State of the Workforce Report VII:
Mobile County

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State of the Workforce Report VII: Mobile County

March 2013

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Summary

- This report analyzes workforce supply and demand issues using available metrics of workforce characteristics for Mobile County, Alabama and presents implications and recommendations.

- Mobile County had a 7.2 percent unemployment rate in December 2012, with 13,790 unemployed. The underemployment rate was 23.9 percent for 2012. This suggests that the county has a 56,082-strong available labor pool that includes 42,292 underemployed workers who are looking for better jobs.

- Workers are taking slightly shorter times to commute longer distances, implying that congestion eased. The number of in- and out-commuters rose from 56,021 in 2005 to 77,045 in 2010. This growth, coupled with considerable commuting in the county, calls for continuous maintenance and development of transportation infrastructure and systems.

- By sector the top five employers in the county are health care and social assistance; retail trade; educational services; manufacturing; and accommodation and food services. In the first quarter of 2012, these five industries provided 87,185 jobs, 54.8 percent of the county total. Among the leading employers, educational services and manufacturing had higher wages than the county's $3,369 monthly average. 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 also focus on preparing workers for these industries.

- On average 9,401 jobs were created per quarter from second quarter 2001 to first quarter 2012; quarterly net job flows averaged 748. 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; Home Health Aides; Welders, Cutters, Solderers, and Brazers; Structural Metal Fabricators and Fitters; and Sailors and Marine Oilers.

- The top five fast-growing occupations are Aircraft Structure, Surfaces, Rigging, and Systems Assemblers; Metal-Refining Furnace Operators and Tenders; Pourers and Casters, Metal; Rolling Machine Setters, Operators, and Tenders, Metal and Plastic; and Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic.

- The top 50 high-earning occupations are in management, engineering, health, and business fields and have an average salary range of $77,928 to $261,823. Seven of the top 10 are health occupations.

- Of the top 45 high-demand, the top 25 fast-growing, and the top 50 high-earning occupations, three—Aerospace Engineers; Computer Hardware Engineers; and Industrial Production Managers—belong to all three categories. Eight occupations are both high-demand and high-earning and 18 are both high-demand and fast-growing.

- Of the county's 693 occupations, 51 are expected to decline over the 2010 to 2020 period, with 20 occupations expected to sharply decline by at least two percent and lose a minimum of 10 jobs each. Education and training for these 20 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. In Mobile County the pace of training must rise for technical and systems 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. Employers should be an integral part of planning for training as they can help identify future skill needs and any existing gaps.

- From a 2010 base, worker shortfalls of about 25,000 and 48,000 are expected for 2020 and 2030 respectively. A focus on worker skills and the expected shortfalls must be a top priority through 2030. 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 and younger residents; (6) encouragement of older worker participation in the labor force; and (7) facilitation of in-commuting.

- 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 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 people to raise their own educational attainment levels, while also promoting public and legislative support for education.

- The 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 tax revenues. This is important, especially for a county that has low population and labor force growth rates.

- Together, workforce development and economic development can build a strong, well-diversified Mobile County economy. Indeed, one cannot achieve success without the other.

Workforce Supply

Labor Force Activity

The labor force includes all persons in the civilian non-institutional population who are age 16 and over and either 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. discouraged workers, students, retirees, and the disabled). Table M.1 shows labor force information on Mobile County for 2012 and for December 2012. Alabama labor force information is available from the Labor Market Information (LMI) Division of the Alabama Department of Labor. LMI compiles data in cooperation with the U.S. Bureau of Labor Statistics. The recession that began in December 2007 sharply increased the number of unemployed and raised the county's unemployment rate to double digit levels but it declined to 8.7 percent for 2012 and 7.2 percent in December 2012.

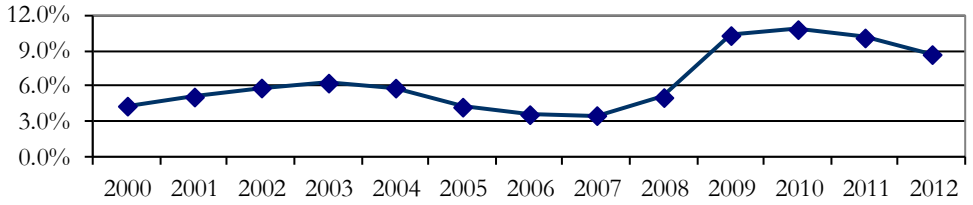
Table M.1 Mobile County Labor Force Information

	2012 Annual Average			
	Labor Force	Employed	Unemployed	Rate (%)
Mobile County	190,554	173,995	16,559	8.7
Alabama	2,152,933	1,987,181	165,752	7.7
United States	154,975,000	142,469,000	12,506,000	8.1
	December 2012			
	Labor Force	Employed	Unemployed	Rate (%)
Mobile County	190,597	176,807	13,790	7.2
Alabama	2,154,744	2,013,847	140,897	6.5
United States	154,904,000	143,060,000	11,844,000	7.6

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

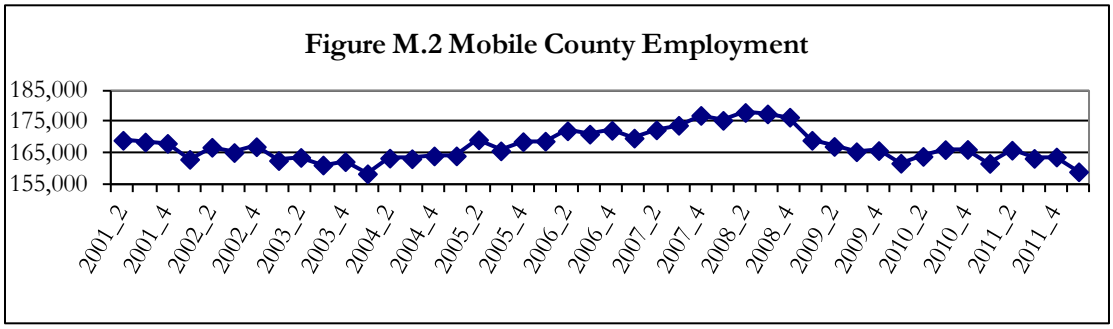
Annual unemployment rates for 2000 to 2012 are shown in Figure M.1. The county's unemployment rose from 4.4 percent in 2000 to 6.3 percent in 2003 primarily because of the 2001 national economic recession. Employment gains resulting from successful economic development efforts at both state and local levels reduced the unemployment rate to a low of 3.6 percent in 2007. The recent recession raised the county unemployment rate to a high of 10.8 percent in 2009 before it started dropping. The effects of the recession are still keeping unemployment high. The unemployment rate dropped to 10.1 and 8.7 percent in 2011 and 2012 respectively. The year-to-date monthly labor force data point to a lower, but still high, county unemployment rate for 2013.

