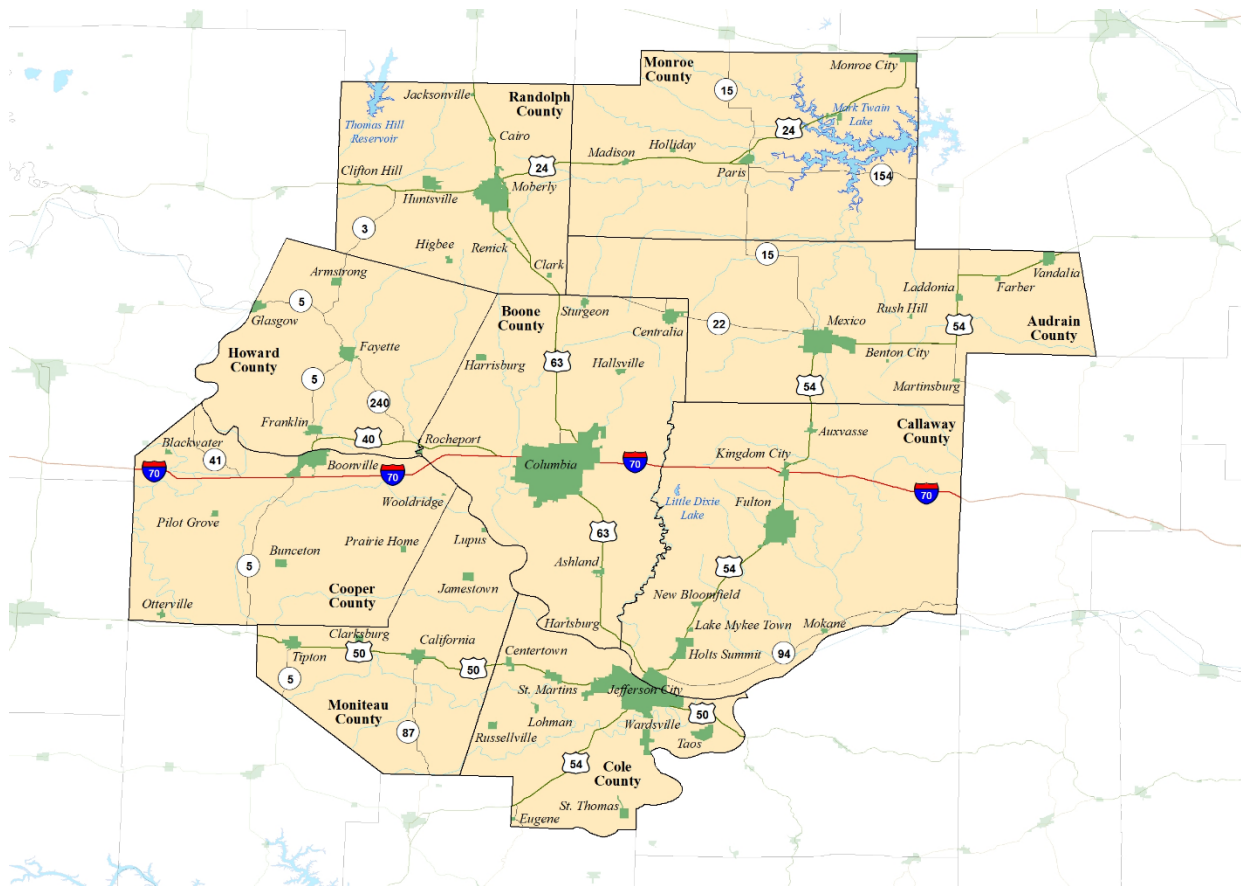


Columbia/Boone County Labor Basin Labor Availability Analysis – 2020

Including a comparison to data from the 2001, 2002, 2003, 2005, 2007, and 2015 Labor Availability Analyses

Audrain • Boone • Callaway • Cole • Cooper
Howard • Moniteau • Monroe • Randolph



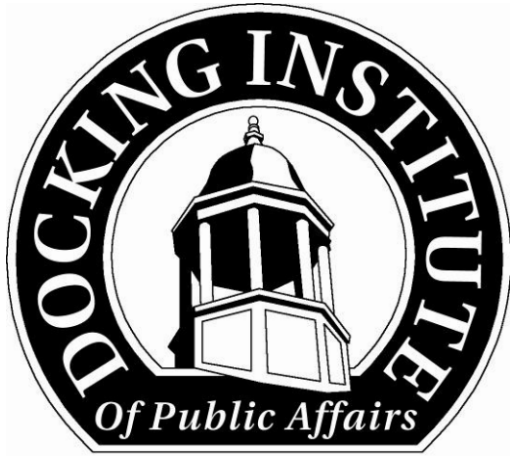
Prepared For

**Regional Economic Development, Inc.
Columbia Missouri**

By

The Docking Institute of Public Affairs

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Columbia/Boone County Labor Basin Labor Availability Analysis - 2020

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Columbia/Boone County Labor Basin Labor Availability Analysis

Executive Summary

The Columbia/Boone County Labor Basin includes Audrain, Boone, Callaway, Cole, Cooper, Howard, Moniteau, Monroe, and Randolph Counties in Missouri. The purpose of this report is to assess the “Available Labor Pool” in this labor basin. The “Available Labor Pool” represents those who indicate that they are looking for employment or would consider changing their jobs for the right employment opportunity.

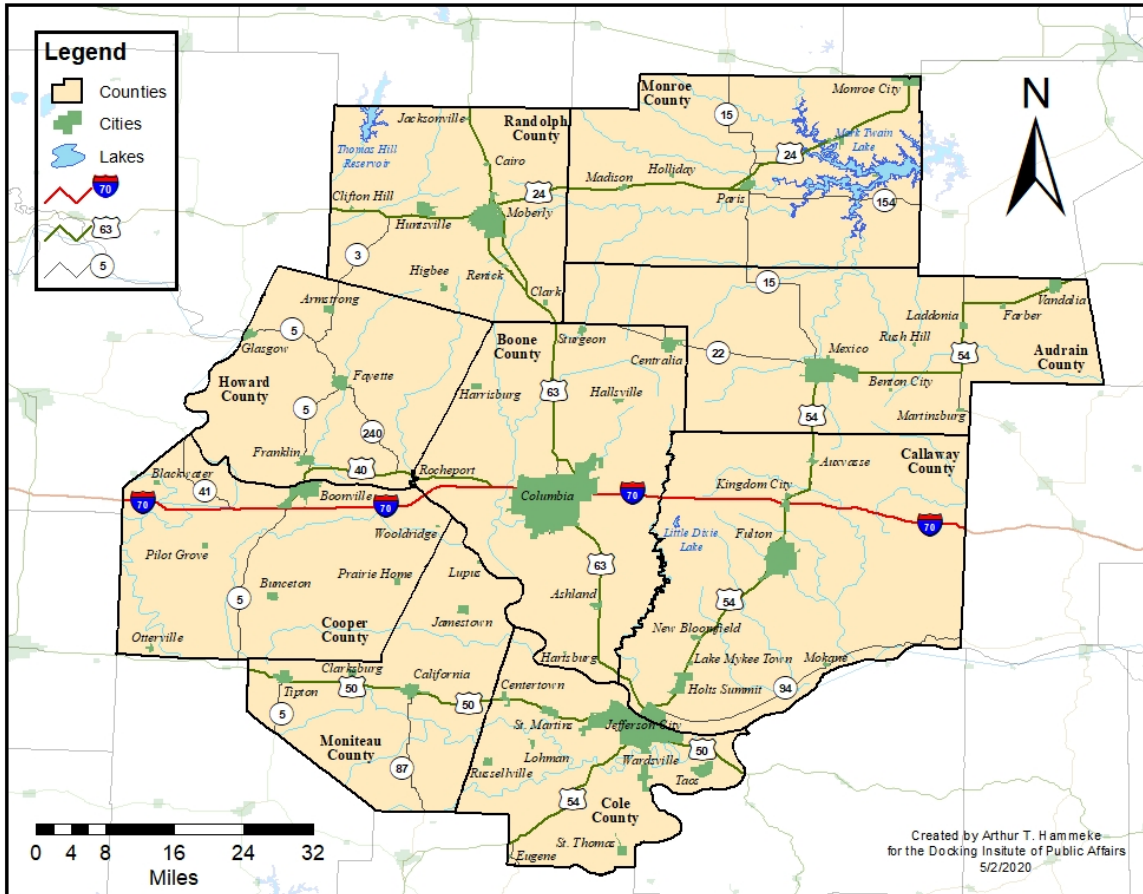
The Docking Institute’s independent analysis of this labor basin shows that:

- The population of the Columbia/Boone County Labor Basin is 404,573. About 30% of the population (or 119,471 individuals) is considered to be part of the Available Labor Pool.
- Of the non-working members of the Available Labor Pool, an estimated 7,561 (6.3%) are currently looking for work and 19,660 (16.5%) are interested in working for the right opportunities. Of the working members of the Available Labor Pool, 24,197 (20.3%) are currently looking for work, while 68,053 (57%) are interested in a different job given the right opportunities.
- About three-quarters (73%) of the Available Labor Pool has at least some college experience and 97% has at least a high school diploma. The average age for members of the Pool is about 45 years old, and women make up less than half (46.8%) of the Pool.
- An estimated 18,169 members of the Available Labor Pool are currently employed as general laborers, while an additional 10,909 work in government services or technical/high skill blue-collar occupations. An estimated 45,484 members of the Pool work in service sector jobs, while 18,382 work in professional white-collar jobs. About a fifth (26,525) are not currently working.
- About 82% of the Available Labor Pool indicates that they are “willing to work outside of their primary field of employment for a new or different employment opportunity.”
- About two-fifths (42%) of the members of the Available Labor Pool will commute up to 45 minutes, one way, for an employment opportunity, while 80% will commute up to 30 minutes for employment.
- The five most important desired benefits in order are good salary or hourly wage, good retirement benefits, good health benefits, on-the-job (OJT) or paid training, and good vacation benefits.
- An estimated 11,155 members (9%) of the Available Labor Pool are interested in a new job at \$10 an hour, 30,936 (26%) are available at \$15 an hour, and 56,176 (47%) are available at \$20 an hour.
- Of the 92,945 members in the subset of *employed members* of the Available Labor Pool, 18,124 (19%) consider themselves underemployed.
- A comparison of data from 2015 and 2020 shows that there was a larger percentage of *employed* pool members in 2015 than in 2020. There was a smaller percentage of general laborers in the 2015 pool than in the 2020 pool, while the 2020 contains larger percentages of high skill laborers, service sector workers, and professional workers.

The Columbia/Boone County Labor Basin

The Columbia/Boone County Labor Basin includes nine counties in central Missouri (see Map 1 below).

Map 1: Columbia/Boone County Labor Basin



The Columbia/Boone County Labor Basin has a total population of approximately 404,573, and a Civilian Labor Force of 203,375. The total number of employed is 197,806 and the average unemployment rate was 2.73% at the time of this study.

The Docking Institute’s analysis suggests that the basin contains an Available Labor Pool of 119,471 individuals. The Available Labor Pool is composed of workers categorized as either 1) currently not working *and* looking for full-time employment, 2) not working *but* interested in full-time employment, 3) currently working (full- or part-time) *and* looking for other full-time employment, and 4) currently employed *but* interested in different full-time employment for the right opportunities. Please see the Methods section – page 31 – for more information about the Institute’s Available Labor Pool analysis methodology and the survey research methods used for this study.

Components of the Report

The majority of this report assesses the characteristics of the Available Labor Pool in the Columbia/Boone County Labor Basin by answering the following questions:

- What proportion of the labor force – employed, unemployed, homemaker, student, retired and disabled – are interested in a new employment opportunity?
- What skills and education levels do those who would consider a new employment opportunity have?
- What types of jobs have these workers and potential workers had in the past?
- What types of considerations (pay, benefits, commute time) shape their decision-making?
- What are some of the characteristics of the general laborers, skilled blue-collar workers, service and support workers and professional white-collar workers?
- What proportion of the Available Labor Pool is willing to change fields of employment?
- What work shifts are Available Labor Pool members willing to work?
- What is the level of job satisfaction among the Available Labor Pool members?
- How many Available Labor Pool members are underemployed?

