range up to 100 and are standardized measures of the gap between current supply and projected demand. The index does not provide any information about current or base year skill supply. Its focus is on the projection period, which for Table J.16 is 2006 to 2016, and identifies critical skill needs. The index essentially ranks expected training needs. The higher the index the more critical is the skill over the specified projection period.

For policy and planning purposes, skill gap indexes have to be considered together with replacement indexes, which are the expected shares of job openings due to replacement. Replacement is necessary because of turnover and people leaving the labor force. The smaller the replacement index, the larger the share of job openings due to growth, which in turn implies a need to increase the pace of skill training. Skill gap indexes point to the need to ramp up the scale of skill training while replacement indexes address the pace of training.

By skill type the skill gap indexes show that basic skills are most critical followed by social, complex problem solving, resource management, system, and technical skills. The importance of basic skills generally and for high-demand, high-growth, and high-earning jobs indicates a strong need for training in these skills. The pace of training needs to increase for systems, complex problem solving, and social skills; the scale of training should be raised for basic and social skills.

## **Education and Training Issues**

Educational attainment in Jefferson County is above that of the state as a whole. About 80.9 percent of residents age 25 and over had graduated from high school in 2000, compared to 75.3 percent for Alabama. Of the age 25 and over population, 24.6 percent had a bachelor's or higher degree versus 19 percent for the state. Skill and education requirements for jobs keep rising. This highlights a strong need to focus on reducing high school dropout rates in the county.

Table J.17 shows the number of selected occupations in the county for which a particular education/training category is most common. In general, high-earning occupations require high educational attainment levels; just four high-earning occupations do not require a bachelor's or higher degree. Thirty-three (83 percent) of the 40 high-demand occupations require at least an associate degree and twenty-eight (70 percent) require a bachelor's or higher degree. Twenty-nine (76 percent) of the 38 fast-growing occupations require an associate degree at the minimum, with twenty-two (58 percent) requiring a bachelor's or higher degree.

The 2006 to 2016 occupational projections indicate that future jobs will require postsecondary education and training at a minimum. Job ads are increasingly asking for at least a high school diploma or GED. Of the county's 856 occupations and occupational categories, 95 are expected to decline over the period and education and training for these should slow accordingly.

**Table J.16 Skills Gap Indexes (Base Year 2006 to Projected Year 2016)**

<b>Skill</b>	<b>Total Openings (Projected Demand)</b>	<b>Replacement Index</b>	<b>Skills Gap Index</b>
Reading Comprehension	7,875	60	100
Active Listening	7,780	62	97
Critical Thinking	7,085	61	94
Speaking	6,245	60	91
Active Learning	6,240	60	88
Coordination	5,875	61	85
Monitoring	5,670	60	82
Writing	5,635	60	79
Time Management	5,255	59	76
Instructing	5,380	59	73
Learning Strategies	5,125	59	70
Social Perceptiveness	4,795	58	67
Service Orientation	4,440	58	64
Identification of Key Causes	3,835	60	61
Persuasion	3,820	61	58
Complex Problem Solving	3,515	58	55
Mathematics	3,165	61	52
Equipment Selection	2,210	64	50
Negotiation	1,925	66	47
Troubleshooting	1,655	62	44
Management of Personnel Resources	1,820	70	41
Equipment Maintenance	1,350	64	38
Management of Financial Resources	1,215	63	35
Installation	1,170	62	32
Operations Analysis	870	60	29
Systems Evaluation	730	56	26
Science	640	58	23
Repairing	775	67	20
Quality Control	740	61	17
Judgment and Decision Making	535	55	14
Operation and Control	775	63	11
Operation Monitoring	825	72	8
Management of Material Resources	615	67	5
Technology Design	440	61	2
Programming	110	55	0

Source: Alabama Department of Industrial Relations.

**Table J.17 Number of Selected Occupations by Education/Training Requirement**

Most Common Education/Training Requirements Categories	Selected High-Demand Occupations	Selected Fast-Growing Occupations	Selected High-Earning Occupations
First Professional Degree	2	0	13
Doctoral Degree	2	2	4
Master's Degree	6	9	2
Work Experience Plus a Bachelor's or Higher Degree	3	2	17
Bachelor's Degree	15	9	10
Associate Degree	5	7	0
Postsecondary Vocational Training	0	1	1
Work Experience in a Related Occupation	0	0	3
Long-term On-the-job Training	0	1	0
Moderate-term On-the-job Training	5	5	0
Short-term On-the-job Training	2	2	0

Note: The last three education and training requirements categories are based on the length of time it generally takes an average worker to achieve proficiency for occupations in which postsecondary training is usually not needed for entry. **Long-term** requires more than 12 months on-the-job training that can include up to four years of apprenticeship, formal classroom instruction, and short-term employer-sponsored training. Trainees are generally considered to be employed in the occupation. **Moderate-term** requires one to 12 months on-the-job experience and informal training. **Short-term** requires up to one month on-the-job experience and training.