Figure M.1 Mobile County Unemployment Rate



Source: Alabama Department of Labor.

Nonagricultural employment in the county averaged 167,271 quarterly from the second quarter of 2001 to the first quarter of 2012 (Figure M.2). The number of jobs declined continuously from the second quarter of 2008 to the first quarter of 2010. Despite showing some sign of improvement in the second quarter of 2011, in the first quarter of 2012 the number of jobs dropped to the lowest level since the first quarter of 2004.



Source: Alabama Department of Labor and U.S. Census Bureau.

Table M.2 shows worker distribution by age in Mobile County for the first quarter of 2012. Older workers, age 55 and over, constitute 20.5 percent of the region's nonagricultural employment, which is above the state's 19.7 percent. Those who are age 65 and over constitute 4.5 percent of nonagricultural employment, just above Alabama's 4.4 percent. Labor force participation of younger residents must increase to meet long term occupational projections for growth and replacement or older workers must work longer.

Table M.2 Workers by Age Group (First Quarter 2012)

Age Group	Nonagricultural Employment	
	Number	Percent
14-18	2,059	1.3
19-24	17,005	10.7
25-34	35,263	22.2
35-44	35,280	22.2
45-54	36,861	23.2
55-64	25,416	16.0
65+	7,172	4.5
55 and over total	32,588	20.5
Total all ages	159,056	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

There were 381 more people commuting into Mobile County for work than commuting out in 2005 (Table M.3). By 2010 net in-commuters were 4,612 and the number of in- and out-commuting residents grew to 77,046 from 56,021 in 2005. The average commute time was down in 2012 from 2011 but the distance was up implying that congestion has eased although it remains a challenge in some parts of the county. As the county economy recovers from the effects of the recent recession, congestion will continue to be a concern. County transportation infrastructure and systems must be maintained and developed to ensure a smooth flow of goods and movement of workers.

Congestion impedes the mobility of workers and goods and can delay or slow economic development.

Table M.3 Commuting Patterns in Mobile County

Year	County Inflow	County Outflow
	Number	Number
2005	28,201	27,820
2006	26,040	32,049
2007	33,333	33,526
2008	36,068	35,259
2009	37,624	35,256
2010	40,829	36,217

	Percent of workers						
Average commute time (one-way)	**2004**	**2005/2006**	**2008**	**2009**	**2010**	**2011**	**2012**
Less than 20 minutes	59.3	53.6	52.3	54.2	52.2	53.8	47.8
20 to 40 minutes	27.6	35.9	35.5	35	35.1	33.1	38.8
40 minutes to an hour	4.1	6.5	5.9	5.8	6.8	8.1	6.7
More than an hour	3.4	0.7	3.1	1.5	1.2	2.5	2.8
Average commute distance (one-way)	**2004**	**2005/2006**	**2008**	**2009**	**2010**	**2011**	**2012**
Less than 10 miles	47.0	49.3	49.8	52.6	48.1	45.0	44.4
10 to 25 miles	33.2	32.2	29.3	31.9	36.5	42.0	39.5
25 to 45 miles	9.3	12.0	12.9	9.6	10.4	6.9	10.5
More than 45 miles	6.3	2.5	5.2	3.6	2.9	4.8	4.0

Note: Rounding errors may be present.

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

Population

Mobile County has a population of 412,992 in 2010, up 3.3 percent than in 2000 (Table M.4). This population growth is much less than Alabama's 7.5 percent. Table M.5 shows Mobile County's population counts, estimates, and projections by age group. The population aged 65 and over is growing rapidly after the first of the baby boom generation turned 65 in 2011. The growth of the prime working age group (20-64) and youth (0-19) is expected to decline through 2030. This poses a challenge for workforce development. Employment growth is expected to outpace labor force growth in the long term. This presents the communities in the county with the opportunity to attract new residents. However, growing the population may require more investment in amenities and infrastructure.

Table M.4 Mobile County Population

	1990 Census	2000 Census	2010 Census	Change 2000-2010	% Change 2000-2010
Mobile County	378,643	399,843	412,992	13,149	3.3
Alabama	4,040,587	4,447,100	4,779,736	332,636	7.5
United States	248,709,873	281,421,906	308,745,538	27,323,632	9.7

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

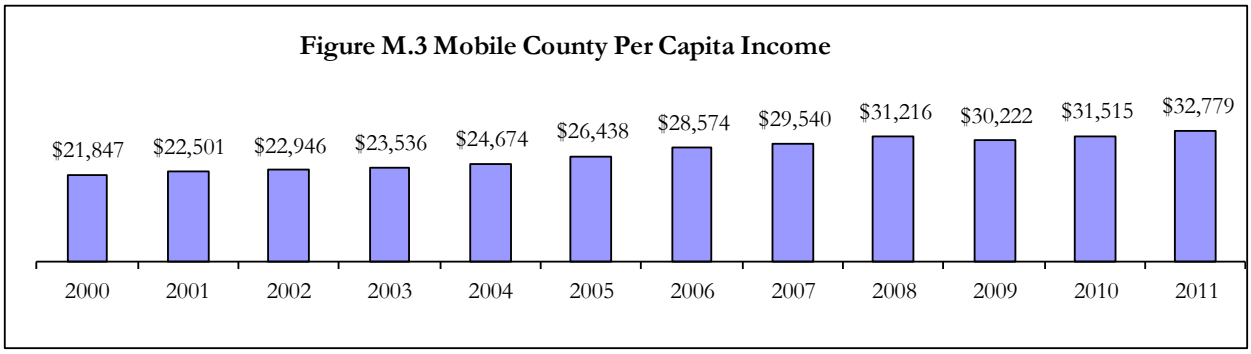
Table M.5 Population by Age Group and Projections

