

# State of the Workforce Report VIII: Region 4

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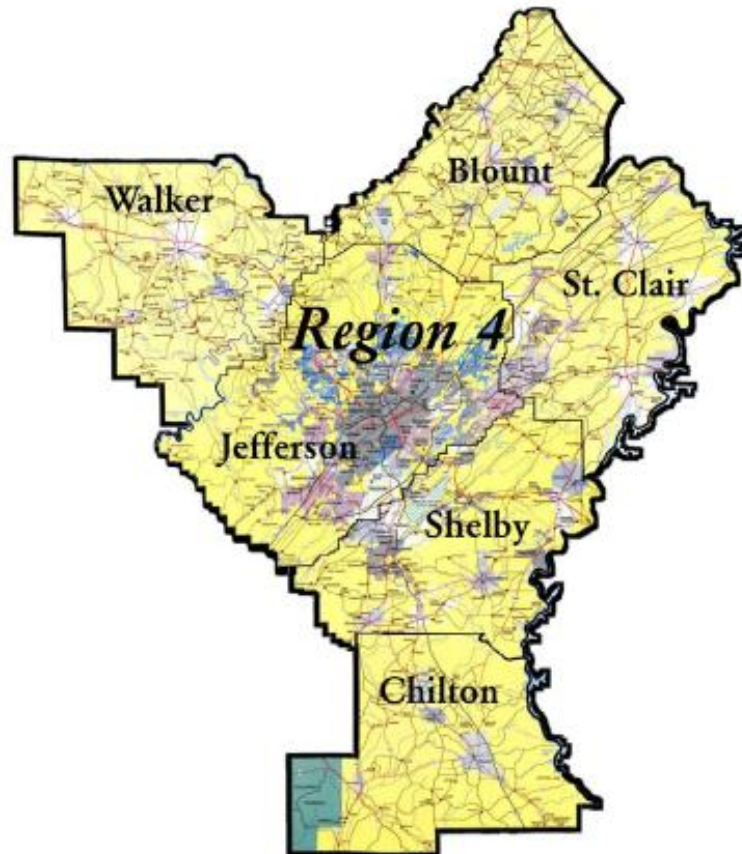
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March 2014

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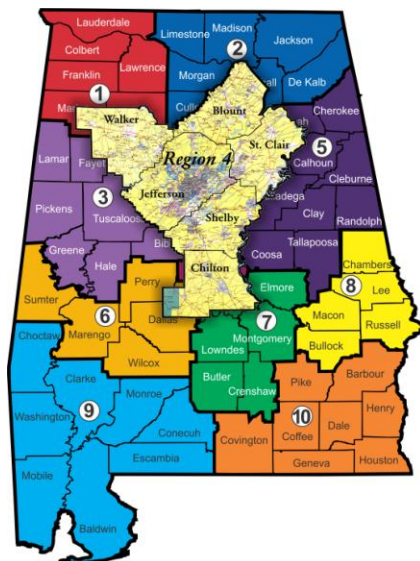
University Center for Economic Development

Institute for Social Science Research

**THE UNIVERSITY OF ALABAMA**



## State of the Workforce Report VIII: Region 4



*March 2014*

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## Acknowledgments

Completion of this project was due to the timely contributions of many people. We are very grateful to the Labor Market Information (LMI) Division of the Alabama Department of Labor (ADOL). In addition to financial support from ADOL, LMI provided significant staff time and this report would not have been possible without large amounts of data from LMI.

Many thanks also to our colleagues at the Center for Business and Economic Research, the Capstone Poll, the Institute for Social Science Research, and the University Center for Economic Development for their help on various phases of this research project. Last, but not least, much gratitude is owed to the thousands of Alabamians who responded to the extensive survey on the state's workforce and related issues, as well as to the community and industry leaders whose work on these issues provides the critical data required in reports of this kind.

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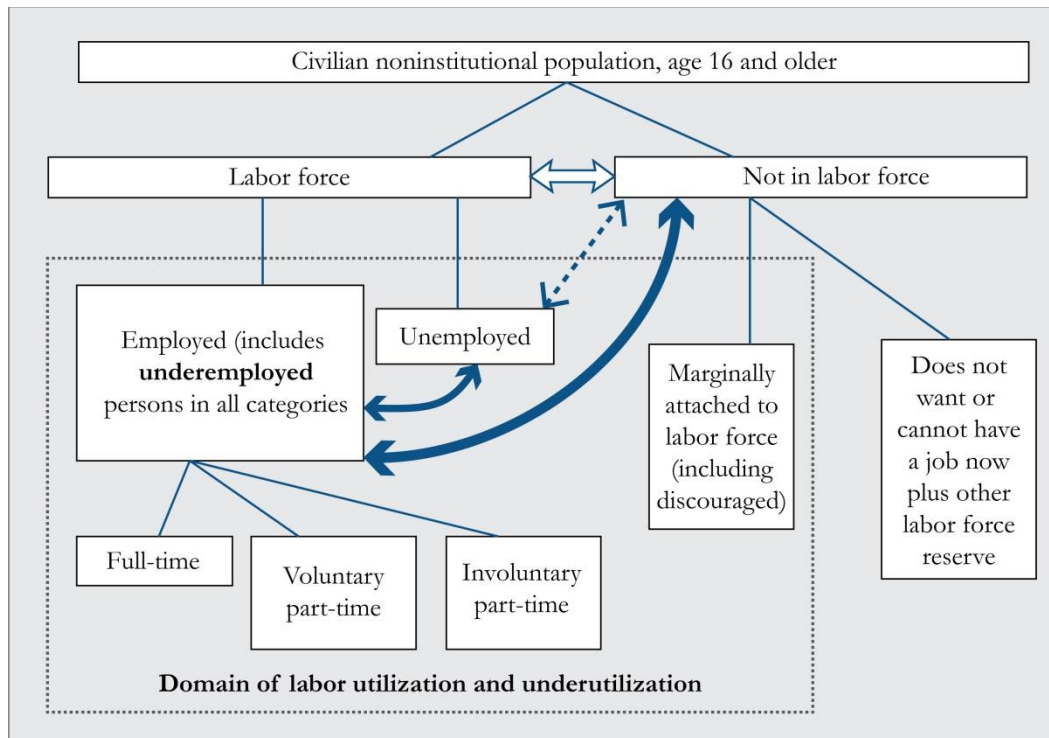
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## Summary

- This report analyzes workforce supply and demand issues using available metrics of workforce characteristics for Workforce Development Region 4 and presents some implications and recommendations.
- Region 4 had a 5.0 percent unemployment rate in December 2013, with 25,435 unemployed. An underemployment rate of 25.0 percent for 2013 means that the region has a 146,393-strong available labor pool that includes 120,958 underemployed workers who are looking for better jobs but are less willing to commute farther and longer for such jobs.
- Commute time fell slightly in 2013 from 2012 but commute distance rose implying that congestion may have eased somewhat. As the region recovers from the recent recession, congestion is likely to worsen. Thus, continuous maintenance and development of transportation infrastructure and systems is strongly needed to avoid slowing economic development.
- By sector the top five employers in the region are health care and social assistance; retail trade; educational services; accommodation and food services; and manufacturing. In the fourth quarter of 2012 these five industries provided 240,366 jobs, 50.6 percent of the regional total. Among the leading employers, only manufacturing had a higher monthly wage than the \$3,902 regional average. Economic development should continue to diversify and strengthen the region'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 22,599 jobs were created per quarter from second quarter 2001 to fourth quarter 2012; quarterly net job flows averaged 1,470. 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; Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products; Home Health Aides; Personal and Home Care Aides; and Lawyers.
- The top five fast-growing occupations are Personal and Home Care Aides; Home Health Aides; Occupational Therapist Assistants; Helpers—Pipelayers, Plumbers, Pipefitters, and Steamfitters; and Physical Therapist Assistants.
- The top 50 high-earning occupations are mainly in management, health, engineering, science, and legal fields and have a minimum mean salary of \$84,187. Eight of the top 10 are health occupations.
- Of the top 40 high-demand, the top 20 fast-growing, and 50 high-earning occupations, nine are both high-demand and high-earning and 12 are both high-demand and fast-growing.