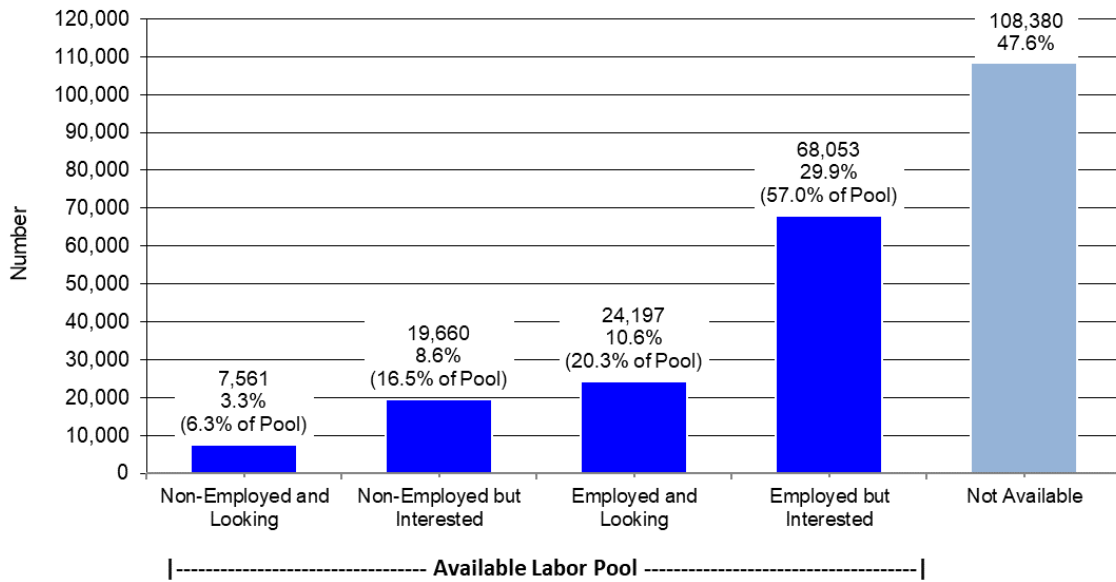
Comparative Analysis

Finally, this report provides a comparative analysis of key findings from the 2001, 2002, 2003, 2005, 2007, and 2015 labor availability reports conducted in the Columbia, Missouri, area.

The Columbia/Boone County Labor Basin’s Available Labor Pool

It is estimated that 7,561 (6.3%) members of the Available Labor Pool are non-employed¹ and looking for employment, while 19,660 (16.5%) are non-employed but interested in a job for the right opportunities. In addition, 24,197 (20.3%) members of the Pool are employed and currently looking for different employment, while 68,053 (57%) are employed but interested in new employment for the right opportunities.

Figure 1: The Available Labor Pool for the Columbia/Boone County Labor Basin



The Available Labor Pool is composed of workers categorized as either 1) currently not employed and looking for full-time employment, 2) currently not employed *but* interested in full-time employment, 3) currently employed *and* looking for full-time employment, 4) currently employed *but* interested in other full-time employment for the *right opportunities*.

¹ The terms “non-employed,” “not employed” and “non-working” refer to officially unemployed members of the Civilian Labor Force *and* any non-employed/non-working full-time students, homemakers, retirees, and disabled individuals that indicate they are available for employment.

Map 2 shows how each Zip Code area compares to all other Zip Code areas in terms of the percent of total available labor in the Columbia/Boone County Labor Basin. The map shows:

- Ten percent or more of the entire labor basin's Available Labor Pool is located in Zip Codes areas within Boone and Cole Counties. (See the purple area on the map.)
- Between 5% and 9.99% of the entire labor basin's Available Labor Pool is located in Zip Code areas within Boone County. (See the red area on the map.)
- Zip Code areas in Audrain, Boone, Callaway, Cole, Cooper, Moniteau, and Randolph counties contain 1% to 4.99% of the basin's Available Labor Pool. (See the orange areas on the map.)
- Zip Code areas in Audrain, Boone, Callaway, Cole, Cooper, Moniteau, Monroe, and Randolph counties contain .5% to .99% of the Pool. (See the yellow areas on the map.)
- Finally, less than .5% of the Pool is located in Zip Code areas spread throughout the rest of the basin. (See the cream colored areas on the map.)

Map 2: Percent of Total Available Labor in Basin by Zip Code

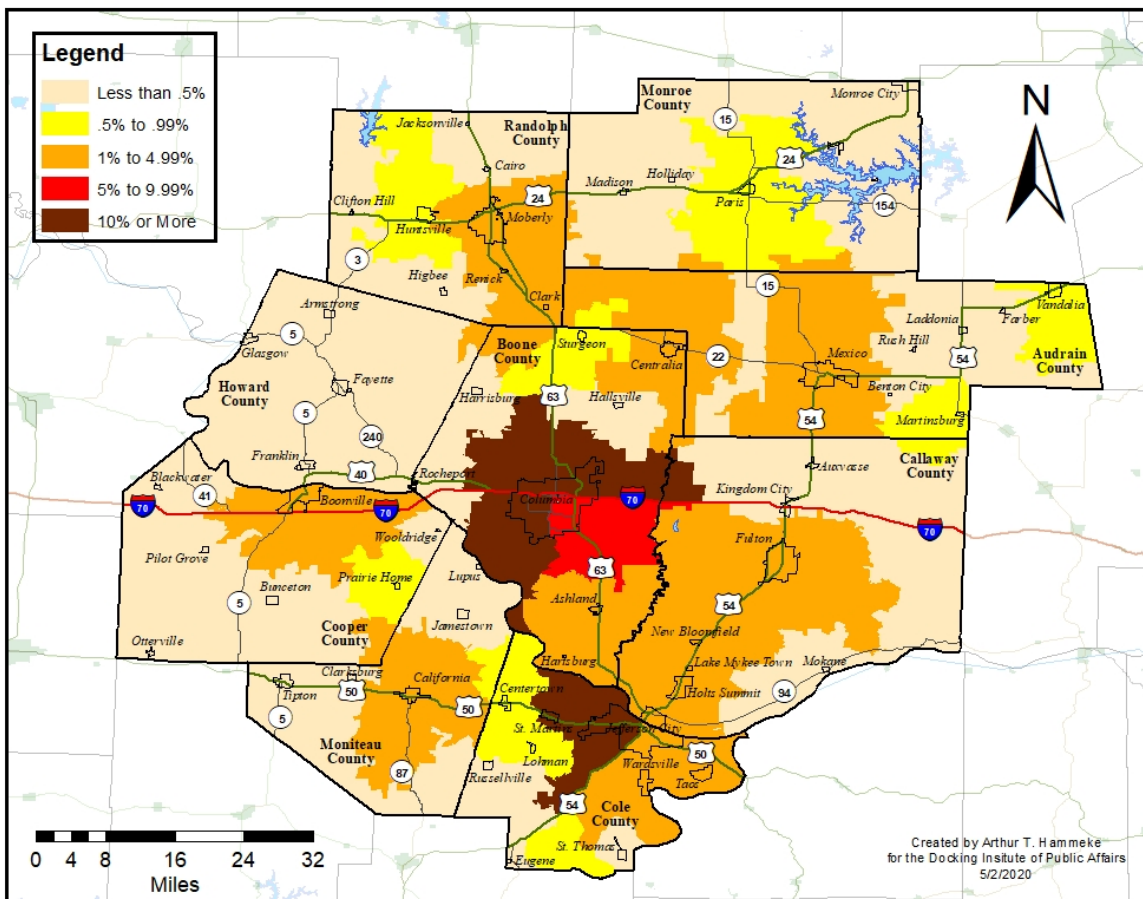


Table 1 shows the gender, age and education levels of the 119,471-member Available Labor Pool. Less than half (46.8%) of the Pool is women, and the average age is about 45 years old. Most (96.6%) have at least a high school diploma, almost three-quarters (73%) have **at least** some college education, and two-fifths (40.9%) have **at least** a bachelor's degree.

Table 1: Age, Gender, and Education Levels of Available Labor Pool

Age Information	Age in 2020		
Range	20 to 68		
Mean Average	45		
Median Average	46		
Gender	Number	Percent	
Female	55,912	46.8	
Male	63,558	53.2	
Total	119,471	100	
Highest Level of Education Achieved			Cumulative Percent
Doctoral Degree	4,062	3.4	3.4
Masters Degree	13,022	10.9	14.3
Bachelors Degree	31,779	26.6	40.9
Associates Degree	12,186	10.2	51.1
Some College (including current students)	26,164	21.9	73.0
High School Diploma	28,195	23.6	96.6
Less HS Diploma	4,062	3.4	100
Total	119,471	100	
"Do you speak Spanish?"	Number	Percent	
"Yes"	30,433	25.5	
<i>Speak Very Well</i>	2,386	7.8	} These percentages represent portions of 25.5%
<i>Speak Fairly Well</i>	4,841	15.9	
<i>Speak Only a Little</i>	23,207	76.3	
		100	

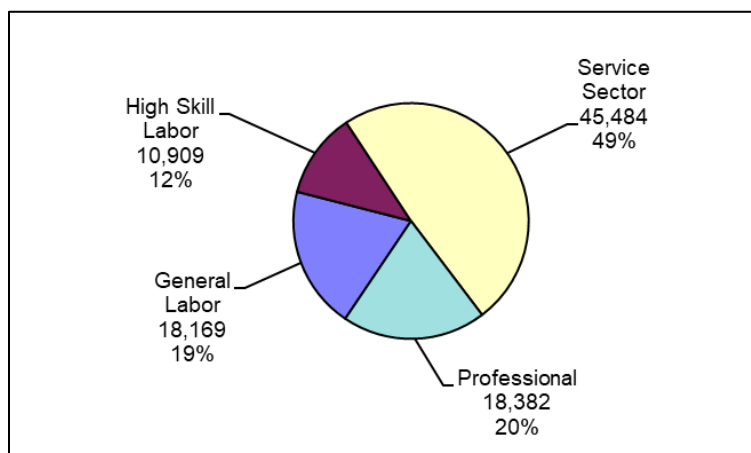
Table 2 shows the various occupational categories of the 119,471-member Available Labor Pool. General labor occupations represent 15.2% of the entire Available Labor Pool, while high-skilled, blue-collar jobs make up 9.1%. Traditional service-related occupations represent 38.1% of the Available Labor Pool, while professional occupations represent 15.4% of the Available Labor Pool. Non-employed members of the Pool make up about one-fifth (22.2%) of the total.

Table 2: Major Occupational Categories of Available Labor

	Number	Percent	Years at Job	
			Mean	Median
General Labor/Delivery	12,834	10.7	16.3	9.7
Manufacturing/Maintenance/Trucking	5,335	4.5	14.9	9.8
Total General Labor	18,169	15.2	15.6	9.8
Mechanic/Welder/Comp Tech	6,261	5.2	15.4	13.9
Crew Management/Protection Services	4,648	3.9	13.5	14.2
Total Highly-Skilled Labor	10,909	9.1	14.5	14.1
Customer Service	17,149	14.4	9.2	5.0
Clerical	1,574	1.3	17.2	21.5
Office or Dept Manager	13,373	11.2	7.9	5.0
Health Aid/Nurse	6,881	5.8	13.7	6.6
Education Aid/Teacher	6,508	5.4	13.0	10.3
Total Service Sector	45,484	38.1	12.2	9.7
Exec Management	3,960	3.3	7.2	5.0
Accounting/Engineering	8,852	7.4	9.6	6.0
Doctor/Professor/Attorney	3,762	3.1	17.6	19.0
Writer/Artist/Musician	1,808	1.5	8.2	9.0
Total Professional Sector	18,382	15.4	10.7	9.8
Homemaker/Student/Unemployed	9,803	8.2	n/a	n/a
Retired/Disabled	16,723	14.0	n/a	n/a
Total Non-Employed	26,525	22.2		
Total	119,471	100		

Figure 2 shows the occupational sectors of the *employed members* of the Available Labor Pool only. The *percentages* shown in Figure 2 differ from those presented in Table 2 because the table includes non-employed Available Labor Pool members.

Figure 2: Occupational Sectors of Available Labor (Employed Only)



Current Skills and Work Experiences

To gain perspective on the types of workers that are available for new and/or different employment in the Columbia/Boone County Labor Basin, survey respondents were asked questions assessing work skills and previous work experience.

Table 3 and Figure 3 (next page) show the current employment status and previous work or training experience of Available Labor Pool members. Table 3 shows the number of workers currently employed in various job categories, as well as the number of workers and non-workers that have previous work or training experience in those same job categories. The table also shows the sum of working Available Labor Pool members currently employed in a job category *plus* those that indicate previous training or experience in that particular field.

For example, 7,919 members of the Pool are currently employed as general labor, construction, cleaners, and similar positions. An additional 4,265 Pool members (employed and non-employed) had previous employment experience or training in one of those jobs, for a total of 12,184 individuals.