Age Group	2000	2010	2020	2030
0-19	121,942	115,728	113,732	114,198
20-24	27,932	29,130	27,864	26,904
25-29	26,886	27,657	28,499	26,091
30-34	26,370	25,974	26,933	26,187
35-39	30,022	25,565	26,288	27,430
40-44	31,335	25,852	25,289	26,417
45-49	27,670	29,546	25,117	26,039
50-54	24,800	30,429	25,227	24,864
55-59	19,165	26,672	28,524	24,391
60-64	15,802	23,118	28,749	23,992
65+	47,919	53,321	70,375	88,455
20-64 Total	229,982	243,943	242,490	232,315
Total Population	399,843	412,992	426,597	434,968
Change from 2010				
0-19			-1.7%	-1.3%
20-64			-0.6%	-4.8%
Total Population			3.3%	5.3%

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

Per Capita Income

Per capita income (PCI) in Mobile County was at $32,779 in 2011 (Figure M.3), up about 50 percent from 2000, but $2,101 or 6.0 percent below the state average of $34,880.

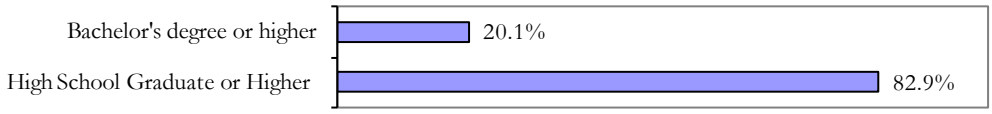


Source: U.S. Bureau of Economic Analysis and Center for Business and Economic Research, The University of Alabama.

Educational Attainment

Educational attainment of Mobile County residents who were 25 years old and over in 2007 to 2011 is shown in Figure M.4 and Table M.6. About 83 percent graduated from high school and 20 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 M.4 Mobile County Educational Attainment, 2007-2011



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

Table M.6 Educational Attainment of Population 25 Years and Over, 2007-2011

	Mobile County
Total	265,828
No schooling completed	3,150
Nursery to 4th grade	1,153
5th and 6th grade	2,217
7th and 8th grade	5,955
9th grade	6,599
10th grade	9,013
11th grade	11,335
12th grade, no diploma	5,929
High school graduate/equivalent	89,397
Some college, less than 1 year	15,128
Some college, 1+ years, no degree	42,633
Associate degree	20,009
Bachelor's degree	34,983
Master's degree	12,652
Professional school degree	3,265
Doctorate degree	2,410

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.

Mobile County had an underemployment rate of 23.9 percent in 2012. Applying this rate to December 2012 labor force data means that 42,292 employed residents were underemployed (Table M.7). Adding the unemployed gives a total available labor pool of 56,082 for the county. This is 4.1 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. The underemployed workers are willing to commute for slightly longer times but for shorter distances for a better job. For the one-way commute, 36.5 percent are prepared for 20 or more minutes longer and 21.2 percent will go 20 or more extra miles.

Table M.7 Underemployed and Available Labor

	Mobile County
Labor Force	190,597
Employed	176,807
Underemployment rate	23.9%
Underemployed workers	42,292
Unemployed	13,790
Available labor pool	**56,082**

Note: Rounding errors may be present. Based on December 2012 labor force data and 2012 underemployment rates.
Source: Center for Business and Economic Research, The University of Alabama and Alabama Department of Labor.

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 675 complete responses were obtained from Mobile County. About 38 percent (255 respondents) were employed, of whom 61 stated that they were underemployed. Low wages at available jobs, a lack of job opportunities in their area, other family or personal obligations, and child care responsibilities 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, social security limitations, 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 Mobile County shows that:

- Fewer work full-time and more of the part-timers would like to work full-time.
- More hold multiple jobs.
- They longer commute times but shorter distances.
- More are in business and financial operations; computer and mathematical; life, physical, and social sciences; education, training, and library; protective services; food preparation and serving; building and grounds cleaning and maintenance; personal care and service; office and administrative support; installation, maintenance, and repair; and production occupations.
- They have about the same job tenure as other employees but they earn less.
- More are in retail trade; educational services; and health care and social assistance.
- Fewer believe their jobs fit well with their education and training and skills.
- More believe they are qualified for a better job.
- More would leave their current jobs for higher income but they are not willing to extend their commute distance far 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 even if they have to pay all the training cost.
- Fewer are married and more are female.
- Their median age is slightly lower than that of all employees.
- More are Hispanic.
- More are African-American or other nonwhite ethnic groups.
- They have about the same educational attainment as all employees.

Table M.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 (74.9 percent) are satisfied or completely satisfied with their jobs. Workers are most satisfied with the hours they work and least satisfied with their earnings. Fewer underemployed workers (55.7 percent) are satisfied or completely satisfied with their jobs. The underemployed are also most satisfied with their work hours and very dissatisfied with their earnings.

Workers are generally willing to train for a new or better job, with the underemployed being more willing (63.5 percent vs. 61.4 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 a new or better job even if they have to pay all the training cost. The results show that workers are only more willing to train if the government pays for the training suggesting that they expect this. This expectation may result from worker awareness of government workforce programs that provide such assistance.