- Of the region's 736 occupations, 47 are expected to decline over the 2010 to 2020 period. Twenty occupations are expected to sharply decline by at least nine percent, with each losing a minimum of 10 jobs. 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. For Region 4 the pace of training needs to increase for technical, systems, and complex problem solving 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.
- From a 2010 base, worker shortfalls of 28,906 and 50,617 are estimated for 2020 and 2030 respectively. This will demand a focus on worker shortfalls and skills through 2030. Worker shortfalls for critical occupations will need to be addressed continuously. Strategies to address skill needs and worker shortfalls might include: (1) improvements in education and its funding; (2) use of economic opportunities that attract new and younger residents; (3) focus on hard-to-serve populations (e.g. out-of-school youth); (4) lowering the high school dropout rate; (5) continuation and enhancement of programs to assess, retrain, and place dislocated workers; and (6) 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 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 region as well as raise additional local (county and city) tax revenues. This is important, even for a region that already has relatively high population and labor force growth rates.
- Workforce development and economic development can together build a strong and well-diversified Region 4 economy. Indeed, one cannot achieve success without the other.

## Labor Utilization and Supply Flows



Source: Addy et al<sup>1</sup> and Canon et al<sup>2</sup>

The chart above presents labor utilization and supply flows that explain labor market dynamics in view of recent study findings. The civilian noninstitutional population age 16 and above comprises of participants in the labor force and nonparticipants. The labor force is made of employed and unemployed persons; the unemployed do not have a job but are actively searching for work. Employed persons include fully employed and underemployed persons in all categories of work (full-time, voluntary part-time, and involuntary part-time). Nonparticipants in the labor force include retirees (voluntary and involuntary), people who do not want to or cannot work for various reasons (e.g., disability, caring for family members, in school or training, etc.), discouraged workers, and other labor force reserves. It has been suggested that a subgroup of nonparticipants referred to as the “waiting group” is more likely than the rest of the nonparticipants to take a job if wages and conditions are satisfactory, but do not actively search for work. New evidence has shown that between January 2003 and August 2013, the flow of nonparticipants into employment is 1.6 times that of unemployed persons transitioning into employment, which may be due to the presence of the waiting group. Nonparticipant flows to employment are larger in services, management, and professional occupations while unemployed flows to employment are higher in physically intensive occupations such as construction workers and miners. Industry effects should vary by the type and number of occupations they contain. This finding enhances the common understanding of labor market dynamics and influences workforce availability and skills gap analyses.

<sup>1</sup> Addy, S.N., Bonnal, M., and Lira, C. (2012). Towards a More Comprehensive Measure of Labor Underutilization: The Alabama Case, *Business Economics*, vol. 47(3) .

<sup>2</sup> Canon, M.E., Kudlyak, M., and Reed, M. (2014). Not Everyone Who Joins the Ranks of the Employed was “Unemployed”, *The Regional Economist*, January.



## 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, discouraged workers, and the disabled). Table 4.1 shows labor force information for Region 4 and its six counties for 2013 and December 2013. 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.

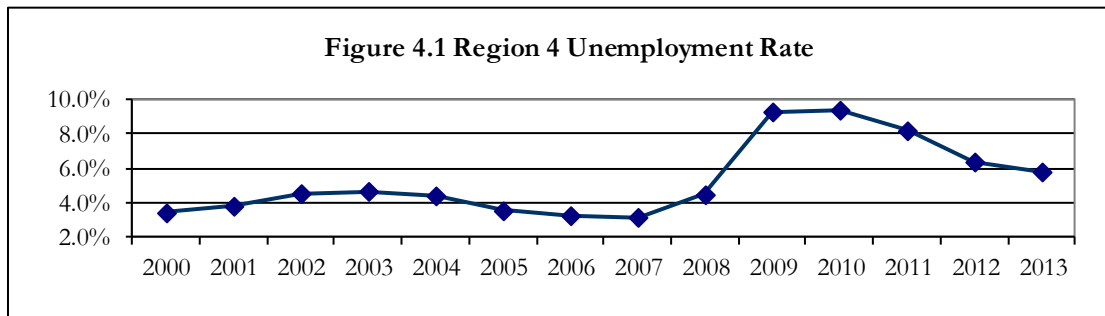
Major job losses from the recession that began in December 2007 sharply raised county and regional unemployment rates. A slow recovery from the recession has lowered county unemployment to a range of 4.4 percent to 6.7 percent for 2013 (5.8 percent for the region) and between 3.8 percent and 6.0 percent in December 2013 (5.0 percent for the region). The unemployment rate was lowest in Shelby County and highest in Walker. All the counties' unemployment rates were below Alabama's 5.7 percent, except in Walker.

**Table 4.1 Region 4 Labor Force Information**

	2013 Annual Average			
	Labor Force	Employed	Unemployed	Rate (%)
Blount	26,233	24,735	1,498	5.7
Chilton	19,810	18,635	1,175	5.9
Jefferson	303,678	285,058	18,620	6.1
St. Clair	37,617	35,453	2,164	5.8
Shelby	103,946	99,336	4,610	4.4
Walker	27,191	25,363	1,828	6.7
Region 4	518,475	488,580	29,895	5.8
Alabama	2,150,224	2,008,995	141,229	6.6
United States	155,389,000	43,929,000	11,460,000	7.4
	December 2013			
	Labor Force	Employed	Unemployed	Rate (%)
Blount	25,871	24,544	1,327	5.1
Chilton	19,494	18,491	1,003	5.1
Jefferson	298,707	282,855	15,852	5.3
St. Clair	36,966	35,178	1,788	4.8
Shelby	102,419	98,568	3,851	3.8
Walker	26,781	25,167	1,614	6.0
Region 4	510,238	484,803	25,435	5.0
Alabama	2,110,725	1,990,418	120,307	5.7
United States	154,408,000	144,423,000	9,984,000	6.5

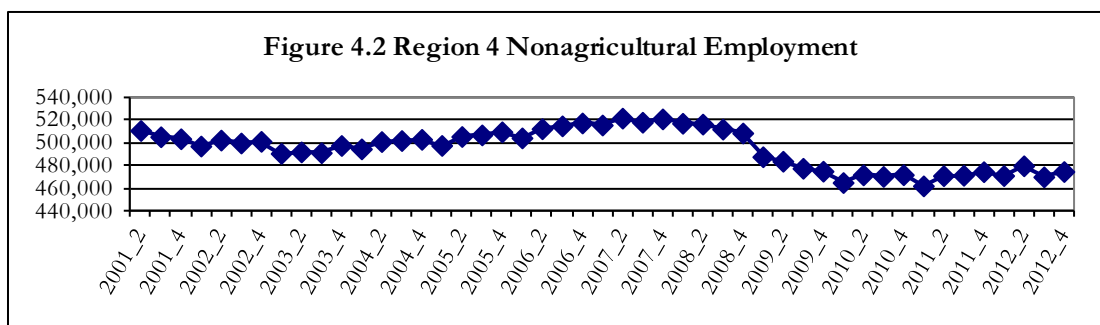
Source: Alabama Department of Labor and U.S. Bureau of Labor Statistics.