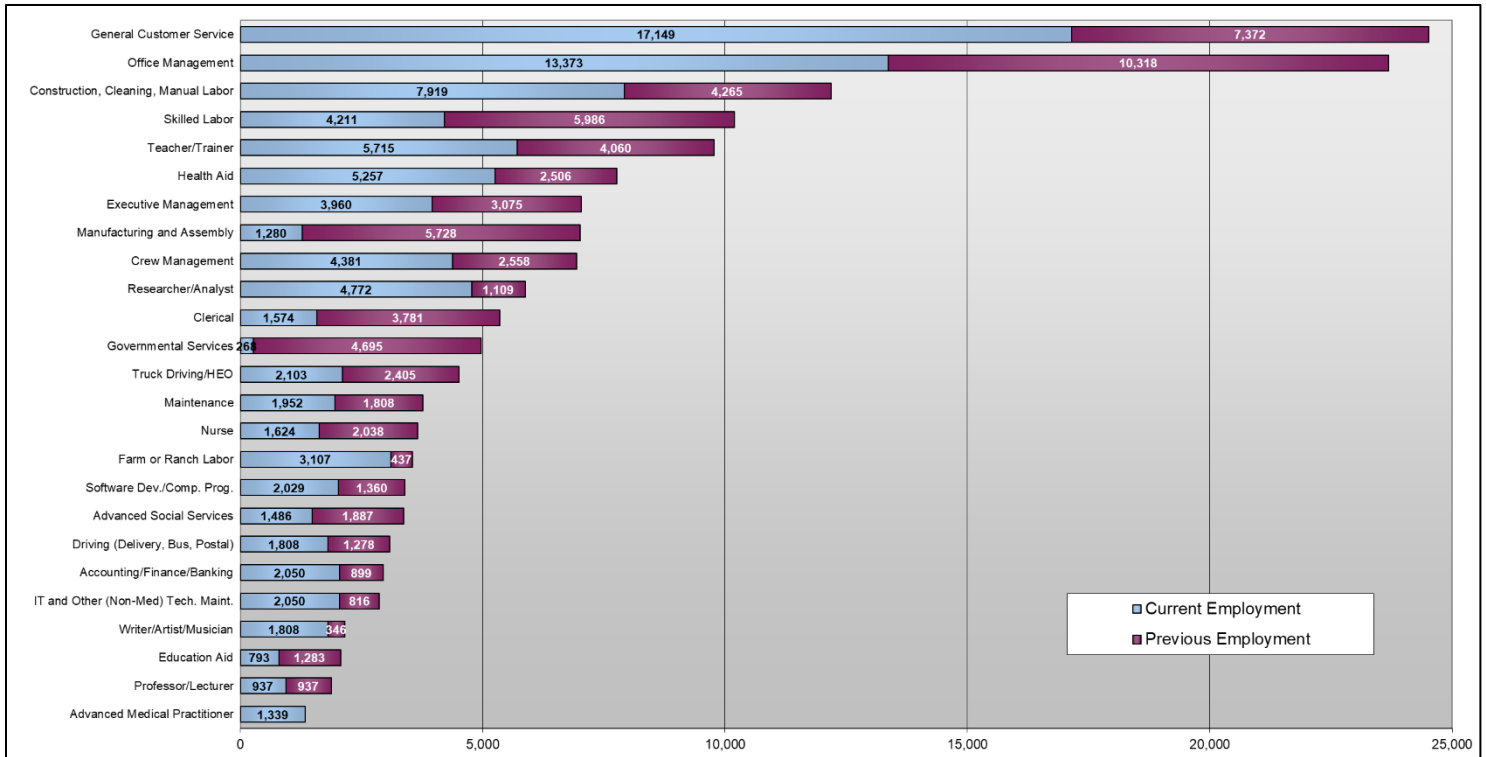
Table 3: Current Work Experience Plus Previous Work or Training Experience

	Current Employment* Number +	Previous Work/Training Number =	Current plus Previous Work or Training** Number
Working with Hands			
Construction, Cleaning, Manual Labor	7,919	4,265	12,184
Farm or Ranch Labor	3,107	437	3,543
Manufacturing and Assembly	1,280	5,728	7,008
Maintenance	1,952	1,808	3,761
Driving (Delivery, Bus, Postal)	1,808	1,278	3,087
Truck Driving/HEO	2,103	2,405	4,508
Skilled Labor	4,211	5,986	10,197
Crew Management	4,381	2,558	6,939
Working with People			
General Customer Service	17,149	7,372	24,521
Office Management	13,373	10,318	23,690
Governmental Services	268	4,695	4,962
Executive Management	3,960	3,075	7,035
Advanced Social Services	1,486	1,887	3,373
Working with Numbers			
Clerical	1,574	3,781	5,354
Accounting/Finance/Banking	2,050	899	2,949
Researcher/Analyst	4,772	1,109	5,882
Working with Technology			
IT and Other (Non-Med) Tech. Maint.	2,050	816	2,867
Software Dev./Comp. Prog.	2,029	1,360	3,389
Engineer/Designer	0	0	0
Providing Health Services			
Health Aid	5,257	2,506	7,763
Nurse	1,624	2,038	3,662
Advanced Medical Practitioner	1,339	0	1,339
Providing Educational Services			
Education Aid	793	1,283	2,076
Teacher/Trainer	5,715	4,060	9,775
Professor/Lecturer	937	937	1,874
Creative Arts			
Writer/Artist/Musician	1,808	346	2,154
Total	92,945	70,946	163,891

* Retired, disabled, non-working students, homemakers are not included.
 ** An individual member of the Pool is counted only once within each employment category. If an individual's previous job is the same as the current job, he or she is not counted in the Previous Job Category.

Figure 3 shows the same information as that presented in Table 3, but in graphic format. Many Available Labor Pool members report current work experience or previous work/training as front desk clerks, retail sales positions, receptionists and other jobs classified as “general customer service workers.” There are 17,149 working Pool members currently employed in this category and 7,372 previously employed/trained in this category, for a total of 24,521 individuals.

Figure 3: Current Work Experience Plus Previous Work or Training Experience



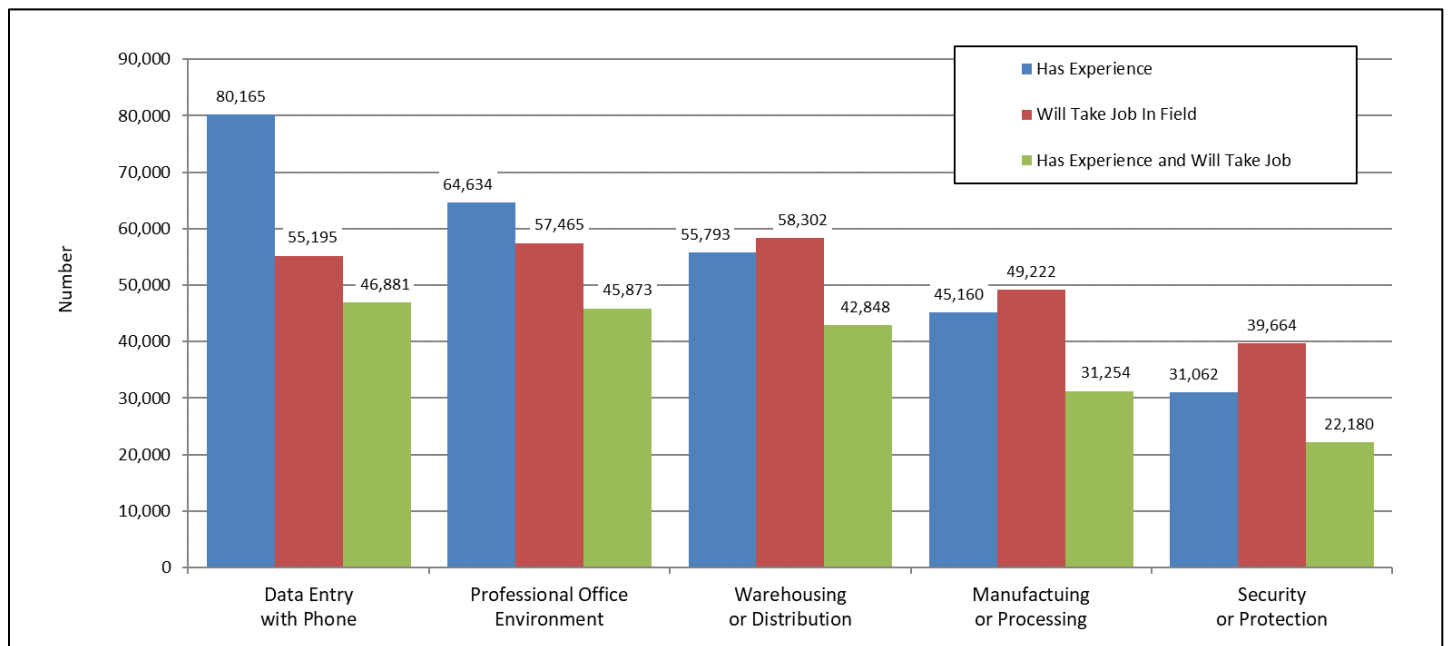
In addition to collecting data regarding the current employment status and previous work or training experience through a series of “open-ended” survey questions (the results of which are shown in the previous table and figure), respondents were asked about the five specific employment areas listed in Figure 4. Respondents were first asked if they had training or work experience in a specific field and then if they would take a job in that field regardless of their prior training or experience.

The figure shows that an estimated 80,165 Pool members report having training and/or experience in data entry with telephone operation, while fewer (55,195 individuals) would consider employment in that field. An estimated 64,634 members of the Pool have training and/or experience in a professional office environment, while slightly fewer (57,465 individuals) would take a job in that field.

An estimated 55,793 members of the Pool suggest that they have training or experience working in a distribution center or warehouse while 58,302 would consider a job in that field. An estimated 45,160 have experience working in a manufacturing plant or processing center while 49,222 would take a job in that field. Finally, 31,062 have training or experience in protection or security services, while 39,664 would consider employment in that field.

The third column shows the estimated number that have experience or training in a field **and** are willing to work in that field again.

Figure 4: Work Experience / Willing to Work in Field



Survey respondents indicating that they had training or experience in distribution/warehousing or manufacturing/processing were asked additional questions to assess the type of work they performed at those jobs.

Figures 5 and 6 show the responses to those questions. The figures show that more than a third (36%) of those indicating distribution/warehousing experience moved materials or loaded trucks. Additionally, more than two-fifths (44%) of those indicating training or experience in manufacturing/processing had jobs/training in procession, fabrication or assembly.

Figure 5: Work Experience in Distribution Center or Warehouse

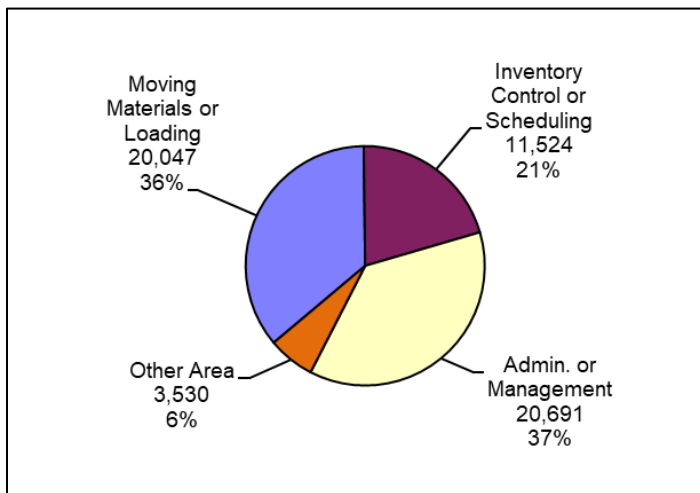
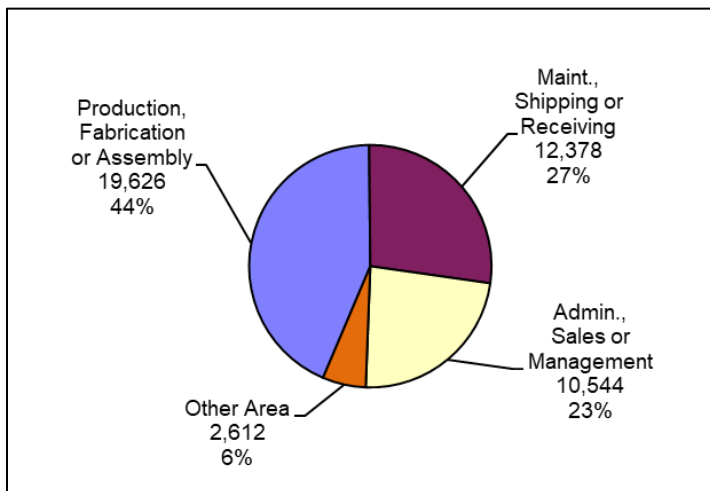


Figure 6: Work Experience in Manufacturing or Processing



Educational Experience and Job Satisfaction

Respondents that had completed at least some college or are currently enrolled in a community college, college, or university were asked to provide their major area of study. Answer options included:

Social Sciences: Sociology, Psychology, Anthropology, Politics and Social Work.

Biological Sciences and Health: Biology, Agriculture, Nursing, Pre-med, Pre-vet and Human Performance.

Physical Sciences and Engineering: Physics, Geology, Chemistry and Engineering.

Business and Economics: Management, Accounting, Finance, Marketing and Economics.