Table M.8 2012 Job Satisfaction and Willingness to Train (Percent)

Job Satisfaction	Completely Dissatisfied	Dissatisfied	Neutral	Satisfied	Completely Satisfied
Employed					
Overall	2.8	7.5	14.9	22.8	52.2
Earnings	11.8	12.9	18.4	23.1	32.6
Retention	3.5	3.1	11.0	19.6	61.6
Work	2.4	3.1	11.0	19.2	63.9
Hours	4.7	4.7	6.7	21.6	62.0
Shift	2.8	4.3	8.6	14.5	68.6
Conditions	1.6	3.5	15.7	23.9	54.9
Commuting Distance	3.9	4.7	12.9	13.7	63.9
Underemployed					
Overall	3.3	16.4	24.6	16.4	39.3
Earnings	26.2	19.7	23.0	14.8	14.8
Retention	9.8	6.6	26.2	26.2	44.3
Work	6.6	8.2	13.1	26.2	45.9
Hours	8.2	8.2	9.8	23.0	50.8
Shift	1.6	9.8	14.8	14.8	57.4
Conditions	3.3	6.6	27.9	23.0	39.3
Commuting Distance	3.3	6.6	13.1	16.4	60.7

Willingness to Train	Completely Unwilling	Unwilling	Neutral	Willing	Completely Willing
Employed					
For a new or better job	22.3	3.5	11.4	14.4	47.0
If paid by trainee	41.4	17.2	17.8	8.3	10.2
If paid by trainee and government	15.9	10.2	31.2	17.2	22.9
If paid by government	5.1	3.8	11.5	10.8	66.9
Underemployed					
For a new or better job	21.2	3.9	9.6	13.5	50.0
If paid by trainee	36.6	19.5	17.1	7.3	12.2
If paid by trainee and government	9.8	9.8	22.0	26.8	26.8
If paid by government	4.9	0.0	4.9	9.8	78.1

Note: Rounding errors may be present.

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

Workforce Demand

Industry Mix

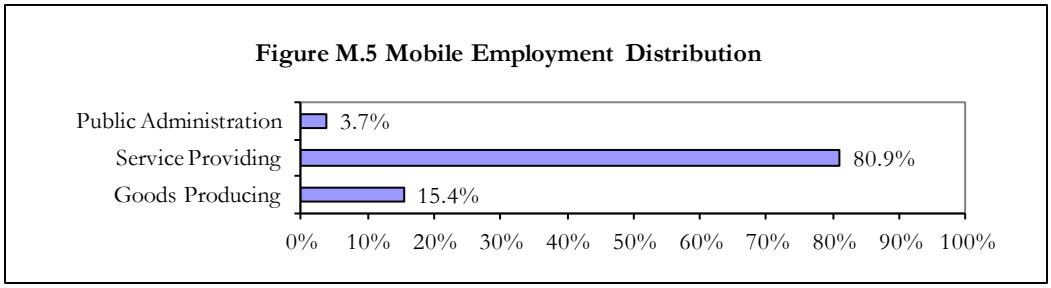
The health care and social assistance sector was the leading employer with 23,432 jobs in the first quarter of 2012 (Table M.9). Rounding out the top five industries by employment are retail trade; educational services; manufacturing; and accommodation and food services. These five industries provided 87,185 jobs, 54.8 percent of the Mobile County total. The average monthly wage across all industries in the county was $3,369; just two of the leading employers (manufacturing and educational services) paid more than this average. New hire monthly earnings averaged $2355, about 70 percent of the average monthly wage. The highest average monthly wages were for mining at $8,783, utilities $5,752, and professional, scientific, and technical services $4,690. Accommodation and food services paid the least at $1,435. Utilities had the highest average monthly new hire wages with $4,694, followed by manufacturing $3,904 and professional, scientific, and technical services $3,860. Accommodation and food services paid newly hired workers the least, $1,071.

Table M.9 Industry Mix (First Quarter 2012)

Industry by 2-digit NAICS Code	Total Employment	Share	Rank	Average Monthly Wage	Average Monthly New Hire Earnings
11 Agriculture, Forestry, Fishing and Hunting	541	0.34%	19	$2,779	$2,234
21 Mining	515	0.32%	20	$8,783	$3,268
22 Utilities	1,386	0.87%	16	$5,752	$4,694
23 Construction	9,275	5.83%	7	$3,727	$2,957
31-33 Manufacturing	13,988	8.79%	4	$4,563	$3,904
42 Wholesale Trade	7,677	4.83%	10	$4,439	$2,827
44-45 Retail Trade	20,830	13.10%	2	$2,377	$1,371
48-49 Transportation and Warehousing	8,484	5.33%	9	$4,088	$3,353
51 Information	2,188	1.38%	15	$3,896	$2,714
52 Finance and Insurance	5,398	3.39%	12	$4,322	$2,766
53 Real Estate and Rental and Leasing	3,110	1.96%	14	$3,232	$1,982
54 Professional, Scientific, and Technical Services	8,731	5.49%	8	$4,690	$3,860
55 Management of Companies and Enterprises	863	0.54%	18	$3,581	$1,791
56 Administrative and Support and Waste Management and Remediation Services	11,282	7.09%	6	$2,486	$1,972
61 Educational Services	15,306	9.62%	3	$3,650	$1,735
62 Health Care and Social Assistance	23,432	14.73%	1	$3,242	$2,476
71 Arts, Entertainment, and Recreation	1,173	0.74%	17	$1,698	$1,322
72 Accommodation and Food Services	13,629	8.57%	5	$1,435	$1,071
81 Other Services (Except Public Administration)	5,224	3.28%	13	$2,600	$2,156
92 Public Administration	6,026	3.79%	11	$3,041	$2,225
ALL INDUSTRIES	**159,056**	**100.00%**		**$3,369**	**$2,355**

Source: Alabama Department of Labor and U.S. Census Bureau.