Annual unemployment rates for 2000 to 2013 are shown in Figure 4.1. The region’s unemployment rates were low before the 2001 and most recent recessions. After rising to 4.7 percent in 2003, unemployment fell to a record low 3.2 percent in 2007 because of job gains arising from regional and state economic development successes. Unemployment rose to a record high of 9.4 percent in 2010 due to the last recession’s job losses before declining to 5.8 percent in 2013. Year-to-date monthly labor force data point to a lower regional unemployment rate for 2014 than seen in 2013.



Source: Alabama Department of Labor.

Nonagricultural employment of the region’s residents averaged 495,005 quarterly from the second quarter of 2001 to the first quarter of 2013 (Figure 4.2). The number of jobs continuously declined from the fourth quarter of 2007 through the first quarter of 2010. Regional employment rose from second quarter 2011 to about 480,000 in second quarter 2012, dropped to about 470,000 in the third quarter 2012, and reached 475,000 in the fourth quarter of 2012.



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

Table 4.2 shows worker distribution by age in Region 4 for the fourth quarter of 2012. Older workers, age 55 and over, are 20.0 percent of the region’s nonagricultural employment, the same as in the state. Workers who are age 65 and over constitute 4.4 percent of nonagricultural employment, just below Alabama’s 4.5 percent. To meet long term occupational projections for growth and replacement, labor force participation of younger residents must increase or older workers may have to work longer.

**Table 4.2 Workers by Age Group (Fourth Quarter 2012)**

Age Group	Nonagricultural Employment	
	Number	Percent
14-18	7,193	1.5
19-24	50,144	10.6
25-34	108,113	22.8
35-44	107,757	22.7
45-54	106,244	22.4
55-64	74,105	15.6
65+	21,006	4.4
55 and over total	95,111	20.0
Total all ages	474,562	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**

In 2005 about 27,000 more people commuted into the region for work than residents who commuted out (Table 4.3). Net in-commuting jumped up to over 30,000 in 2007 before dropping due to the recent economic recession. By 2010 net in-commuting was 25,821 but it rose to 28,111 in 2011. Despite the slight drop in net in-commuting, commuter outflow rose by 20.5 percent as inflow went up 15.5 percent between 2005 and 2011. Considerable commuting inside the region and the strong increase in the number of commuters point to rising congestion, especially in Jefferson and Shelby counties. Table 4.3 also shows the one-way average commute time and distance for workers in various years. Commute times fell slightly but distances are slightly up in 2013 from 2012. This implies that congestion may have eased somewhat, but is likely to worsen as the regional economic recovery progresses. To ensure a smooth and fast flow of goods and movement of workers, regional transportation infrastructure and systems must be maintained and developed properly. Impeding the mobility of workers and goods can delay or slow economic development.

### **Population**

The Region 4 population count of 1,105,132 for 2010 is 7.1 percent more than in 2000 (Table 4.4). This growth rate is lower than Alabama's 7.5 percent. The population grew in four counties and shrank in two. Population growth was fastest in Shelby County followed by St. Clair. Table 4.5 shows population counts, estimates, and projections by age group. The population aged 65 and over is expected to grow rapidly, with the first of the baby boom generation having turned 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 as employment growth may outpace labor force growth. Communities that experience worker shortages may need to consider investments in amenities and infrastructure to attract new residents.

**Table 4.3 Commuting Patterns**

Year	Region 4 Inflow		Region 4 Outflow				
	Number		Number				
2005	87,521		60,560				
2006	81,542		70,479				
2007	98,535		68,206				
2008	100,258		73,520				
2009	98,672		72,248				
2010	98,733		72,891				
2011	101,109		72,998				
Region 4 Counties	Inflow, 2011		Outflow, 2011				
	Number	Percent	Number	Percent			
Blount	3,702	1.7	18,869	10.3			
Chilton	3,642	1.7	10,484	5.7			
Jefferson	140,758	66.5	59,256	32.3			
St. Clair	9,253	4.4	26,074	14.2			
Shelby	46,544	22.0	55,303	30.1			
Walker	7,756	3.7	13,558	7.4			
			Percent of workers				
Average commute time (one-way)	2005/2006	2008	2009	2010	2011	2012	2013
Less than 20 minutes	49.2	50.0	44.9	49.3	47.2	43.8	42.2
20 to 40 minutes	26.8	30.5	35.5	32.7	32.3	37.0	33.1
40 minutes to an hour	18.1	12.7	12.4	12.5	14.4	12.2	11.9
More than an hour	2.8	2.8	3.0	2.3	3.2	3.7	3.8
Average commute distance (one-way)	2005/2006	2008	2009	2010	2011	2012	2013
Less than 10 miles	41.3	41.9	38.5	44.3	39.2	38.8	35.1
10 to 25 miles	28.7	34.6	38.1	31.4	33.7	34.5	35.3
25 to 45 miles	16.5	14.2	17	16.4	19.2	18.0	18.5
More than 45 miles	7.9	7.9	5.7	5.7	5.8	7.1	8.6

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.

**Table 4.4 Region 4 Population**

	1990 Census	2000 Census	2010 Census	Change 2000-2010	% Change 2000-2010
Blount	39,248	51,024	57,322	6,298	12.3
Chilton	32,458	39,593	43,643	4,050	10.2
Jefferson	651,525	662,047	658,466	-3,581	-0.5
St. Clair	50,009	64,742	83,593	18,851	29.1
Shelby	99,358	143,293	195,085	51,792	36.1
Walker	67,670	70,713	67,023	-3,690	-5.2
Region 4	940,268	1,031,412	1,105,132	73,720	7.1
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.

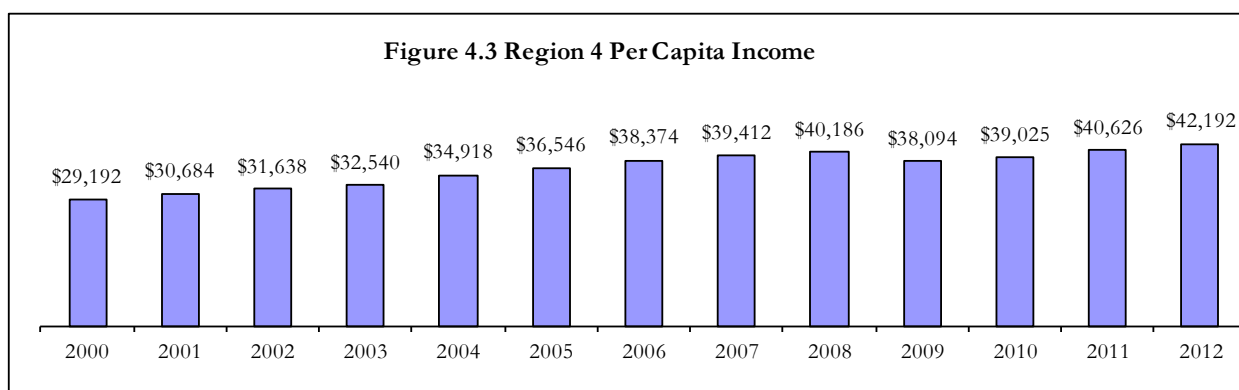
**Table 4.5 Population by Age Group and Projections**