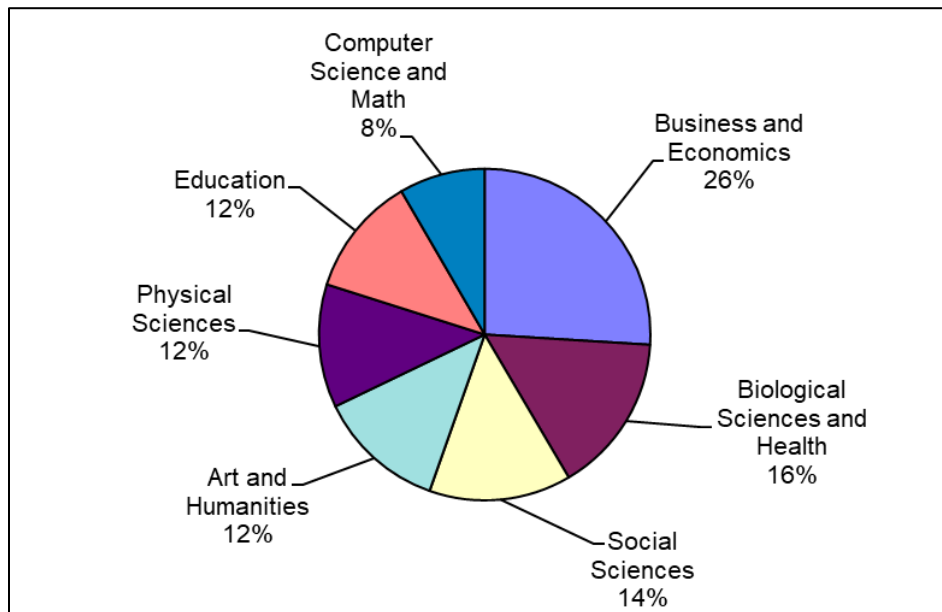
Education: Elementary and Secondary Teaching.

Computer Science and Math: Computer Programming or Technology, Networking, Web Design and Math.

Arts and Humanities: Art, Music, History, Philosophy and Languages.

Figure 7 shows that the largest group of Available Labor Pool members indicate a major in business and economics (26%). Also shown are Biological sciences (16%), social sciences (14%), arts and humanities (12%), physical sciences (12%), education (12%), and computer science and math (8%).

Figure 7: Undergraduate College Major (n=48,863)



Survey respondents with at least some college education were asked if they are attending or have attended a technical or community college. Figure 8 shows that 11% of these respondents have technical or community college experience.

Figure 8: Community College Experience

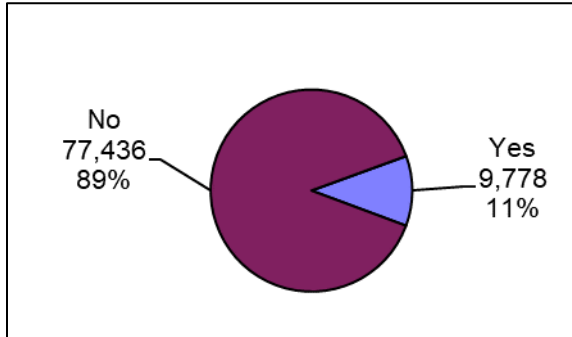


Figure 9 shows the area of study for community college students. More than a tenth (15%) report studying nursing/health related subjects, while 13% report studying information or computer technology and automotive technology (each).

Less than 10% are studying (or have studied) manufacturing technology, truck driving, office skills, and cosmetology.

Figure 9: Community College Area of Study (n=9,778)

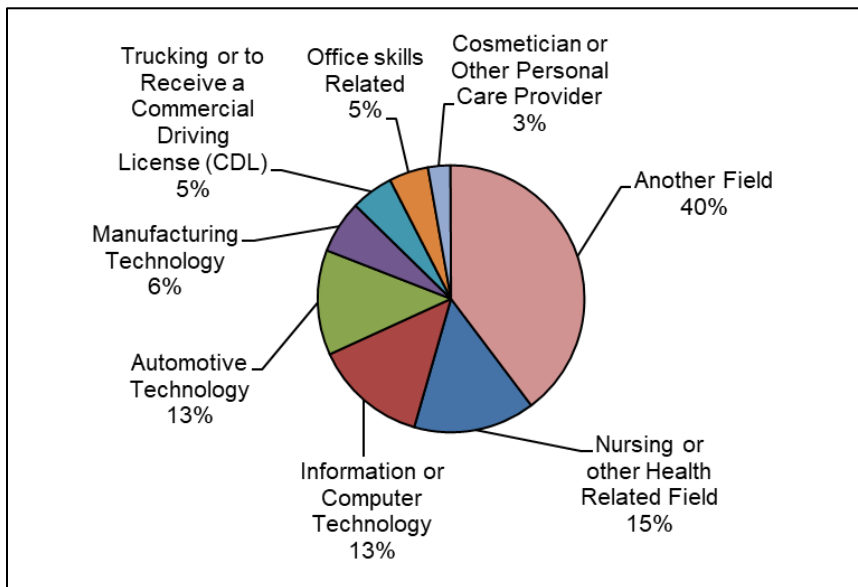


Figure 10 and Table 4 show responses to questions regarding job satisfaction. The figure and table report responses from *working survey respondents* only. The figure shows that about 27% of the working Available Labor Pool respondents “strongly agree” with a statement suggesting that they “enjoy the things I do,” while 66% “agree” with that statement. In all, 93% at least “agree” with that statement. In general, the figure strongly suggests that Available Labor Pool members are generally satisfied with their work and their work environments but are simply looking for and/or are available for new employment. Only about 55%, however, feel that they have a “fair chance at promotion” to another position.

Figure 10: Job Satisfaction Among Available Labor Pool Workers

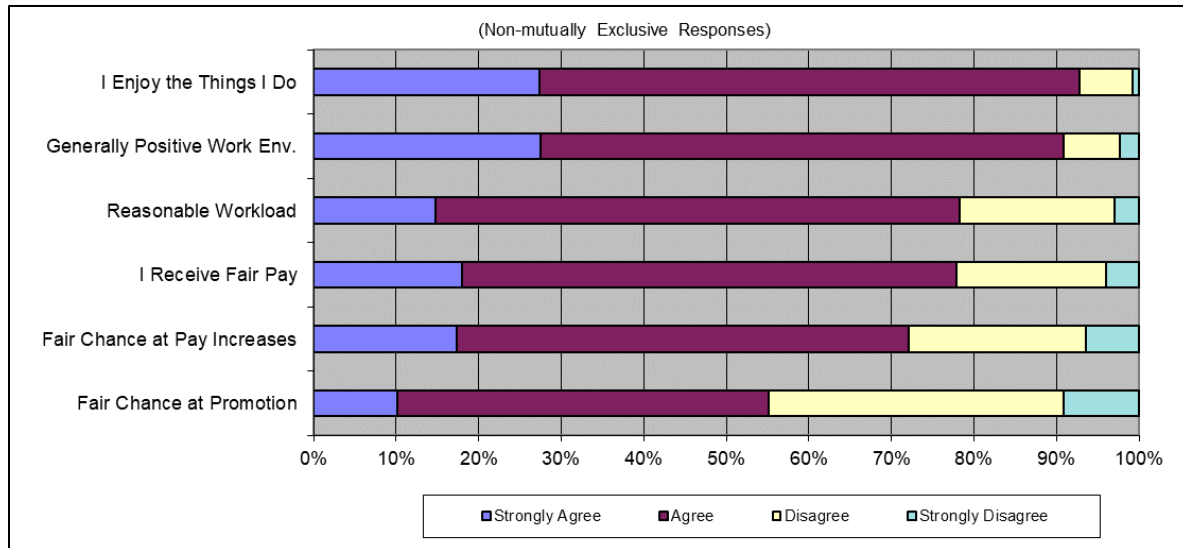


Table 4 shows combined “strongly agree” and “agree” responses of working Pool members and working non-Pool respondents. The table shows that 92.8% of the working Pool members at least “agree” with the statement regarding “enjoying the things I do,” while more (98%) of the working non-Pool respondents suggest the same.

The statement with the largest percentages of disparity between working Pool members and working non-Pool respondents is with regards to having “I receive fair pay.” About 89% of the working non-Pool respondents at least “agree” that they receive fair pay, while about 11% fewer (77.9%) of the working Pool members feel the same way.

Table 4: Job Satisfaction Among Workers: Pool and Non-Pool Members

	Strongly and Agree		Difference
	Pool Only Percent	Non-Pool Only* Percent	
I Enjoy the Things I Do	92.8	98.0	-5.2
Generally Positive Work Env.	90.9	99.2	-8.3
Reasonable Workload	78.3	85.8	-7.5
I Receive Fair Pay	77.9	89.2	-11.3
Fair Chance at Pay Increases	72.1	79.0	-6.9
Fair Chance at Promotion	55.1	64.0	-8.9

*This column represents working non-Pool respondents.

Considerations for Employment

An important consideration for many employers looking to locate or expand operations is whether workers are willing to pursue new employment opportunities. Some workers may be available for new employment but are unwilling to switch from their current job to a different type of position. A large percentage of those unwilling to change their jobs, might limit the types of employers that can enter the labor basin.

This does not seem to be the case for the Columbia/Boone County Labor Basin, however. Figure 11 shows that 97,966 (82%) members of the Available Labor Pool are willing to accept positions outside of their primary fields of employment.

Figure 11: Considerations for Employment

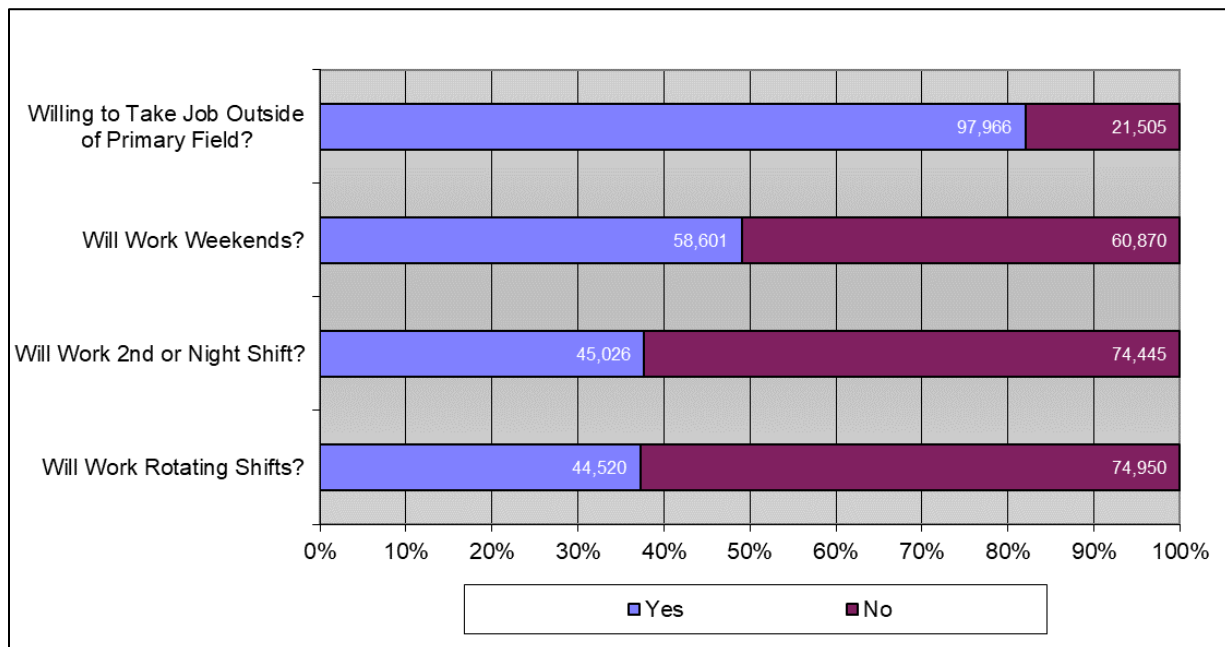
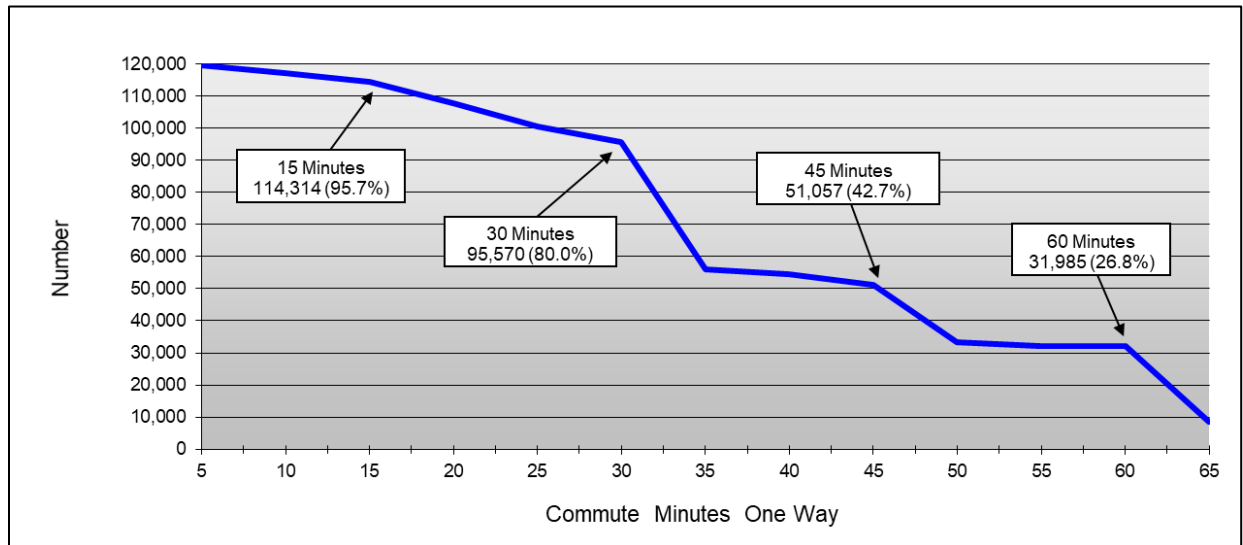


Figure 11 also shows responses to three questions regarding work shifts. Respondents were asked if they would be willing to work weekends, a second or night shift, and rotating shifts.