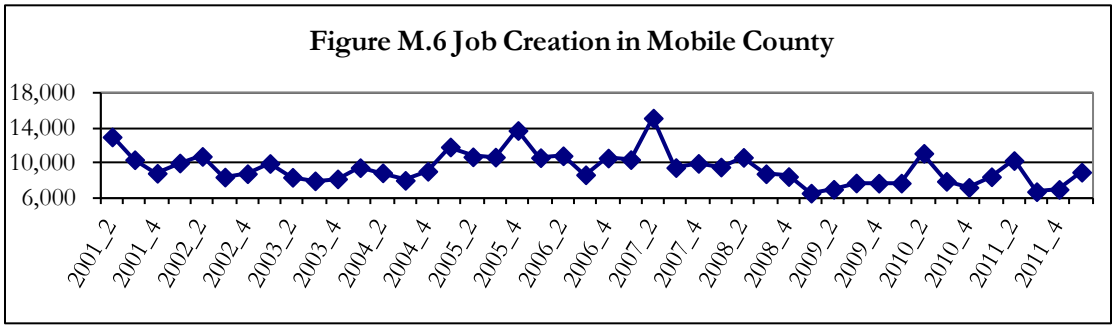
By broad industry classification, service providing industries provided 80.9 percent of all nonagricultural jobs in the county in first quarter 2011 (Figure M.5). Goods producing industries were next with 15.3 percent and public administration accounted for 3.8 percent.

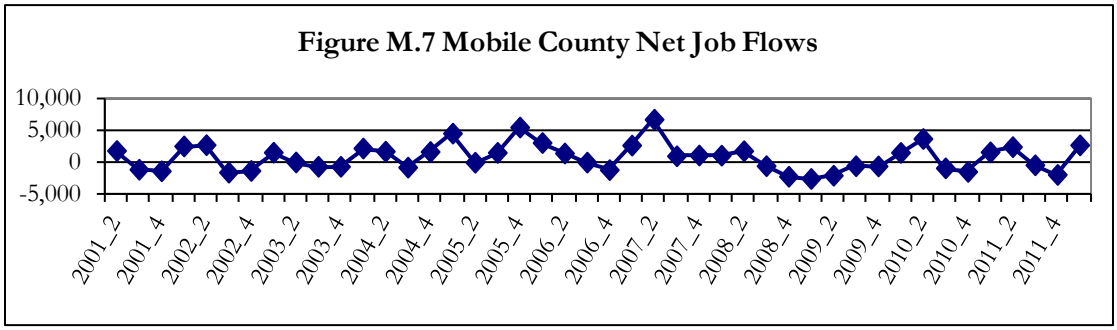


Source: Alabama Department of Labor and U.S. Census Bureau.

Job Creation and Net Job Flows

On average, 9,401 jobs were created per quarter from second quarter 2001 to first quarter 2012 (Figure M.6); quarterly net job flows averaged 748 (Figure M.7). After major gains in the second quarter of 2011, both job creation and net job flows sharply declined but showed a sign of recovery in first quarter of 2012. Quarterly net job flows fluctuate considerably and have ranged from a loss of 2,617 to a gain of 6,707. 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 Labor and U.S. Census Bureau.

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

There are 693 single occupations in Mobile County. Table M.10 shows the 45 occupations that are expected to be in high-demand, ranked by projected average annual job openings over the 2010 to 2020 period. Many of these occupations are related to health care, production, engineering, and transportation occupations (Table M.9). This implies that two of the five largest employment sectors—health care and social assistance and manufacturing—will continue to dominate employment in the county.

The top five high-demand occupations are Registered Nurses; Home Health Aides; Welders, Cutters, Solderers, and Brazers; Structural Metal Fabricators and Fitters; and Sailors and Marine Oilers. Eighteen of the high-demand occupations are also fast-growing. This means that these 18 occupations have a minimum annual growth rate of 4.14 percent, much faster than the county and state occupational growth rates of 1.79 percent and 1.30 percent, respectively.

The 25 fastest growing occupations ranked by projected growth of employment are listed in Table M.11. Many of these occupations are related to the manufacturing industry, especially fabricated metal products industries. The top five fast-growing occupations are Aircraft Structure, Surfaces, Rigging, and Systems Assemblers; Metal-Refining Furnace Operators and Tenders; Pourers and Casters, Metal; Rolling Machine Setters, Operators, and Tenders, Metal and Plastic; and Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic.

Table M.12 shows the 50 selected highest earning occupations in the county. These occupations are in management, engineering, health, science, and business fields. Seven 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. Eight occupations are both high-earning and in high-demand (Table M.10): Pharmacists; Architectural and Engineering Managers; Computer and Information Systems Managers; Aerospace Engineers; Computer Hardware Engineers; Industrial Production Managers; Purchasing Managers; and Mechanical Engineers. Only three occupations—Aerospace Engineers; Computer Hardware Engineers; and Industrial Production Managers—belong to all three categories.

Of the county's 693 single occupations, 51 are expected to decline over the 2010 to 2020 period. Employment in the 20 sharpest-declining occupations will fall by at least two percent, with each losing a minimum of 10 jobs over the period (Table M.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 M.10 Selected High-Demand Occupations (Base Year 2010 and Projected Year 2020)