Age Group	2000	2010	2020	2030
0-19	285,101	293,498	304,393	308,777
20-24	67,379	71,049	73,645	76,259
25-29	73,522	76,949	75,243	78,219
30-34	73,176	75,066	76,608	79,765
35-39	80,891	74,520	81,014	79,037
40-44	83,261	73,249	76,134	77,125
45-49	77,310	80,239	75,042	81,546
50-54	66,977	81,277	72,771	76,159
55-59	50,494	73,963	78,086	73,973
60-64	41,151	62,089	76,870	70,039
65+	132,150	143,233	193,300	246,796
20-64 Total	614,161	668,401	685,413	692,122
Total Population	1,031,412	1,105,132	1,183,106	1,247,695
<b>Change from 2010</b>				
0-19			3.7%	5.2%
20-64			2.5%	3.5%
Total Population			7.1%	12.9%

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

### Per Capita Income

Per capita income (PCI) in Region 4 was \$42,192 in 2012 (Figure 4.3), up 44.5 percent from 2000, and \$6,266 (or 17.4 percent) more than the state average of \$35,926. Shelby County had the highest PCI at \$46,033, followed by Jefferson at \$44,880. Blount County's PCI was the lowest at \$28,799.



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

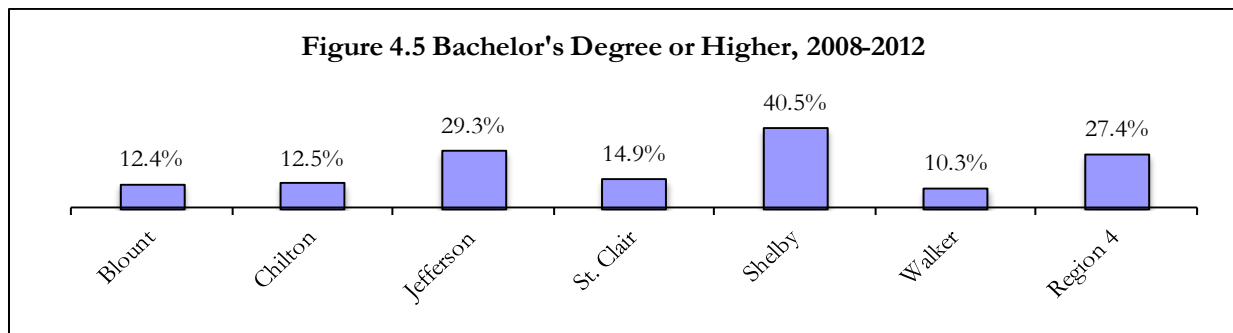
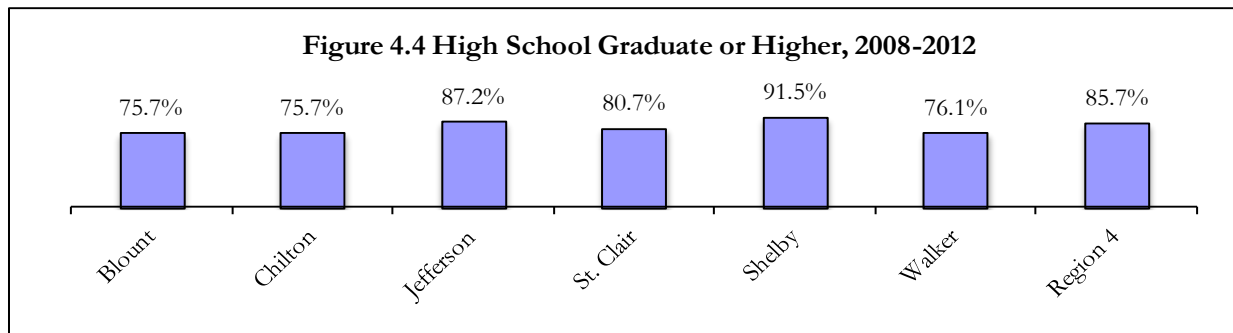
## Educational Attainment

Educational attainment of Region 4 residents who were 25 years old and over in 2008 to 2012 is shown in Table 4.6 and Figures 4.4 and 4.5. About 86 percent of the residents graduated from high school and 27 percent held a bachelor's or higher degree. Shelby and Jefferson counties had higher educational attainment than both the region and the state. Educational attainment is important as skills rise with education and high-wage jobs for the 21st century demand more skill sets.

**Table 4.6 Educational Attainment of Population 25 Years and Over, 2008-2012**

	Blount	Chilton	Jefferson	St. Clair	Shelby	Walker	Region 4
Total	38,703	28,945	439,531	57,090	130,376	46,419	741,064
No schooling completed	549	547	3,741	542	831	542	6,752
Nursery to 4th grade	243	234	1,308	478	266	228	2,757
5th and 6th grade	804	423	4,220	603	1,109	812	7,971
7th and 8th grade	1,850	1,367	7,447	1,519	1,465	1,740	15,388
9th grade	1,594	1,103	7,315	2,320	1,944	2,256	16,532
10th grade	2,086	1,417	10,950	2,671	1,856	2,459	21,439
11th grade	1,533	1,233	13,887	2,166	2,226	2,209	23,254
12th grade, no diploma	760	699	7,179	703	1,399	864	11,604
High school graduate/equivalent	13,994	11,356	120,355	19,643	27,883	16,534	209,765
Some college, less than 1 year	2,509	1,302	23,305	4,137	7,221	3,614	42,088
Some college, 1+ years, no degree	5,219	3,692	78,806	9,463	21,605	6,799	125,584
Associate degree	2,770	1,964	32,308	4,338	9,713	3,600	54,693
Bachelor's degree	3,137	2,276	79,583	5,728	36,111	2,875	129,710
Master's degree	1,210	1,109	31,709	2,143	11,805	1,161	49,137
Professional school degree	334	150	11,646	356	3,133	553	16,172
Doctorate degree	111	73	5,772	280	1,809	173	8,218

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



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 labor pool 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.

Region 4 had an underemployment rate of 25.0 percent in 2013. Applying this rate to December 2013 labor force data means that 120,958 employed residents were underemployed (Table 4.7). Adding the unemployed gives a total available labor pool of 146,393 for the region. This is almost six times the number of unemployed and is a more realistic measure of the available labor pool in the region. 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. Underemployment rates ranged from 21.3 percent for Walker County 27.3 percent for Blount. Chilton County had the smallest available labor pool and Jefferson had the largest. The underemployed workers are not willing to commute farther and longer for a better job. For the one-way commute, 30.3 percent are prepared for 20 or more minutes longer and 28.3 percent will go 20 or more extra miles.