The figure shows that about 49% of the Available Labor Pool indicates that they are willing to work weekends. About 38% indicate that they are willing to work a second shift, while about 37% are willing to work rotating shifts for a new or different job.

Another important consideration for many employers is whether workers are willing to commute for a new or different employment opportunity. Figure 12 suggest that the Available Labor Pool in the Columbia/Boone County Labor Basin is open to commuting. More than two-fifths (42.7%) of the members of the Available Labor Pool will commute up to 45 minutes, one way, for an employment opportunity, while 80% will commute up to 30 minutes for employment. Almost all (95.7%) will travel up to 15 minutes for employment.

Figure 12: Available Labor by Commute Minutes



Available Labor Pool members were asked about various benefits that might be important for considering whether to take a new or different job. Respondents were asked if each benefit would be a “very important” consideration for taking a new job. Answer options included “yes” and “no.”

Figure 13 (next page) shows that the five most important benefits are, in order, good salary or hourly pay, good retirement benefits, good health benefits, on-the-job (OTJ) or paid training, and good vacation benefits. All of these benefits are considered “very important” by more than 80% Available Labor Pool each.

Flexible hours or flex-time follows closely at about 76%. The least desired benefits are good educational assistance and transportation assistance, considered “very important” by 39% and 25% of Available Labor Pool members, respectively.

Figure 13: Benefits Very Important to Change Employment

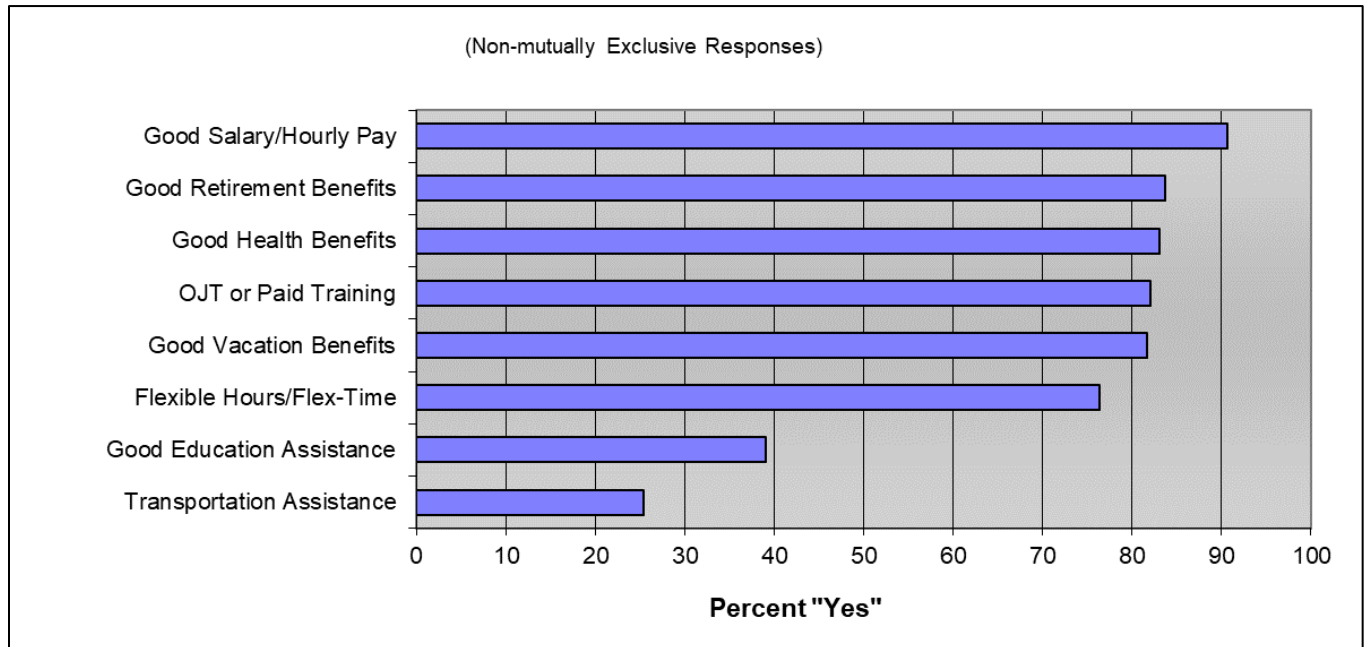


Table 5 lists some of these benefits, as well as percentages, of *working* Pool members that are currently offered these benefits. The left column shows the percentages of all Pool members that said the benefit is a *very important* consideration for taking a new or different job, while the right column shows the percentages of *working members* of the Available Labor Pool who are offered the benefit from their current employers. Flexible Hours/Flex-Time stands out with an almost 11% difference between those that desire that benefit and those that receive that benefit.

On the other hand, more than 12% of working Available Labor Pool members receive good educational assistance than those desire that benefit.

Table 5: Desired Benefits and Current Benefits Offered

	Benefit Important to Change Jobs Percent	Benefit Currently Offered* Percent	<i>Difference</i>
Good Salary/Hourly Pay	90.6	84.9	5.7
Good Retirement Benefits	83.7	78.6	5.1
Good Health Benefits	83.1	83.5	-0.4
OJT or Paid Training	82.0	77.3	4.7
Good Vacation Benefits	81.7	80.7	1.0
Flexible Hours/Flex-Time	76.4	65.5	10.9
Good Education Assistance	39.1	51.6	-12.5
Transportation Assistance	25.4	20.4	5.0

*This column represent working Pool members who receive the benefit.

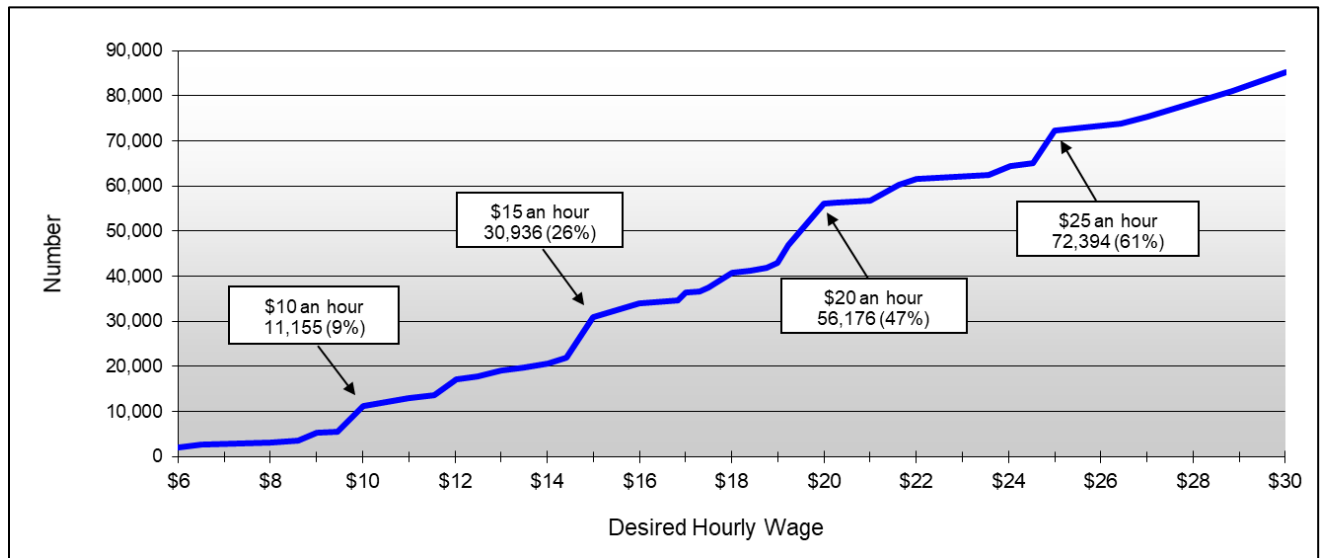
Wage Demands of Available Labor Pool

Wage demands are another important consideration for employers and economic developers. Figure 14 shows desired wages for members of the Available Labor Pool. It is estimated that 72,394 people (or 61% of the available labor) are interested in a new job at \$25 an hour².

An estimated 56,176 (47%) members of the Pool are interested in new employment opportunities at \$20 an hour, while 30,936 (26%) are interested at \$15 an hour.

Finally, an estimated 11,155 people (9%) are interested in a new job at \$10 an hour.

Figure 14: Available Labor by Hourly Wage



² See the Appendix for an hourly wage/annual salary conversion chart.

Underemployed Available Labor Pool Workers

Underemployment — individuals possessing skills and/or training levels that exceed the responsibilities of their current job — is a significant issue in many communities. To assess underemployment in the Columbia/Boone County Labor Basin, *employed members of the Available Labor Pool* were presented with a scenario describing underemployment.³ They were then asked a series of questions assessing if they perceive themselves as underemployed because: 1) their skill level is greater than their current job requires, 2) they possess higher levels of education than is required on the job, 3) they earned a higher income at a similar job previously, or 4) they are limited in the number of hours that they could work.

Of the 92,945 *employed members* of the Available Labor Pool (shown in Figure 15), almost a fifth answered “yes” to one or more of the questions presented above. These Pool members are considered “underemployed.” Figure 16 shows that the underemployed workers represent 19% (or 18,124 individuals) of the employed members of the Pool.

Figure 15: Employed and Unemployed Members of the Available Labor Pool

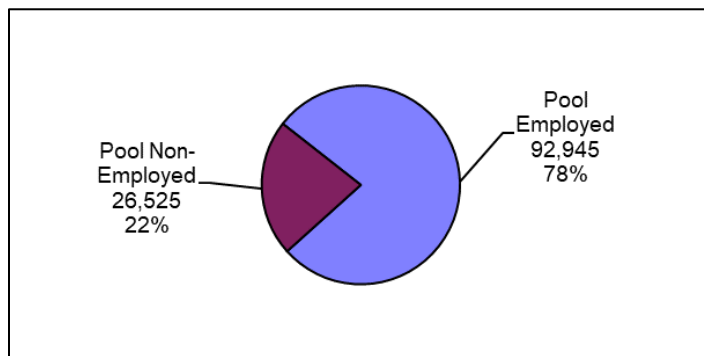
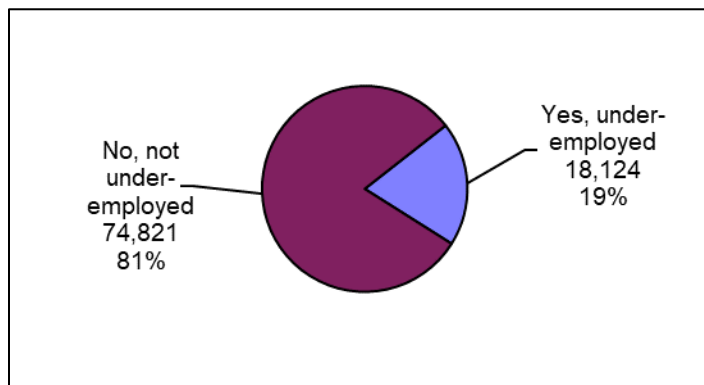


Figure 16: Underemployed Workers



³ “Because of circumstances, some workers have jobs that do not fully match their skills, education, or experiences. For example, a master plumber taking tickets at a movie theater would be a mismatch between skill level and job requirements. Do you consider yourself an underemployed worker because...?”

Figure 17 shows the percentages of the positive responses (i.e., “yes” answers) to the various measures of underemployment. Almost 22% of this subset of the Available Labor Pool consider themselves underemployed because they possess education levels exceeding those needed for their current jobs, while about 18% consider themselves underemployed because they earned more money at a past but similar job. Almost 18% also possess skills that are not being used currently on the job, and about 9% feel they are not offered enough work hours.