Occupation	Average Annual Job Openings		
	Total	Due to Growth	Due to Separations
Registered Nurses	215	140	80
Home Health Aides*	120	105	15
Welders, Cutters, Solderers, and Brazers	90	55	35
Structural Metal Fabricators and Fitters*	55	40	15
Sailors and Marine Oilers	40	20	20
Industrial Machinery Mechanics*	35	30	10
Aircraft Structure, Surfaces, Rigging, and Systems Assemblers*	30	25	0
Computer Support Specialists	30	15	15
Metal-Refining Furnace Operators and Tenders*	30	25	0
Captains, Mates, and Pilots of Water Vessels	25	10	15
Computer Systems Analysts	25	20	10
Machinists	25	15	10
Management Analysts	25	15	5
Network and Computer Systems Administrators	25	15	5
Emergency Medical Technicians and Paramedics	20	15	5
Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic*	20	15	5
Industrial Engineers*	20	15	5
Pharmacists	**20**	**10**	**10**
Public Relations Specialists	20	10	10
Software Developers, Applications*	20	15	5
Cost Estimators	15	10	5
Dental Hygienists	15	10	5
First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	15	10	5
Healthcare Social Workers*	15	10	5
Mechanical Engineers	**15**	**5**	**10**
Pourers and Casters, Metal*	15	10	0
Production, Planning, and Expediting Clerks	15	10	5
Rehabilitation Counselors	15	10	5
Rolling Machine Setters, Operators, and Tenders, Metal and Plastic*	15	15	0
Software Developers, Systems Software*	15	15	0
Aerospace Engineers*	**10**	**5**	**0**
Architectural and Engineering Managers	**10**	**5**	**5**
Computer and Information Systems Managers	**10**	**5**	**5**
Industrial Production Managers*	**10**	**5**	**5**
Mental Health Counselors	10	10	5
Physical Therapist Assistants*	10	5	0
Physical Therapists	10	10	0
Ship Engineers	10	5	5
Training and Development Specialists	10	5	5
Commercial Pilots	5	5	5
Computer Hardware Engineers*	**5**	**5**	**0**
Database Administrators*	5	5	0
Logisticians*	5	5	0
Occupational Therapists	5	5	0
Purchasing Managers	**5**	**5**	**5**

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

Table M.11 Selected Fast-Growing Occupations (Base Year 2010 and Projected Year 2020)

Occupation	Employment 2010	Employment 2020	Percent Change	Annual Growth (Percent)	Average Annual Job Openings
Aircraft Structure, Surfaces, Rigging, and Systems Assemblers*	NA	NA	314	15.27	30
Metal-Refining Furnace Operators and Tenders*	100	370	257	13.58	30
Pourers and Casters, Metal*	NA	NA	198	11.55	15
Rolling Machine Setters, Operators, and Tenders, Metal and Plastic*	80	240	180	10.84	15
Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic*	90	240	155	9.83	20
Lay-Out Workers, Metal and Plastic	NA	NA	122	8.30	5
Industrial Engineers*	140	300	106	7.51	20
Aerospace Engineers*	**NA**	**NA**	**95**	**6.88**	**10**
Personal Care Aides	380	720	87	6.47	35
Home Health Aides*	1190	2220	87	6.45	120
Logisticians*	50	90	72	5.59	5
Software Developers, Systems Software*	210	350	67	5.23	15
Industrial Engineering Technicians	40	70	60	4.78	5
Physical Therapist Assistants*	110	170	59	4.74	10
Industrial Machinery Mechanics*	490	760	57	4.61	35
Software Developers, Applications*	310	480	56	4.53	20
Database Administrators*	80	130	56	4.52	5
Structural Metal Fabricators and Fitters*	730	1130	55	4.47	55
Healthcare Social Workers*	220	340	53	4.36	15
Computer Hardware Engineers*	**NA**	**NA**	**53**	**4.35**	**5**
Industrial Production Managers*	**130**	**200**	**52**	**4.27**	**10**
Diagnostic Medical Sonographers	80	120	51	4.23	5
Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	90	140	51	4.21	5
Occupational Therapy Assistants	10	20	50	4.14	0
Physical Therapist Aides	NA	NA	50	4.14	10

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

Table M.12 Selected High-Earning Occupations (Base Year 2010 and Projected Year 2020)

Occupation	Employment 2010	Employment 2020	Annual Growth (Percent)	Average Annual Job Openings	Mean Annual Salary ($)
Anesthesiologists	100	130	2.58	5	261,823
Obstetricians and Gynecologists	70	90	2.85	5	244,163
Internists, General	90	110	2.53	5	216,399
Chief Executives	430	460	0.65	15	205,040
Dentists, General	180	220	2.00	10	174,308
Physicians and Surgeons, All Other	320	410	2.54	15	166,772
Family and General Practitioners	120	160	2.66	5	133,464
Pharmacists*	370	470	2.44	20	130,017
Lawyers	730	820	1.20	25	127,354
Education Administrators, Postsecondary	NA	NA	2.12	10	119,470
Pediatricians, General	40	60	2.80	0	117,053
Marketing Managers	60	80	2.39	5	115,876
General and Operations Managers	3320	3640	0.90	95	109,438
Architectural and Engineering Managers*	150	200	3.06	10	108,824
Computer and Information Systems Managers*	200	270	3.03	10	103,969
Sales Managers	230	270	1.45	10	103,842
Financial Managers	410	480	1.58	15	103,189
Medical and Health Services Managers	240	290	2.07	10	103,087
Natural Sciences Managers	20	20	0.51	0	101,145
Aerospace Engineers*	NA	NA	**6.88**	**10**	**99,040**
Judges, Magistrate Judges, and Magistrates	50	60	0.74	0	98,808
Computer Hardware Engineers*	NA	NA	**4.35**	**5**	**98,351**
Chemical Engineers	100	110	0.69	5	97,777
Human Resources Managers	50	60	1.87	0	96,716
Industrial Production Managers*	**130**	**200**	**4.27**	**10**	**94,912**
Operations Research Analysts	NA	NA	3.90	0	94,608
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	NA	NA	1.08	10	94,420
Compensation and Benefits Managers	20	20	0.54	0	93,380
Purchasing Managers*	90	120	2.95	5	93,028
Transportation, Storage, and Distribution Managers	200	240	1.93	10	92,191
Public Relations and Fundraising Managers	90	110	1.95	5	91,740
Veterinarians	80	100	2.18	5	90,035
Securities, Commodities, and Financial Services Sales Agents	110	120	1.11	5	89,566
Chiropractors	80	110	2.92	5	87,748
Managers, All Other	910	960	0.57	25	87,590
Computer Science Teachers, Postsecondary	NA	NA	1.50	0	86,092
Materials Engineers	20	40	8.76	0	85,804
Electrical Engineers	220	260	1.48	10	84,590
Property, Real Estate, and Community Association Managers	260	260	0.00	5	83,957
Administrative Services Managers	150	170	1.66	5	83,347
Construction Managers	720	820	1.29	15	82,180
Engineers, All Other	210	290	2.98	10	81,895
Business Teachers, Postsecondary	70	80	1.94	0	81,339
Personal Financial Advisors	190	250	2.41	5	81,326
Architects, Except Landscape and Naval	140	170	1.73	5	79,596
First-Line Supervisors of Police and Detectives	140	140	0.07	5	79,231
Mechanical Engineers*	280	350	2.36	15	78,562
First-Line Supervisors of Non-Retail Sales Workers	560	600	0.66	20	78,562
Geoscientists, Except Hydrologists and Geographers	20	20	0.45	0	78,411
Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	20	20	0.87	0	77,928