**Table 4.7 Underemployed and Available Labor by Workforce Development Region**

	<b>Region 4</b>	<b>Blount</b>	<b>Chilton</b>	<b>Jefferson</b>	<b>St. Clair</b>	<b>Shelby</b>	<b>Walker</b>
Labor Force	510,238	25,871	19,494	298,707	36,966	102,419	26,781
Employed	484,803	24,544	18,491	282,855	35,178	98,568	25,167
Underemployment rate	25.0%	27.3%	21.0%	26.1%	24.5%	26.2%	21.3%
Underemployed workers	120,958	6,693	3,878	73,938	8,629	25,776	5,356
Unemployed	25,435	1,327	1,003	15,852	1,788	3,851	1,614
<b>Available labor pool</b>	<b>146,393</b>	<b>8,020</b>	<b>4,881</b>	<b>89,790</b>	<b>10,417</b>	<b>29,627</b>	<b>6,970</b>

Note: Rounding errors may be present. Based on December 2013 labor force data and 2013 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. In 2013 a total of 1,022 complete responses were obtained from Region 4. About 46 percent (469 respondents) were employed, of whom 117 stated that they were underemployed. A lack of job opportunities in their area, low wages at available jobs, living too far from jobs, other family or personal obligations, owning a house in the area, child care responsibilities, and spouse or partner having a really good job are the primary reasons given for being underemployed. Ongoing economic development efforts can help address some of these factors. Nonworkers cite retirement and disability or other health concerns as the main reasons for their status, but a significant number also cited social security limitations and lack of jobs in their area. Such workers may join the labor force if their problems can be addressed. Indeed a recent study found that the flow of labor force nonparticipants to employment status was 60 percent more than that of unemployed workers who gain employment.<sup>3</sup> This implies that Region 4’s available labor pool could be larger than estimated in this report.

A comparison of underemployed workers to the overall workforce in Region 4 shows that:

- Fewer work full-time and more of the part-timers would like to work full-time.
- More hold multiple jobs.
- They have shorter commute times and distances.
- More work in community and social services; life, physical and social science; legal; education, training, and library; arts and entertainment; healthcare practitioners and technicians; sales and related; production; and transportation and material moving occupations.
- More are in agriculture, forestry, fishing, and hunting; construction; wholesale trade; retail trade; and health care and social assistance industries.
- They have shorter job tenure and 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.
- More are willing to leave their current jobs for higher income if they are paid at least five percent more.
- Fewer are willing to commute longer and farther for a better job.

<sup>3</sup> Canon, M.E., Kudlyak, M., and Reed, M. (2014). Not Everyone Who Joins the Ranks of the Employed was “Unemployed”, *The Regional Economist*, January.



- 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 of the cost.
- They have the same median age as all employed workers but fewer are married or male.
- They are more educated; they are more likely to have associate degree, bachelors degree, and postgraduate education.
- More are African Americans or other nonwhite ethnic groups.

Table 4.8 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 region's workers (77.2 percent) are satisfied or completely satisfied with their jobs. Workers are most satisfied with the work they do and least satisfied with the earnings they receive. Clearly, fewer underemployed workers are satisfied with their jobs (58.1 percent). The underemployed are most satisfied with their work shift and least satisfied with their earnings.

Workers are generally willing to train for a new or better job, with the underemployed being much more willing (63.6 percent vs. 56.0 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. Even when they have to pay the full costs of training, the underemployed are more willing to train for a new or better job. The results strongly show that workers want 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 4.8 Job Satisfaction and Willingness to Train (Percent)**

<b>Job Satisfaction</b>						
	Completely Dissatisfied	Dissatisfied	Neutral	Satisfied	Completely Satisfied	
<b>Employed</b>						
Overall	4.5	4.5	13.2	25.8	51.4	
Earnings	10.5	10.5	20.0	29.0	29.6	
Retention	5.5	3.6	10.7	18.3	59.9	
Work	2.1	1.9	7.0	23.9	65.0	
Hours	4.3	3.8	10.9	19.4	61.6	
Shift	4.7	3.0	8.3	16.4	67.6	
Conditions	4.1	3.6	13.0	23.5	55.7	
Commuting Distance	5.8	4.7	11.5	16.4	61.4	
<b>Underemployed</b>						
Overall	12.8	9.4	18.0	25.6	32.5	
Earnings	28.2	22.2	21.4	13.7	14.5	
Retention	13.7	6.0	17.1	17.1	44.4	
Work	5.1	3.4	10.3	26.5	54.7	
Hours	11.1	6.0	10.3	18.8	53.9	
Shift	9.4	5.1	7.7	15.4	62.4	
Conditions	11.1	6.8	18.0	20.5	43.6	
Commuting Distance	8.6	6.8	11.1	18.8	53.9	
<b>Willingness to Train</b>						
	Completely Unwilling	Unwilling	Neutral	Willing	Completely Willing	
<b>Employed</b>						
For a new or better job	22.3	4.4	15.8	10.3	45.8	
If paid by trainee	45.7	15.9	23.4	5.3	7.2	
If paid by trainee and government	19.3	9.8	34.7	15.5	17.0	
If paid by government	8.3	3.4	10.9	15.5	60.8	
<b>Underemployed</b>						
For a new or better job	20.2	5.1	10.1	9.1	54.6	
If paid by trainee	46.8	13.9	20.3	3.8	11.4	
If paid by trainee and government	16.5	12.7	32.9	12.7	21.5	
If paid by government	1.3	5.1	3.8	11.4	78.5	

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 industry was the leading employer with 64,041 jobs in the fourth quarter of 2012 (Table 4.9). Rounding out the top five industries by employment are retail trade; educational services; accommodation and food services; and manufacturing. These five industries provided 240,366 jobs, 50.6 percent of the regional total. The average monthly wage across all industries in the region was \$3,902; only one leading employer—manufacturing—paid more than this average. New hire monthly earnings averaged \$2,370 about 61 percent of the region’s average monthly wage. The highest average monthly wages were for utilities at \$6,652; mining \$5,819; professional, scientific, and technical services \$5,691; and finance and insurance at \$5,599. Accommodation and food services paid the least at \$1,561. The highest average monthly new hire wages were for the same industries and in the same order with \$5,605, \$5,312, \$3,893, and \$3,799. Arts, entertainment, and recreation paid newly hired workers the least, \$860.

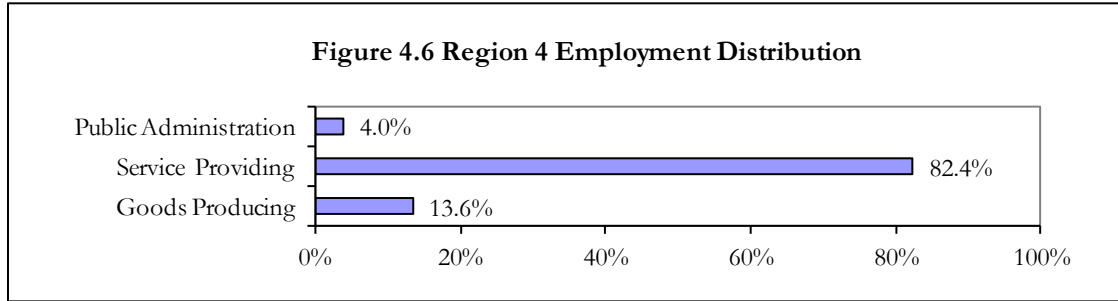
**Table 4.9 Industry Mix (Fourth Quarter 2012)**