Figure 17: Reasons for Underemployment (n=18,124)

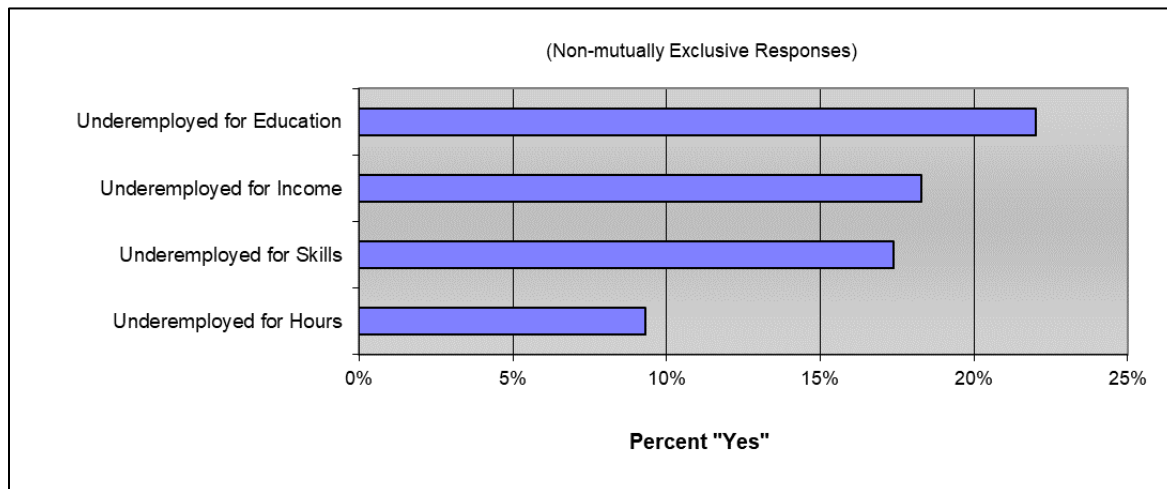


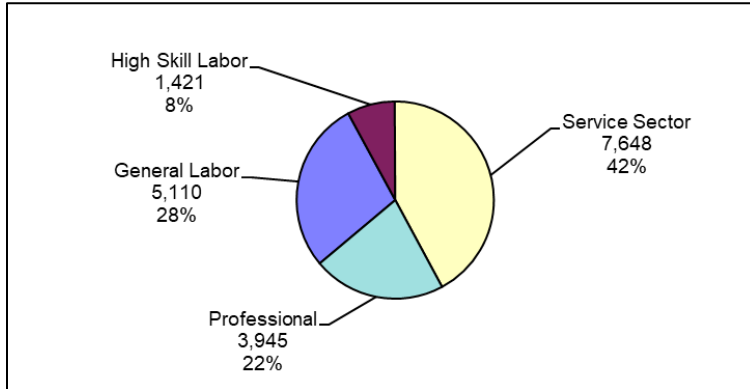
Table 6 and Figure 18 (next page) show some characteristics of the underemployed members of the Available Labor Pool. Table 6 shows that the education levels of the underemployed. The table shows that 79.8% of the underemployed workers have at least some college experience, while at least 94.9% have a least a high school diploma.

Table 6: Highest Level of Education Achieved Among Underemployed

	Number	Percent	Cumulative Percent
Doctoral Degree	1,572	8.7	8.7
Masters Degree	2,817	15.5	24.2
Bachelors Degree	4,023	22.2	46.4
Associates Degree	3,764	20.8	67.2
Some College	2,279	12.6	79.8
High School Diploma Only	2,749	15.2	94.9
Less HS Diploma	920	5.1	100.0
Total	18,124	100	

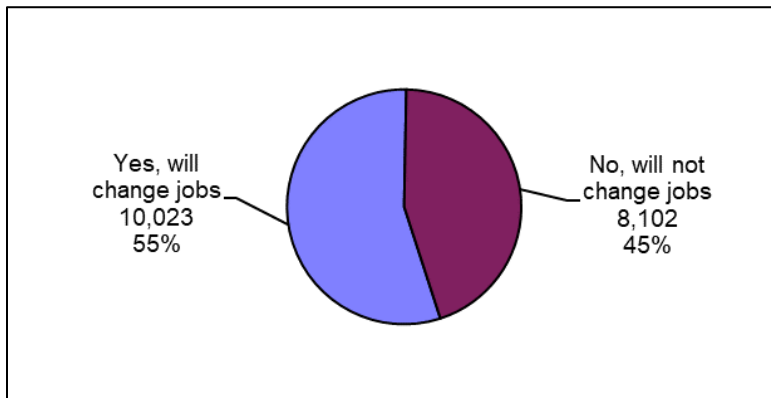
Figure 18 shows that 28% of the underemployed workers are general laborers and 8% are highly skilled blue-collar workers. The highest percentage of underemployed workers are employed as service sector and support workers (42%), while 22% hold professional positions.

Figure 18: Occupational Sectors of Underemployed Workers



Underemployed workers were asked if they “are available or a new or different job because they are underemployed?” Figure 19 shows that more than half 55% (or 10,023 individuals) of the underemployed workers are seeking new employment to address underemployment.

Figure 19: Seeking New Employment to Address Underemployment



Comparative Analysis (2001, 2002, 2003, 2005, 2007, 2015, and 2020 Reports)

The Docking Institute of Public Affairs conducted a similar labor studies in the Columbia/Boone County Labor Basin and provided reports in 2001, 2002, 2003, 2005, 2007, and 2015. This section of the report compares some of the data collected from all seven studies.

Table 7 shows population, Civilian Labor Force (CLF), employment, average unemployment rate, and Available Labor Pool data presented in the seven reports.

The population of the Columbia/Boone County Labor Basin has increased from 339,842 to 404,573 (or by 64,731 individuals) in the past 19 year since the first labor study. The Civilian Labor Force increased from 193,799 to 203,375 and the number of employed individuals has increased from 189,832 to 197,806⁴. The unemployment rate has fluctuated from between 2.04% and 4.30%, and is now about 2.7%.

The table also shows the Available Labor Pools for each year. The size of the Pool remained fairly stable from 2002 to 2007, but increased by about 30,000 people between 2007 and 2015 and fell by about 18,500 between 2015 and 2020.

Table 7: Key Population and Employment Indicators

Columbia / Boone County Labor Basin							
	2001 Study*	2002 Study	2003 Study	2005 Study	2007 Study	2015 Study	2020 Study
Labor Basin Population	339,842	350,905	355,230	357,935	365,472	397,182	404,573
Civilian Labor Force	193,799	205,193	204,131	202,557	201,493	208,757	203,375
Employed	189,832	199,137	197,333	195,090	193,773	200,507	197,806
Average Unemployment Rate	2.04%	2.95%	3.33%	4.30%	3.80%	3.94%	2.74%
Available Labor Pool	93,232	105,398	106,228	107,928	107,388	137,968	119,471

* Monroe County was not included in the 2001 Study.

⁴ Part of the increases in population size, Civilian Labor Force, and employed can be explained by the inclusion of Monroe County in the labor basin in 2002.

Figure 20 shows that there is a smaller proportion of *employed* Available Labor Pool members *interested* in a new or different job in 2020 than in 2015. However, the 2020 pool has a higher percentage of *non-employed but interested* pool members than the 2105 pool.

Figure 20: Available Labor Pool Comparison

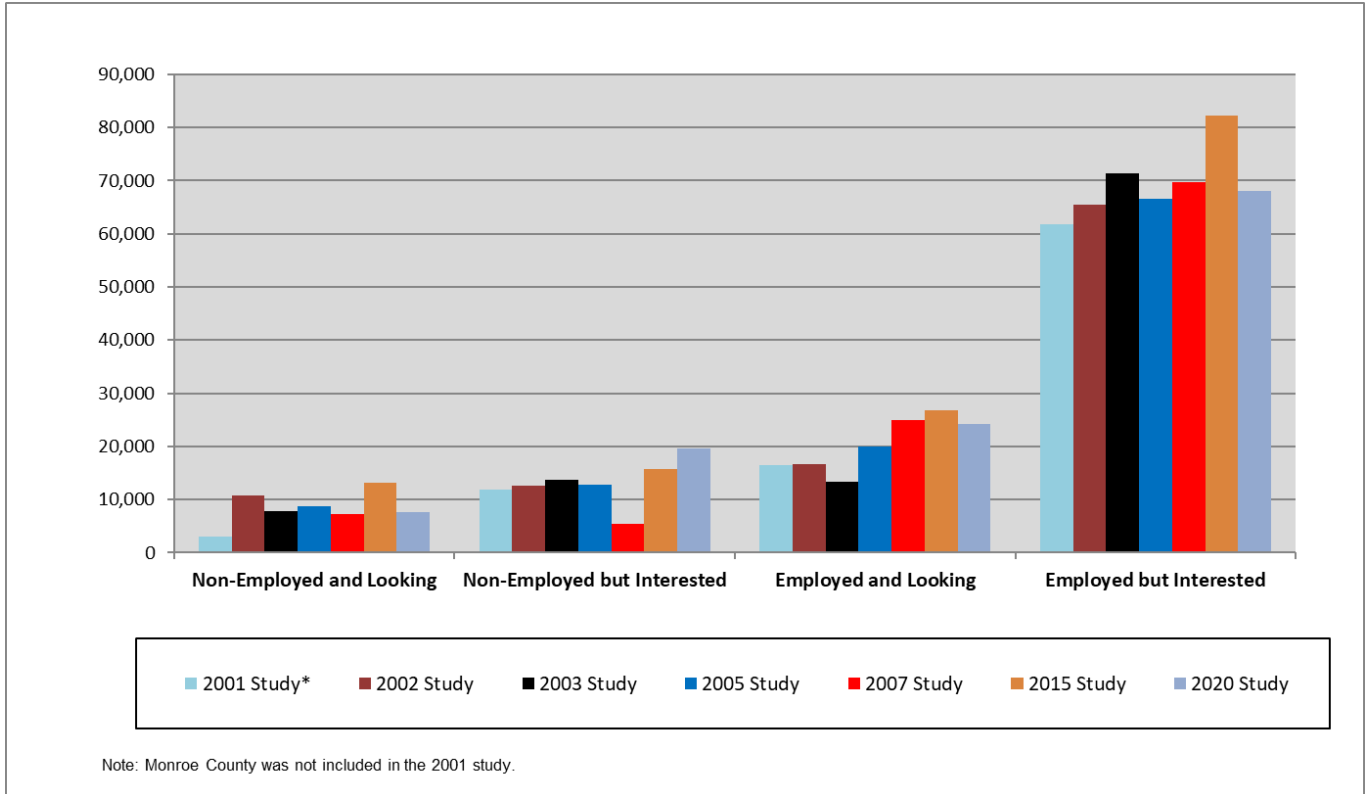


Table 8 (next page) compares occupational sectors and education levels from the seven studies. The 2001 and 2003 studies stand out with lower percentages of non-working pool members. Considering just the past 15 years, the 2007 study has a markedly lower percentage of non-working members than in 2005, 2015, and 2020.

The education levels among the seven pools are similar, although the 2015 and 2020 Available Labor Pools seem to have a higher percentage of educated workers (with almost three-quarters having some college experience, each).

Table 9 (also on the next page) shows the numbers and percentages of those “willing to take a job outside of their primary field.” The table also shows responses to questions regarding various work shifts. However, the three questions regarding work shifts were not asked until 2007.

The table shows that the percentage of Pool members willing to take a job outside of their primary field varied from 78.6% (2005) to 84.2% (2001). The percentage of Pool members willing to work weekends is about 4% higher in 2015 compared to 2007, but about 5% less when comparing 2015 and 2020.