Note: Employment data are rounded to the nearest 10; openings to the nearest 5. The salary data provided are based on the May 2012 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 Labor.

Table M.13 Selected Sharp-Declining Occupations (Base Year 2010 and Projected Year 2020)

Occupation	Employment 2010	Employment 2020	Net Change	Percent Change
Postal Service Mail Sorters, Processors, and Processing Machine Operators	NA	NA	-70	-46
Switchboard Operators, Including Answering Service	340	270	-70	-20
Postal Service Clerks	NA	NA	-50	-46
Postal Service Mail Carriers	NA	NA	-30	-8
Postmasters and Mail Superintendents	50	40	-10	-25
Door-to-Door Sales Workers, News and Street Vendors, and Related Workers	80	70	-10	-12
Photographic Process Workers and Processing Machine Operators	70	60	-10	-11
Floral Designers	130	120	-10	-10
Fallers	60	60	-10	-10
Prepress Technicians and Workers	50	50	-10	-10
Petroleum Pump System Operators, Refinery Operators, and Gaugers	60	60	-10	-9
Crossing Guards	NA	NA	-10	-9
Paper Goods Machine Setters, Operators, and Tenders	NA	NA	-10	-9
Legal Support Workers, All Other	60	60	-10	-8
Logging Equipment Operators	120	110	-10	-8
Sewing Machine Operators	180	170	-10	-6
Word Processors and Typists	170	160	-10	-5
Pressers, Textile, Garment, and Related Materials	200	190	-10	-4
Food Service Managers	480	470	-10	-2

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

Source: Alabama Department of Labor 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 M.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 M.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 M.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 M.14 Skill Types and Definitions

Basic Skills: Developed capacities that facilitate learning or the more rapid acquisition of knowledge.

Active Learning — Understanding the implications of new information for both current and future problem-solving and decision-making.

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.

Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems.

Learning Strategies — Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.

Mathematics — Using mathematics to solve problems.

Monitoring — Monitoring / Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

Reading Comprehension — Understanding written sentences and paragraphs in work-related documents.

Science — Using scientific rules and methods to solve problems.

Speaking — Talking to others to convey information effectively.

Writing — Communicating effectively in writing as appropriate for the needs of the audience.

Complex Problem Solving Skills: Developed capacities used to solve novel, ill-defined problems in complex, real-world settings.

Complex Problem Solving — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.

Resource Management Skills: Developed capacities used to allocate resources efficiently.

Management of Financial Resources — Determining how money will be spent to get the work done and accounting for these expenditures.

Management of Material Resources — Obtaining and seeing to the appropriate use of equipment, facilities, and materials needed to do certain work.

Management of Personnel Resources — Motivating, developing, and directing people as they work, identifying the best people for the job.

Time Management — Managing one's own time and the time of others.

Social Skills: Developed capacities used to work with people to achieve goals.

Coordination — Adjusting actions in relation to others' actions.

Instructing — Teaching others how to do something.

Negotiation — Bringing others together and trying to reconcile differences.

Persuasion — Persuading others to change their minds or behavior.

Service Orientation — Actively looking for ways to help people.

Social Perceptiveness — Being aware of others' reactions and understanding why they react as they do.

Systems Skills: Developed capacities used to understand, monitor, and improve socio-technical systems.

Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.

Systems Analysis — Determining how a system should work and how changes in conditions, operations, and the environment will affect outcomes.

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.

Technical Skills: Developed capacities used to design, set-up, operate, and correct malfunctions involving application of machines or technological systems.

Equipment Maintenance — Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.

Equipment Selection — Determining the kind of tools and equipment needed to do a job.

Installation — Installing equipment, machines, wiring, or programs to meet specifications.

Operation and Control — Controlling operations of equipment or systems.

Operation Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.

Operations Analysis — Analyzing needs and product requirements to create a design.

Programming — Writing computer programs for various purposes.

Quality Control Analysis — Conducting tests and inspections of products, services, or processes to evaluate quality or performance.

Repairing — Repairing machines or systems using the needed tools.

Technology Design — Generating or adapting equipment and technology to serve user needs.

Troubleshooting — Determining causes of operating errors and deciding what to do about it.

Source: O*NET Online (http://online.onetcenter.org/skills/).