Industry by 2-digit NAICS Code	Total Employment	Share	Rank	Average Monthly Wage	Average Monthly New Hire Earnings
11 Agriculture, Forestry, Fishing and Hunting	738	0.16%	20	\$3,461	\$2,536
21 Mining	2,901	0.61%	19	\$5,819	\$5,312
22 Utilities	8,332	1.76%	16	\$6,652	\$5,605
23 Construction	23,680	4.99%	10	\$4,495	\$3,270
31-33 Manufacturing	37,182	7.83%	5	\$4,568	\$2,890
42 Wholesale Trade	28,434	5.99%	7	\$5,168	\$3,272
44-45 Retail Trade	59,989	12.64%	2	\$2,419	\$1,447
48-49 Transportation and Warehousing	13,722	2.89%	13	\$3,648	\$2,512
51 Information	9,851	2.08%	15	\$5,368	\$3,376
52 Finance and Insurance	35,703	7.52%	6	\$5,599	\$3,799
53 Real Estate and Rental and Leasing	6,699	1.41%	17	\$4,056	\$2,852
54 Professional, Scientific, and Technical Services	26,376	5.56%	9	\$5,691	\$3,893
55 Management of Companies and Enterprises	10,595	2.23%	14	\$4,731	\$3,065
56 Administrative and Support and Waste Management and Remediation Services	28,247	5.95%	8	\$2,562	\$1,842
61 Educational Services	40,983	8.64%	3	\$3,492	\$2,617
62 Health Care and Social Assistance	64,041	13.49%	1	\$3,867	\$2,774
71 Arts, Entertainment, and Recreation	5,787	1.22%	18	\$1,808	\$860
72 Accommodation and Food Services	38,171	8.04%	4	\$1,561	\$1,088
81 Other Services (Except Public Administration)	14,064	2.96%	12	\$3,274	\$1,928
92 Public Administration	19,070	4.02%	11	\$3,854	\$2,065
<b>ALL INDUSTRIES</b>	<b>474,563</b>	<b>100.00%</b>		<b>\$3,902</b>	<b>\$2,370</b>

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

By broad industry classification, service providing industries generated 82.4 percent of jobs in fourth quarter 2012 (Figure 4.6). Goods producing industries were next with 13.6 percent and public

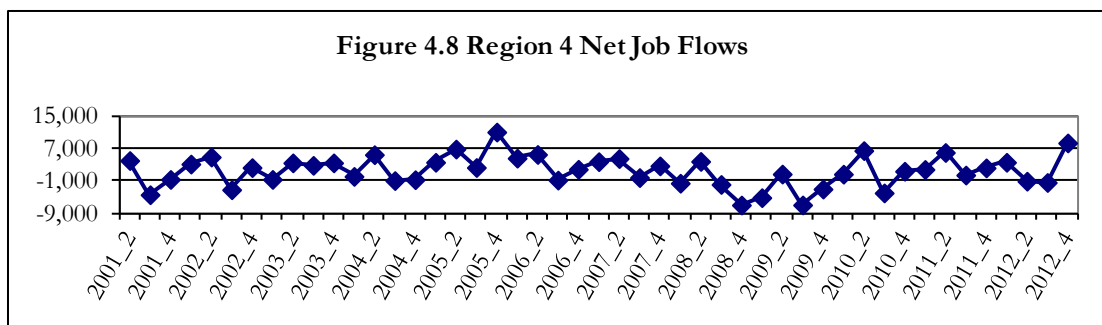
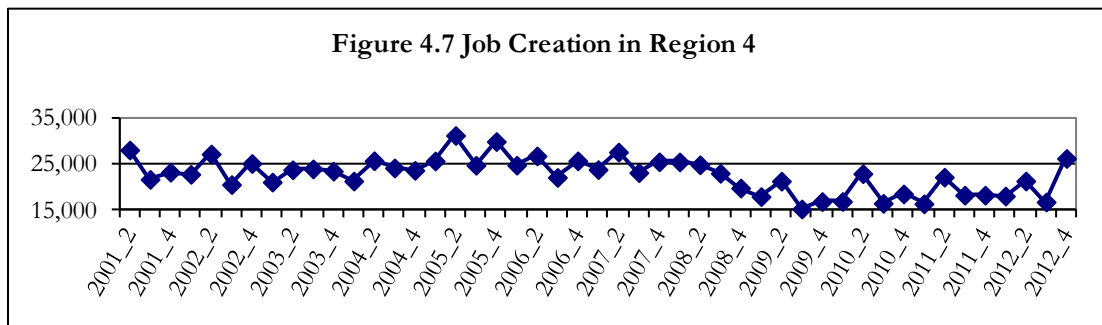
administration accounted for 4.0 percent. The distribution is for all nonagricultural jobs in the region, but there is significant variation by county.



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

### Job Creation and Net Job Flows

On average 22,599 jobs were created per quarter from second quarter 2001 to fourth quarter 2012 (Figure 4.7) while quarterly net job flows averaged 1,470 (Figure 4.8). Both job creation and net job flows were down in the third quarter of 2012 but were up significantly in the following quarter. Quarterly net job flows fluctuate considerably and have ranged from a loss of 6,975 to a gain of 11,101. Job creation refers to the number of new jobs that are added 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

Workforce Development Region 4 has 736 single occupations. Table 4.10 shows the 40 occupations that are expected to be in high-demand, ranked by projected average annual job openings over the 2010 to 2030 period. Many of these occupations are in the largest employment sector identified earlier (Table 4.9), health care and social assistance. Thus, this sector will continue to dominate employment in the region.

The top five high-demand occupations are Registered Nurses; Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products; Home Health Aides; Personal and Home Care Aides; and Lawyers. Twelve of the high-demand occupations are also fast-growing. This means that these 12 occupations have a minimum annual growth rate of 3.47 percent, much faster than the regional and state occupational growth rates of 1.32 percent and 1.30 percent, respectively.

The 20 fastest growing occupations ranked by projected growth of employment are listed in Table 4.11. Most of these occupations are related to health care and social assistance industry. The top five fast-growing occupations are Personal and Home Care Aides; Home Health Aides; Occupational Therapist Assistants; Helpers—Pipelayers, Plumbers, Pipefitters, and Steamfitters; and Physical Therapist Assistants.

Table 4.12 shows the 50 selected highest earning occupations in the region. These occupations are mainly in management, health, engineering, science, and legal 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. Indeed, none of the occupations belong in all the three categories. Nine occupations are both high-earning and in high-demand (Table 4.10).

Of the region's 736 occupations, 47 are expected to decline over the 2010 to 2020 period. Employment in the 20 sharpest-declining occupations will fall by at least 9 percent, with each losing a minimum of 10 jobs over the period (Table 4.13). No efforts should be made to sustain these occupations because they are declining as a result of structural changes in the economy of the region.