Source: O\*NET Online; Center for Business and Economic Research, The University of Alabama; and Alabama Department of Industrial Relations.

## Implications and Recommendations

Job growth is expected to exceed population and labor force growth through 2016 and 2025 (Table J.18). From a 2006 base, worker shortfalls of 22,440 and 101,624 are estimated by 2016 and 2025, respectively. Filling these jobs will likely require increased in-commuting and worsen congestion. Focus on both worker skills and the expected shortfalls, especially for critical occupations, must be a top priority through 2025.

**Table J.18 Expected Worker Shortfall**

	2006-2016	2006-2025
Total population growth (percent)	2.2	4.8
Age 20-64 population growth (percent)	2.2	-0.3
Job growth (percent)	7.6	24.1
Worker shortfall (percent)	5.4	24.3
Worker shortfall (number)	22,440	101,624

Source: Center for Business and Economic Research, The University of Alabama.

Employment is critical to economic development and so strategies to address skill needs and worker shortfalls must be adopted and implemented. For Jefferson County, such strategies should aim at increasing labor force participation, encouraging in-migration, and raising worker productivity and could include: (1) improvements in education and its funding; (2) continuation and enhancement of programs to assess, retrain, and place dislocated workers; (3) focus on hard-to-serve populations (e.g. out-of-school youth); (4) lowering the high school dropout rate; (5) use of economic opportunities to attract new residents; (6) facilitation of in-commuting; and (7) encouragement of older worker participation in the labor force.

Improving education is vital because a highly educated and productive workforce is a critical economic development asset. The educational and training requirements of high-demand, fast-growing, and high-earning occupations show the significance of education in developing the workforce of the future. The importance of basic skills generally and for high-demand, high-growth, and high-earning jobs demonstrates a strong need for training in these skills. The pace of training needs to increase for systems, complex problem solving, and social skills while the scale of training is raised for basic and social skills. Ideally, all high school graduates should possess basic skills so that postsecondary and higher education can focus on other and more complex skills while enhancing these basic skills. Employers should be an integral part of planning for training as they can help identify future skill needs and any existing gaps. Education and training for the 25 sharp-declining occupations in Table J.13 should slow accordingly.

Another very important reason to improve education is that more educated people are more likely to work; data on worker participation and educational attainment show that labor force participation increases with worker education. Productivity also rises with education, which yields high private and social returns. Workforce development must view all of the education and other programs (e.g. adult education, career technical training, worker retraining, career readiness, etc.) as one system. Funding to support workforce development may require tax reform at state and local levels and must provide for flexibility as workforce needs change over time and demand different priorities.

Programs to assess, retrain, and place dislocated workers—especially those affected by outsourcing and structural changes in the economy—should be continued and enhanced because they can improve the labor force participation rate. Hard-to-serve populations include out-of-school youth, persons in poverty, those receiving welfare, residents of sparsely populated areas, and those on active parole. These populations are often outside of the mainstream economy and are poor. They usually have difficulty finding work because of low levels of educational attainment, geographic or other barriers, or a lack of occupational skills. They are a potential human resource, but investment in training, transportation, child care, infrastructure, etc. may be needed to tap this resource.

In-migration is one way of growing the labor force as it helps population growth. The county's low population growth rate may hinder its ability to meet expected job demand barring future economic slowdowns. Higher employment demand could be partially served by in-commuting. However, new residents can be attracted using the high-paying job opportunities from the county's economic development successes. Investment in amenities and infrastructure may be needed to support such growth. In-migration is generally more beneficial than in-commuting since it grows the economy faster and adds to the tax base.

Policies that facilitate and encourage older worker participation are needed as older workers can help meet the county's workforce challenges. Such policies could be related to income taxation, job flexibility, and retirement programs. As the share of older people in the population is projected to increase (see Table J.5), it becomes even more important that they be active in the workforce. Older worker participation has been rising nationally since the early 1990s. This has been attributed to reasons including:

- Older workers can work longer because they are healthier
- The number of physically demanding jobs is falling
- Defined contribution plans are replacing pensions
- There are fewer employer-paid retiree health insurance programs
- Social security reforms affecting those born after 1938 (i) gradually raise the normal retirement age from 65 to 67, (ii) increase the rate at which monthly payments rise with delayed benefits, and (iii) eliminate the reduction in benefits for those working beyond the full retirement age.

Diversifying the county's economy will strengthen it. This demands that economic development also focus on retaining, expanding, and attracting businesses that provide more high-earning jobs. Current workers—including the underemployed—would welcome higher-earning opportunities. An economic development focus on diversification would require that workforce development pay attention to postsecondary and higher educational systems to ensure a ready and available workforce for new and expanding businesses. The higher incomes earned by graduates of these institutions will help raise personal income for the county and provide additional local (county and city) tax revenue. Raising personal income by improving educational attainment and technological skills is an effective economic development strategy, especially for a county that has fairly low population and labor force growth rates. Together, workforce development and economic development can build a strong, well-diversified economy. Indeed, one cannot achieve success without the other.