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

	Selected High-Demand Occupations	Selected Fast-Growing Occupations	Selected High-Earning Occupations
Basic Skills			
Active Learning	24	28	44
Active Listening	88	84	84
Critical Thinking	93	88	84
Learning Strategies	2	0	6
Mathematics	12	8	12
Monitoring	71	80	44
Reading Comprehension	68	48	74
Science	12	8	28
Speaking	71	64	82
Writing	39	40	50
Complex Problem Solving Skills			
Complex Problem Solving	56	60	64
Resource Management Skills			
Management of Financial Resources	2	0	2
Management of Material Resources	0	0	0
Management of Personnel Resources	5	4	22
Time Management	24	32	32
Social Skills			
Coordination	49	52	40
Instructing	12	8	8
Negotiation	0	0	14
Persuasion	2	0	16
Service Orientation	24	28	14
Social Perceptiveness	32	28	38
Systems Skills			
Judgment and Decision Making	73	68	78
Systems Analysis	15	12	4
Systems Evaluation	7	8	4
Technical Skills			
Equipment Maintenance	7	4	0
Equipment Selection	2	4	0
Installation	0	0	0
Operation and Control	24	28	0
Operation Monitoring	27	36	0
Operations Analysis	15	20	16
Programming	10	8	0
Quality Control Analysis	17	20	0
Repairing	7	4	0
Technology Design	0	0	0
Troubleshooting	10	8	0

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 active learning, learning strategies, reading comprehension, science, speaking, writing, personnel resource management, complex problem solving, negotiation, persuasion, social perceptiveness, judgment and decision making, than both high-demand and fast-growing jobs. Many of these skills typically require long training periods and postsecondary education. However, high-earning jobs require significantly lower technical skills except for operations analysis. Fast-growing and high-demand occupations require generally similar skills, although high-demand jobs use more basic and systems skills.

Table M.16 shows skill gap indexes for all 35 skills in Table M.14 based on a previous projections period (2008 to 2018). Although the skills gap indexes are for a previous projection period, they are applicable to current projections. 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 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, technical, and systems 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 technical and systems skills; the scale of training should be raised for basic and social skills.

Education and Training Issues

Educational attainment in Mobile County is comparable to that of the state as a whole. About 83 percent of residents age 25 and over had graduated from high school in 2007 to 2011, compared to 82 percent for Alabama. About 20 percent had a bachelor's or higher degree versus 22 percent for the state. Skills and education requirements for jobs keep rising and so there is a need to raise educational attainment in the county.

Table M.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 and only eight of the 50 high-earning occupations do not require a bachelor's or higher degree. Twenty-nine (64 percent) of the 45 high-demand occupations require at least an associate degree and 26 (58 percent) require a bachelor's or higher degree. Twelve (48 percent) of the 25 fast-growing occupations require an associate's degree at the minimum, with nine (36 percent) requiring a bachelor's or higher degree.

The 2010 to 2020 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 693 occupations, 51 are expected to decline over the period and education and training for these should slow accordingly.

Table M.16 Skills Gap Indexes (Base Year 2008 to Projected Year 2018)

Skill	Total Openings (Projected Demand)	Replacement Index	Skills Gap Index
Reading Comprehension	3,640	59	100
Active Listening	3,640	58	97
Critical Thinking	3,315	60	94
Speaking	2,855	59	91
Active Learning	2,845	58	89
Coordination	2,820	59	86
Instructing	2,525	59	83
Monitoring	2,540	59	80
Time Management	2,470	58	77
Writing	2,465	60	74
Learning Strategies	2,220	59	71
Social Perceptiveness	2,165	61	69
Service Orientation	1,830	58	66
Judgment and Decision Making	1,735	59	63
Mathematics	1,575	57	60
Complex Problem Identification	1,435	57	57
Persuasion	1,625	63	54
Equipment Selection	1,275	54	51
Troubleshooting	915	55	49
Equipment Maintenance	865	57	46
Management of Personnel Resources	905	66	43
Installation	705	54	40
Negotiation	875	69	37
Repairing	565	56	34
Operation Monitoring	565	59	31
Management of Financial Resources	520	68	29
Operation and Control	405	58	26
Quality control	335	52	23
Operations Analysis	350	63	20
Systems Evaluation	275	56	17
Science	205	61	14
Systems Analysis	195	54	11
Technology Design	170	50	9
Management of Material Resources	290	78	6
Programming	35	43	3

Source: Alabama Department of Labor.

Note: The skills gap indexes are from 2008 to 2018 projection period and not 2010 to 2020.

Table M.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
Doctoral Degree or First Professional Degree	2	0	14
Master's Degree	4	1	1
Work Experience Plus a Bachelor's or Higher Degree	7	3	12
Bachelor's Degree	13	5	15
Associate Degree	3	3	2
Postsecondary Non-Degree Plus On-the-job Training	0	1	0
Postsecondary Non-Degree	2	0	0
Some College, no Degree Plus On-the-job Training	1	0	0
Some College, no Degree	0	0	0
High School Diploma Plus On-the-job Training	10	9	1
High School Diploma	1	0	5
Less than High School Plus On-the-job Training	2	3	0
Less than High School	0	0	0

Note: The on-the-job training refers to the typical on-the-job training needed to attain competency in the occupation in addition to the typical education needed for entry to the occupation. This could be long-term, moderate-term, or short-term on-the-job training. **Long-term** requires more than 12 months on-the-job training. **Moderate-term** requires one to 12 months of on-the-job training. **Short-term** requires up to one month of on-the-job training. These types of training are more common in occupations that require postsecondary non-degree or less educational attainment. Other types of on-the-job training requirements that may be needed but are not shown on the table are apprenticeship and internship/residency that are typical in certain professions many of which require higher educational attainment.

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

Implications and Recommendations

Employment is projected to grow faster than the labor force and the population. From a 2010 base, worker shortfalls of 24,957 and 47,953 are expected for 2020 and 2030, respectively (Table M.18). A focus on worker skills and the projected shortfalls must be priorities through 2030. Worker shortfalls for critical occupations will also need to be addressed through 2030. The county is expected to have strong job growth in manufacturing and high-earning jobs given the recent decision of the plane maker Airbus to build a production plant in Mobile.

Table M.18 Expected Worker Shortfall

	2010-2020	2010-2030
Total population growth (percent)	3.3	5.3
Age 20-64 population growth (percent)	-0.6	-4.8
Nonagricultural job growth (percent)	9.8	15.1
Worker shortfall (percent)	10.4	19.9
Worker shortfall (number)	24,957	47,953

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 Mobile 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 technical and systems 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 20 sharp-declining occupations in Table M.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 relatively 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 higher-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 because 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 M.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.