**Table 4.10 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	610	355	260
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	380	170	210
Home Health Aides*	190	160	30
Personal and Home Care Aides*	130	120	10
<b>Lawyers</b>	<b>105</b>	<b>50</b>	<b>55</b>
Computer Systems Analysts	100	60	45
<b>Management Analysts</b>	<b>95</b>	<b>65</b>	<b>30</b>
Industrial Machinery Mechanics	80	50	30
Computer Support Specialists	70	35	40
Medical Secretaries*	60	45	15
Biological Science Teachers, Postsecondary	55	35	25
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	55	40	20
Network and computer systems architects and administrators	55	35	20
Software Developers, Systems Software*	50	40	10
Dental Hygienists*	45	30	15
Medical and Public Health Social Workers*	40	25	15
<b>Personal Financial Advisors</b>	<b>40</b>	<b>30</b>	<b>10</b>
Cost Estimators	35	20	15
<b>Medical and Health Services Managers</b>	<b>35</b>	<b>20</b>	<b>20</b>
<b>Software Developers, Applications</b>	<b>35</b>	<b>25</b>	<b>10</b>
Training and Development Specialists	35	25	15
<b>Computer and Information Systems Managers</b>	<b>30</b>	<b>15</b>	<b>10</b>
Computer-Controlled Machine Tool Operators, Metal and Plastic	30	20	10
Occupational Therapists*	30	20	10
Drywall and Ceiling Tile Installers	25	15	10
Medical Scientists, Except Epidemiologists	25	20	5
Physical Therapist Assistants*	25	20	5
Physical Therapists	25	20	5
Anesthesiologists	20	10	5
Diagnostic Medical Sonographers*	20	15	5
Financial Analysts	20	10	10
Rehabilitation Counselors*	20	15	5
Social and Community Service Managers*	20	10	5
Veterinarians	20	15	10
<b>Family and General Practitioners</b>	<b>15</b>	<b>10</b>	<b>5</b>
Occupational Therapist Assistants*	15	10	5
Physician Assistants	15	10	5
<b>Internists, General</b>	<b>10</b>	<b>5</b>	<b>5</b>
Logisticians	10	5	5
<b>Optometrists</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 Labor and Center for Business and Economic Research, The University of Alabama.

**Table 4.11 Selected Fast-Growing Occupations (Base Year 2010 and Projected Year 2020)**

Occupation	Employment		Percent Change	Annual Growth (Percent)	Average Annual Job Openings
	2010	2020			
Personal and Home Care Aides*	1,570	2,750	75	5.77	130
Home Health Aides*	2,480	4,090	65	5.13	190
Occupational Therapist Assistants*	190	300	58	4.67	15
Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	330	500	52	4.24	25
Physical Therapist Assistants*	370	550	49	4.04	25
Helpers--Carpenters	270	400	48	4.01	20
Rehabilitation Counselors*	300	440	47	3.90	20
Metal-Refining Furnace Operators and Tenders	260	380	46	3.87	15
Occupational Therapists*	440	640	45	3.82	30
Veterinary Technologists and Technicians	NA	NA	45	3.77	20
Atmospheric and Space Scientists	90	130	44	3.75	5
Physical Therapist Aides	180	260	44	3.75	10
Dental Hygienists*	740	1,060	43	3.66	45
Audiologists	140	200	43	3.63	5
Software Developers, Systems Software*	1,000	1,420	42	3.57	50
Diagnostic Medical Sonographers*	310	440	42	3.56	20
Social and Community Service Managers*	290	410	41	3.52	20
Medical and Public Health Social Workers*	580	820	41	3.52	40
Mental Health Counselors	290	410	41	3.52	20
Medical Secretaries*	1,130	1,590	41	3.47	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 Labor and Center for Business and Economic Research, The University of Alabama.

**Table 4.12 Selected High-Earning Occupations (Base Year 2010 and Projected Year 2020)**

Occupation	Employment		Annual Growth (Percent)	Average Annual Job Openings	Mean Annual Salary (\$)
	2010	2020			
Obstetricians and Gynecologists	90	120	2.92	5	264,692
Surgeons	210	260	2.16	10	245,174
Internists, General*	200	260	2.66	10	239,237
Physicians and Surgeons, All Other	1410	1590	1.21	45	212,150
Dentists, General	470	570	1.95	25	209,439
Chief Executives	1450	1520	0.47	45	194,021
Psychiatrists	70	90	2.54	0	182,336
Family and General Practitioners*	340	440	2.61	15	153,002
Pediatricians, General	110	130	1.68	5	146,775
Natural Sciences Managers	30	30	0.00	0	139,467
Optometrists*	170	220	2.61	10	134,355
Administrative Law Judges, Adjudicators, and Hearing Officers	30	30	0.00	0	133,666
Lawyers*	2920	3410	1.56	105	128,325
Financial Managers	1820	1960	0.74	45	119,597
Petroleum Engineers	NA	NA	0.00	0	118,815
General and Operations Managers	9390	9950	0.58	230	116,566
Computer and Information Systems Managers*	710	880	2.17	30	112,012
Pharmacists	1300	1530	1.64	55	110,759
Engineering Managers	540	590	0.89	15	110,745
Advertising and Promotions Managers	230	260	1.23	10	110,460
Aerospace Engineers	NA	NA	1.68	5	109,807
Marketing Managers	390	460	1.66	20	108,885
Sales Managers	1390	1600	1.42	60	107,917
Education Administrators, Postsecondary	530	630	1.74	25	107,546
Human Resources Managers	240	280	1.55	10	106,964
Training and Development Managers	90	100	1.06	5	101,142
Podiatrists	40	50	2.26	0	100,502
Personal Financial Advisors*	890	1190	2.95	40	98,781
Administrative Services Managers	390	440	1.21	15	98,131
Purchasing Managers	240	270	1.18	10	97,642
Electronics Engineers, Except Computer	200	230	1.41	10	95,280
Management Analysts*	1850	2490	3.02	95	94,311
Physicists	20	30	4.14	0	93,948
Compensation and Benefits Managers	80	90	1.18	0	93,351
Public Relations Managers	380	430	1.24	15	93,217
Managers, All Other	2870	2970	0.34	75	93,145
Engineers, All Other	250	290	1.50	10	92,647
Medical and Health Services Managers*	790	970	2.07	35	92,228
Securities, Commodities, and Financial Services Sales Agents	740	800	0.78	25	91,299
Construction Managers	2060	2330	1.24	40	91,189
Transportation Inspectors	70	80	1.34	5	89,385
Industrial Production Managers	390	460	1.66	15	88,966
Judges, Magistrate Judges, and Magistrates	170	170	0.00	5	88,193
Transportation, Storage, and Distribution Managers	250	270	0.77	10	87,194
Clinical, Counseling, and School Psychologists	160	210	2.76	10	86,112
Software Developers, Applications*	750	1020	3.12	35	85,579
Microbiologists	20	20	0.00	0	85,214
Chemical Engineers	10	20	7.18	0	85,202
Emergency Management Directors	100	100	0.00	5	84,630
Computer and Information Research Scientists	40	50	2.26	0	84,187

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 4.13 Selected Sharp-Declining Occupations (Base Year 2010 and Projected Year 2020)**

Occupation	Employment		Net Change	Percent Change
	2010	2020		
Postal Service Mail Sorters, Processors, and Processing Machine Operators	720	370	-350	-49
Switchboard Operators, Including Answering Service	870	670	-200	-23
Sewing Machine Operators	600	460	-140	-23
Postal Service Mail Carriers	1140	1020	-120	-11
Postal Service Clerks	240	120	-120	-50
Pressers, Textile, Garment, and Related Materials	300	260	-40	-13
Door-To-Door Sales Workers, News and Street Vendors, and Related Workers	240	200	-40	-17
Photographic Process Workers and Processing Machine Operators	220	180	-40	-18
Fallers	170	150	-20	-12
Shampooers	170	150	-20	-12
Postmasters and Mail Superintendents	70	50	-20	-29
Reporters and Correspondents	110	100	-10	-9
Floor Layers, Except Carpet, Wood, and Hard Tiles	110	100	-10	-9
Prepress Technicians and Workers	100	90	-10	-10
Sewers, Hand	80	70	-10	-13
Fine Artists, Including Painters, Sculptors, and Illustrators	70	60	-10	-14
Helpers--Roofers	70	60	-10	-14
Air Traffic Controllers	NA	NA	*	-25
Electrical and Electronics Installers and Repairers, Transportation Equipment	NA	NA	*	-25
Telephone Operators	30	20	-10	-33

Note: Employment data are rounded to the nearest 10. NA - Not available. \* - Not available due to disclosure restrictions.