Table 8: Available Labor Pool Occupational Sectors and Education Levels Comparison

Occupational Sector	2001 Study*		2002 Study		2003 Study		2005 Study		2007 Study		2015 Study		2020 Study		
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	
General Labor**	15,476	16.6	12,859	12.2	17,846	16.8	15,757	14.6	21,352	19.9	26,611	19.3	18,169	15.2	
High Skill Labor**	8,671	9.3	7,272.5	6.9	9,985	9.4	8,850	8.2	10,247	9.5	10,829	7.8	10,909	9.1	
Service Sector	37,293	40.0	41,105.2	39.0	40,260	37.9	42,955	39.8	39,769	37.0	51,546	37.4	45,484	38.1	
Professional	28,436	30.5	33,305.8	31.6	30,275	28.5	18,779	17.4	23,514	21.9	20,142	14.6	18,382	15.4	
Non-Working	3,356	3.6	10,856.0	10.3	7,861	7.4	21,586	20.0	12,506	11.6	28,840	20.9	26,525	22.2	
Total	93,232	100	105,398	100	106,228	100	107,928	100	107,388	100	137,968	100	119,471	100	
Highest Education	Number	Percent	Cumulative Percent	Number	Percent	Cumulative Percent	Number	Percent	Cumulative Percent	Number	Percent	Cumulative Percent	Number	Percent	Cumulative Percent
Doctoral Degree	2,238	2.4	2.4	3,267	3.1	3.1	3,026	2.8	2.8	2,940	2.7	2.7	4,832	4.5	4.5
Masters Degree	6,619	7.1	9.5	9,802	9.3	12.4	12,408	11.7	14.5	12,732	11.8	14.5	10,631	9.9	14.4
Bachelors Degree	24,054	25.8	35.3	25,612	24.3	36.7	25,725	24.2	38.7	22,416	20.8	35.3	28,028	26.1	40.5
Associates Degree	8,857	9.5	44.8	11,067	10.5	47.2	7,263	6.8	45.6	9,673	9.0	44.3	8,913	8.3	48.8
Some College	22,096	23.7	68.5	23,188	22.0	69.2	24,514	23.1	68.7	28,368	26.3	70.5	22,659	21.1	69.9
High School Diploma	23,494	25.2	93.7	27,720	26.3	95.5	28,751	27.1	95.7	25,035	23.2	93.7	29,102	27.1	97.0
Less HS Diploma	5,874	6.3	100	4,743	4.5	100	4,540	4.3	100	6,765	6.3	100	3,222	3.0	100
Total	93,232	100		105,398	100		106,228	100		107,928	100		107,388	100	

*Monroe County was not included in the 2001 Study.
 ** Figures for 2001, 2002, and 2003 are estimated. General and high skill labor were grouped under the heading "Blue-Collar" prior to 2005.

Table 9: Willing to Work Outside of Field and Work Shift Comparison

(Ranked by 2020 Report)	2001 Study*		2002 Study		2003 Study		2005 Study		2007 Study		2015 Study		2020 Study	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Willing to Take Job Outside of Primary Field?	78,501	84.2	88,640	84.1	86,894	81.8	84,831	78.6	88,885	82.8	110,650	80.2	97,966	82.0
Will Work Weekends?***	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	55,412	51.6	76,572	55.5	58,601	49.1
Will Work 2nd or Night Shift?***	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	52,942	49.3	70,639	51.2	45,026	37.7
Will Work Rotating Shifts?***	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	63,741	46.2	44,520	37.3

*Monroe County was not included in the 2001 Study.
 ***Questions were added for the 2007 study.

Figure 21 shows a comparison of “minutes willing to commute” for the seven studies.

The patterns are similar, while the “drop-off” between 30 minutes and 35 minutes is most dramatic in the 2005 and 2015 studies. On-the-other-hand, the “drop-off” between 45 minutes and 50 minutes is most dramatic in the 2015 study.

Figure 21: Available Labor by Commute Minutes Comparison

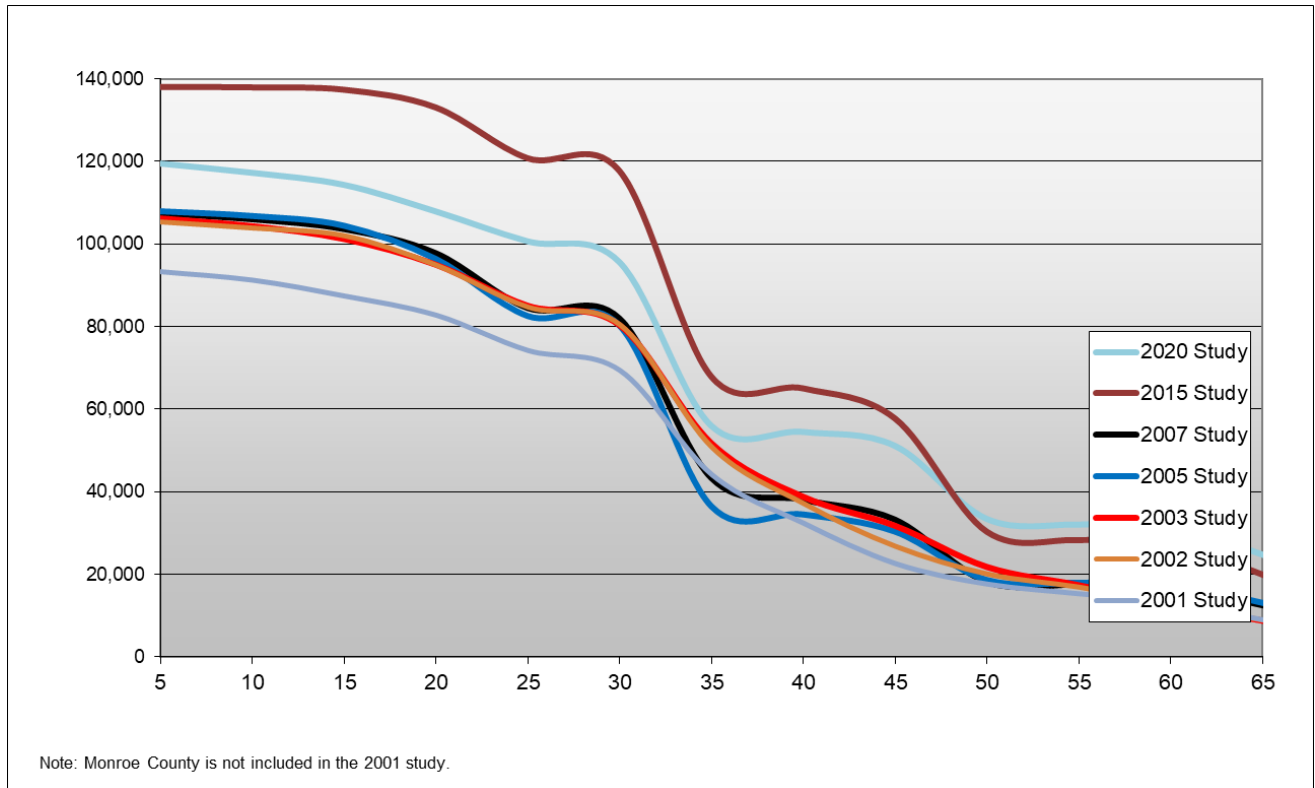


Table 10 shows desired benefits to take a new or a different job for each labor study, ranked in order by 2020 data. The table shows that “good salary/hourly pay” is the most important benefit in all study periods except for 2005. “Good health benefits” ranked highest in 2005.

The items of greatest change between 2015 and 2020 is “good educational assistance,” with 48.2% indicating this was a very important benefit in 2015 but 39.1% considering this a very important benefit in 2020.

Table 10: Important Benefits to Change Employment Comparison

	2001 Study*	2002 Study	2003 Study	2005 Study	2007 Study	2015 Study	2020 Study	
<i>(Ranked by 2020 Report)</i>								
				Percent Responding "Yes"				<i>Change '20-'15</i>
Good Salary or Hourly Wage	97.2	96.6	95.4	83.3	87.7	91.6	90.6	-1.0
Good Retirement Benefits	74.2	84.0	73.5	84.4	87.0	84.4	83.7	-0.7
Good Health Benefits	54.3	54.4	54.9	85.4	86.3	84.0	83.1	-0.9
OJT or Paid Training	n/a	51.3	49.7	82.0	79.1	84.7	82.0	-2.7
Good Vacation Benefits	n/a	n/a	n/a	71.0	80.0	78.5	81.7	3.2
Flexible Hours or Flex-Time	68.4	69.5	65.1	68.2	64.7	71.7	76.4	4.7
Good Educational Assistance	48.6	43.4	41.4	52.2	51.1	48.2	39.1	-9.1
Transportation Assistance to Work	n/a	30.8	25.0	27.7	32.0	26.5	25.4	-1.1

* Percentages do not include Monroe County.

Figure 22 shows a comparison of the desired wages of the seven study groups. The desired wage line shows that a larger proportion of the 2005 Pool were available for work in the lower dollar per hour range (\$9 to \$15 an hour or so) when compared to the other Pools.

The desire wage lines flatten out for the studies prior to 2015 from about \$21 onward. However, the desired wage line for 2015 and 2020 continues upward through \$30 an hour.

Figure 22: Available Labor Pool by Hourly Wage Comparison

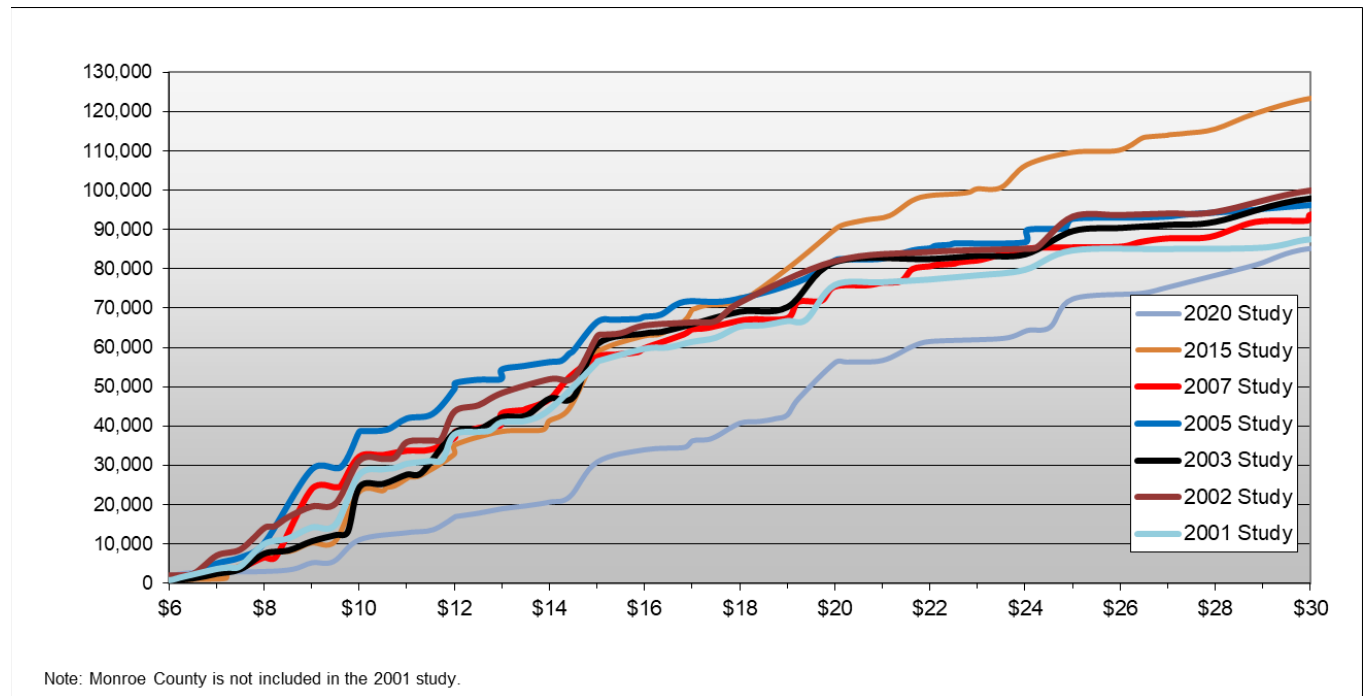


Table 11 (next page) shows a comparison of the underemployed members of the Available Labor Pools for the seven studies.

The percentage of underemployed workers in 2005 (46.5%) is the highest among the Pools, while the percentage in 2020 (19.5%) is lowest.

The percentage of underemployed workers in general labor occupations is highest in 2015 (35%) and lowest in 2002 (11%). Alternatively, the percentage of underemployed professional workers is lowest in 2015 (9.6%) and highest is 2020 (21.8%).

Examining the cumulative percentage columns in the educational attainment (Highest Education) section of the table shows that 67.2% of the underemployed workers in 2020 had at least associates degrees, while these percentages are lower for the other study periods.