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 4.14 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 4.15 shows the percentage of selected occupations in the region 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 4.15 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 4.14 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 4.15 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	35	40	48
Active Listening	98	90	82
Critical Thinking	95	90	80
Learning Strategies	5	0	6
Mathematics	10	5	10
Monitoring	60	80	46
Reading Comprehension	85	70	66
Science	23	10	34
Speaking	90	90	74
Writing	58	50	56
<b>Complex Problem Solving Skills</b>			
Complex Problem Solving	63	45	56
<b>Resource Management Skills</b>			
Management of Financial Resources	3	0	2
Management of Material Resources	0	0	0
Management of Personnel Resources	5	5	24
Time Management	28	35	26
<b>Social Skills</b>			
Coordination	45	70	32
Instructing	13	20	8
Negotiation	5	0	12
Persuasion	8	10	14
Service Orientation	45	60	16
Social Perceptiveness	60	80	44
<b>Systems Skills</b>			
Judgment and Decision Making	75	55	76
Systems Analysis	13	0	10
Systems Evaluation	8	0	4
<b>Technical Skills</b>			
Equipment Maintenance	3	0	0
Equipment Selection	3	0	0
Installation	0	0	0
Operation and Control	5	5	0
Operation Monitoring	8	5	2
Operations Analysis	3	0	8
Programming	8	0	4
Quality Control Analysis	5	5	0
Repairing	3	0	0
Technology Design	0	0	0
Troubleshooting	3	0	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, science, management of personnel resources, negotiation, persuasion, judgment and decision making, and operations analysis skills than both high-demand and fast-growing jobs. These are skills that require long training periods and postsecondary education. However, high-earning jobs require somewhat less basic, social, systems, and technical skills. High-demand occupations require more basic skills, systems, and technical skills than fast-growing occupations.

Table 4.16 shows skill gap indexes for all 35 skills in Table 4.14 based on previous occupation projections (2008 to 2018). Skills gap indexes range from zero 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, system, and technical skills. Although the skills gap indexes are for a previous projection period, they are applicable to the current projections. 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, technical, and complex problem solving skills; the scale of training should be raised for basic and social skills.

## **Education and Training Issues**

Educational attainment in Region 4 is above that of the state as a whole. About 86 percent of residents age 25 and over had graduated from high school in 2008 to 2012, compared to 83 percent for Alabama; 27 percent have a bachelor's or higher degree versus 22 percent for the state. Skill and education requirements for jobs keep rising. This highlights a strong need to raise educational attainment in the region, especially for Blount, Chilton, Walker, and St. Clair counties.

Table 4.17 shows the number of selected occupations in the region for which a particular education/training category is most common. In general, high-earning occupations require high educational attainment levels; six of the 50 high-earning occupations do not require a bachelors' or higher degree. Thirty-one (78 percent) of the 40 high-demand occupations require an associate degree at the minimum and 26 (65 percent) require a bachelor's or higher degree. Thirteen (65 percent) of the 20 fast-growing occupations require an associate degree at the minimum, with eight (40 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 requiring a high school diploma or

GED at a minimum. Of the region's 736 occupations, 47 are expected to decline over the period and education and training for these should slow accordingly.

**Table 4.16 Skills Gap Indexes (Base Year 2008 and Projected Year 2018)**

<b>Skill</b>	<b>Total Openings (Projected Demand)</b>	<b>Replacement Index</b>	<b>Skills Gap Index</b>
Reading Comprehension	9,465	66	100
Active Listening	9,425	67	97
Critical Thinking	8,680	65	94
Speaking	7,595	64	91
Active Learning	7,685	65	89
Coordination	7,375	65	86
Monitoring	6,975	65	83
Writing	6,750	66	80
Instructing	6,485	64	77
Time Management	6,365	64	74
Learning Strategies	6,130	64	71
Social Perceptiveness	5,690	64	69
Service Orientation	5,270	63	66
Persuasion	4,800	66	63
Judgment and Decision Making	4,510	66	60
Complex Problem Identification	4,165	64	57
Mathematics	3,745	66	54
Equipment Selection	2,890	66	51
Negotiation	2,630	69	49
Troubleshooting	2,090	64	46
Equipment Maintenance	1,825	64	43
Management of Personnel Resources	2,220	75	40
Installation	1,500	62	37
Repairing	1,045	65	34
Operations Analysis	1,050	65	31
Systems Evaluation	855	61	29
Management of Financial Resources	1,360	75	26
Operation and Control	1,030	66	23
Quality control	935	66	20
Science	780	62	17
Operation Monitoring	1,200	71	14
Systems Analysis	640	59	11
Management of Material Resources	740	77	9
Technology Design	535	65	6
Programming	140	61	3

Source: Alabama Department of Labor.

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

**Table 4.17 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	9	1	16
Master's Degree	4	4	1
Work Experience Plus a Bachelor's or Higher Degree	4	1	17
Bachelor's Degree	9	2	10
Associate Degree	5	5	2
Postsecondary Non-Degree Plus On-the-job Training	0	0	0
Postsecondary Non-Degree	1	0	0
Some College, no Degree Plus On-the-job Training	1	0	1
Some College, no Degree	0	0	0
High School Diploma Plus On-the-job Training	4	4	0
High School Diploma	0	0	3
Less than High School Plus On-the-job Training	3	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

From a 2010 base, worker shortfalls of 28,906 and 50,617 are expected for 2020 and 2030 respectively (Table 4.18). This is because job growth is expected to be faster than the growth of the main working age population. A focus on worker skills and the anticipated worker shortfalls must be a priority through 2030.

**Table 4.18 Expected Worker Shortfall**

	<b>2010-2020</b>	<b>2010-2030</b>
Total population growth (percent)	7.1	12.9
Age 20-64 population growth (percent)	2.5	3.5
Job growth (percent)	8.6	14.1
Worker shortfall (percent)	6.0	10.6
Worker shortfall (number)	28,906	50,617

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

Employment is critical to economic development and so strategies to address potential skill needs and worker shortfalls must be adopted and implemented. Such strategies should aim at increasing labor force participation, encouraging in-migration, and raising worker productivity and must 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) offer economic opportunities that attract new and younger residents; (6) encouragement of older worker participation in the labor force; and (7) facilitation of in-commuting.

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, systems, and complex problem solving 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 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 4.13 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 persons in poverty, those receiving welfare, those in sparsely populated areas, and those on active parole. These populations are often outside of the mainstream economy and are in poverty. They usually have difficulty finding work because they have low levels of educational attainment, lack occupational skills, or face geographic or other barriers. 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 region's population growth rate is adequate to meet the expected long term job demands barring future economic slowdowns. Higher employment demand could be served by in-commuting. However, new residents can be attracted using the higher-paying job opportunities from the region'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 region's workforce challenge. Such policies can 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 4.5), 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 region'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 would help raise personal income for the region 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 even for a region that has relatively high 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.