Table 11: Underemployed Workers Occupational Sectors and Education Levels Comparison

	2001 Study*		2002 Study		2003 Study		2005 Study		2007 Study		2015 Study		2020 Study							
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent						
Employed of Pool	89,875	96.4	94,542	89.7	98,367	92.6	86,342	80.0	94,882	88.4	109,128	79.1	92,945	77.8						
Underemployed Wrkrs	30,097	33.5	34,470	36.5	33,092	33.6	40,160	46.5	30,891	32.6	31,913	29.2	18,124	19.5						
Willing to Change Jobs to Address Status	n/a	n/a	n/a	n/a	n/a	n/a	33,373	83.1	25,075	81.2	17,424	54.6	10,023	55.3						
Occupational Sector																				
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent						
General Labor**	7,524	25.00	3,792	11.00	6,751	20.4	9,759	24.30	9,206	29.80	11,183	35.0	5,110	28.2						
High Skill Labor**	3,010	10.00	6,205	18.00	5,063	15.3	3,775	9.40	3,522	11.40	3,515	11.0	1,421	7.8						
Service Sector	14,447	48.00	19,993	58.00	16,546	50.0	20,602	51.30	13,345	43.20	14,137	44.3	7,648	42.2						
Professional	5,116	17.00	4,481	13.00	4,732	14.3	6,024	15.00	4,819	15.60	3,078	9.6	3,945	21.8						
Total	30,097	100	34,470	100.00	33,092	100.00	40,160	100	30,891	100	31,913	100	18,124	100						
Highest Education																				
	Number	Percent	Cumulative Percent	Number	Percent	Cumulative Percent	Number	Percent	Cumulative Percent	Number	Percent	Cumulative Percent	Number	Percent	Cumulative Percent					
Doctoral Degree	301	1.0	1.0	331	1.0	1.0	331	1.0	1.0	865	2.2	2.2	927	3.0	3.0					
Masters Degree	1,204	4.0	5.0	2,652	7.7	8.7	3,309	10.0	11.0	2,424	6.0	8.2	3,213	10.4	13.4					
Bachelors Degree	8,427	28.0	33.0	7,623	22.1	30.8	8,935	27.0	38.0	9,762	24.3	32.5	6,920	22.4	35.8					
Associates Degree	3,010	10.0	43.0	3,646	10.6	41.3	2,316	7.0	45.0	5,230	13.0	45.5	3,274	10.6	46.4					
Some College	8,126	27.0	70.0	9,943	28.8	70.2	8,604	26.0	71.0	10,145	25.3	70.8	7,537	24.4	70.8					
High School Diploma	8,126	27.0	97.0	9,280	26.9	97.1	8,604	26.0	97.0	9,020	22.5	93.2	7,661	24.8	95.6					
Less HS Diploma	903	3.0	100	994	2.9	100	993	3.0	100	2,714	6.8	100	1,359	4.4	100					
Total	30,097	100		34,470	100		33,092	100		40,160	100		30,891	100		31,913	100		18,124	100

*Monroe County was not included in the 2001 Study.
 ** Figures for 2001, 2002, and 2003 are estimated. General and high skill labor were grouped under the heading "Blue-Collar" prior to 2005.

Methods

The Columbia/Boone County Labor Basin has a total population 404,573, and a Civilian Labor Force of 208,757. The average unemployment rate was 2.73% at the time of the study. The Docking Institute's analysis suggests that the labor basin contains an Available Labor Pool of 119,471 individuals.

Explaining the Civilian Labor Force

Traditional methods of assessing the dynamics of the labor force have concentrated on what the Bureau of Labor Statistics calls the Civilian Labor Force. The Civilian Labor Force represents "the civilian non-institutional population, 16 years of age and over classified as employed or unemployed." The BLS defines "non-institutional civilians" as those individuals who are not inmates in institutions and who are not on active duty in the Armed Forces; and "unemployed civilians" as civilians available for work and who had "made specific efforts to find employment" in the previous four weeks.

While a review of Civilian Labor Force statistics represents the starting point for understanding the labor force in the Columbia/Boone County Labor Basin, there are some limitations associated with these statistics. These limitations occur because the Civilian Labor Force *excludes* individuals who may be willing and able to be gainfully employed but have not made specific efforts to find employment in the last four weeks. These individuals may include full-time students, homemakers, the unemployed who are no longer seeking employment, military personnel who may be leaving military employment in the near future and retired individuals who may be available for work but have not been looking for work recently.

In addition, most new employers draw their workforce from those who are presently employed, not those who are unemployed. As such, Bureau of Labor Statistics data (such as the Civilian Labor Force) do not specifically address the possibility of workers moving from one industry to another in search of other employment opportunities.

Defining the Available Labor Pool

An alternative to the Civilian Labor Force is the "Available Labor Pool."⁵ The Available Labor Pool is composed of workers categorized as either 1) currently not working *and* looking for employment, 2) currently not working *but* interested in employment, 3) currently working *and* looking for other full-time employment, and 4) currently working and not looking, *but* interested in different employment for the right opportunities.

There are two key differences between the Civilian Labor Force and the Available Labor Pool. First, the Available Labor Pool methodology expands the pool of potential workers by including workers excluded from the Civilian Labor Force⁶. Secondly, the number of potential workers is

⁵ The Available Labor Pool includes potential workers excluded from the Civilian Labor Force (such as full-time students willing to take a job, homemakers who have not yet sought employment, military personnel who may be leaving military employment in the near future, and retired individuals who may be willing and able to be gainfully employed).

⁶ The number that is added to the Civilian Labor Force is derived by taking from the survey the total number of full-time students, homemakers, military, retirees, and long-term unemployed, who state that they are seeking or available for employment and are within a reasonable commute distance to the center of the labor basin, and dividing

then *restricted* to those workers who indicate they are looking for work or that are available for new employment. The advantage of this methodology is that it allows researchers to examine those members of the labor pool who have a propensity to consider a job opportunity given their employment expectations. Even with these restrictions, it should be noted that, in practice, not all members of the Available Labor Pool would apply for a new job opportunity. However, the Available Labor Pool figure for a labor basin reveals to current employers and potential employers better information about the quantity and quality of the labor pool than do Civilian Labor Force data and unemployment statistics. The Available Labor Pool represents a substantial number of workers and potential workers for employers to draw upon in the Columbia/Boone County Labor Basin.

Description of Survey Research Methods

Data for the **2020 study** were collected from a random digit telephone survey of adults living in nine counties in central Missouri: Audrain, Boone, Callaway, Cole, Cooper, Howard, Moniteau, Monroe, and Randolph.⁷ Surveying took place from February 11 through March 3, 2020, using a Computer Assisted Telephone Interviewing (CATI) system. Surveying ended sooner than expected due to the COVID-19 outbreak and the need to close the survey center. A total of 1,224 households were successfully contacted during the data collection period, and a randomly selected adult in each was asked to participate in the study.⁸ In 569 households the selected adult agreed to be interviewed. This represents a cooperation rate of 46.5% and a margin of error of +/-4.11%.

Survey respondents that were 65 years of age or older, retired and not interested in a new or different job were not asked the entire battery of survey questions and are not included in the analysis of this report. The remaining respondents (all other working and non-working respondents) total to 452, and are considered eligible respondents. Of the 452 cooperating and eligible respondents, 52% (or 237) indicated that they were available for new or different full-time employment and/or were looking for a new or different full-time job. This subgroup is considered the Available Labor Pool for the Columbia/Boone County Labor Basin. The Margin of Error for the Available Labor Pool is +/- 6.4%. Data collection for previous labor studies used the same methods.

The study sponsors and Institute personnel agreed upon the survey items used, with the former identifying the study objectives and the latter developing items and methodologies that were

this number by the total number of respondents. This quotient is then multiplied by the total number of people in the labor basin who are 18 to 65 years old.

⁷ Cell-phone and land-line telephone numbers were assembled by randomly generating suffixes within specific area codes and prefixes. As such, unlisted numbers were included in this sample, minimizing the potential for response bias. Known business, fax, modem, and disconnected numbers were screened from the sample in efforts to reach households only (and to minimize surveyor dialing time). Up to eight attempts were made to contact each respondent during three calling periods (10 AM to Noon, 2 PM to 4 PM, and 6 PM to 9 PM). Initial refusals were re-attempted by specially trained “refusal converters,” which aided in the cooperation rate.

⁸ When a land-line number was called, surveyors requested to “speak with an adult over the age of 17 that has had the most recent birthday.” When a cell-phone number was called, the respondent was asked if they were over the age of 17.

valid, reliable and unbiased. Question wording and design of the survey instrument are the property of the Docking Institute.⁹

Glossary of Terms

Columbia/Boone County Labor Basin – The Columbia/Boone County Labor Basin includes Audrain, Boone, Callaway, Cole, Cooper, Howard, Moniteau, Monroe, and Randolph counties in central Missouri.

Civilian Labor Force – The Civilian Labor Force represents “the civilian non-institutional population, 16 years of age and over classified as employed or unemployed.” The Bureau of Labor Statistics defines “non-institutional civilians” as those individuals who are not inmates in institutions and who are not on active duty in the Armed Forces; and “unemployed civilians” as civilians available for work and who had “made specific efforts to find employment” in the previous four weeks.

Available Labor Pool – The Available Labor Pool is composed of workers and potential categorized as either 1) currently not working *and* looking for employment, 2) currently not working in any manner *but* interested in a new or different job given the right opportunities, 3) employed (full- or part-time) *and* looking for other full-time employment, and 4) currently employed and not looking, *but* interested in different employment given the right opportunities.

Desired Wage – The desired wage is the hourly wage that a respondent would consider accepting to take a new or different job given the right opportunities. If a respondent offers a yearly salary instead of an hourly wage, a wage is computed by dividing the salary by 2,080.

Minutes Willing to Travel – “Minutes Willing to Travel” indicates the minutes that a respondent is willing to travel, one way, for a new or different job opportunity given the right opportunities.

Underemployment – Individuals that perceive themselves as possessing skills and/or training levels that exceed the responsibilities of their current job, have educations that exceed those necessary for their current job, have earned a higher salary/hour wage for a previous but similar job, or are unable to work as many hours as desired at their current job.

Job Sectors – “Job sectors” include (with examples shown):

General Labor includes occupations such as cleaning, construction, delivery and maintenance.

High-Skill Blue Collar includes occupations such as police, fire-fighting, postal worker, welder, high-skilled mechanics, welder, computer technician and lab technician.

Service Sector includes occupations such as clerical worker, waitress, retail sales clerk, bookkeeper, para-professional, certified nurse’s assistant, nurse, teacher and small business manager.

Professional White Collar includes occupations such as administrator, business executive, professional salesperson, doctor, lawyer, professor and engineer.

⁹ A detailed summary of the method of analysis used in this report can be found in Joseph A. Aistrup, Michael S. Walker and Brett A. Zollinger, “The Kansas Labor Force Survey: The Available Labor Pool and Underemployment.” *Kansas Department of Human Resources*, 2002.

Appendix: Hourly Wage to Annual Salary Conversion Chart

Hourly Wage	Annual Salary	Hourly Wage	Annual Salary
\$5.00	\$10,400		
\$5.50	\$11,440		
\$6.00	\$12,480		
\$6.50	\$13,520		
\$7.00	\$14,560		
\$7.50	\$15,600		
\$8.00	\$16,640		
\$8.50	\$17,680		
\$9.00	\$18,720		
\$9.50	\$19,760		
\$10.00	\$20,800		
\$10.50	\$21,840		
\$11.00	\$22,880		
\$11.50	\$23,920		
\$12.00	\$24,960		
\$12.50	\$26,000		
\$13.00	\$27,040		
\$13.50	\$28,080		
\$14.00	\$29,120		
\$14.50	\$30,160		
\$15.00	\$31,200		
\$15.50	\$32,240		
\$16.00	\$33,280		
\$16.50	\$34,320		
\$17.00	\$35,360		
\$17.50	\$36,400		
\$18.00	\$37,440		
\$18.50	\$38,480		
\$19.00	\$39,520		
\$19.50	\$40,560		
\$20.00	\$41,600		
\$20.50	\$42,640		
\$21.00	\$43,680		
\$21.50	\$44,720		
\$22.00	\$45,760		
\$22.50	\$46,800		
\$23.00	\$47,840		
\$23.50	\$48,880		
\$24.00	\$49,920		
\$24.50	\$50,960		
\$25.00	\$52,000		
\$25.50	\$53,040		
\$26.00	\$54,080		
\$26.50	\$55,120		
\$27.00	\$56,160		
\$27.50	\$57,200		
\$28.00	\$58,240		
\$28.50	\$59,280		
\$29.00	\$60,320		
\$29.50	\$61,360		
		\$30.00	\$62,400
		\$30.50	\$63,440
		\$31.00	\$64,480
		\$31.50	\$65,520
		\$32.00	\$66,560
		\$32.50	\$67,600
		\$33.00	\$68,640
		\$33.50	\$69,680
		\$34.00	\$70,720
		\$34.50	\$71,760
		\$35.00	\$72,800
		\$35.50	\$73,840
		\$36.00	\$74,880
		\$36.50	\$75,920
		\$37.00	\$76,960
		\$37.50	\$78,000
		\$38.00	\$79,040
		\$38.50	\$80,080
		\$39.00	\$81,120
		\$39.50	\$82,160
		\$40.00	\$83,200
		\$40.50	\$84,240
		\$41.00	\$85,280
		\$41.50	\$86,320
		\$42.00	\$87,360
		\$42.50	\$88,400
		\$43.00	\$89,440
		\$43.50	\$90,480
		\$44.00	\$91,520
		\$44.50	\$92,560
		\$45.00	\$93,600
		\$45.50	\$94,640
		\$46.00	\$95,680
		\$46.50	\$96,720
		\$47.00	\$97,760
		\$47.50	\$98,800
		\$48.00	\$99,840
		\$48.50	\$100,880
		\$49.00	\$101,920
		\$49.50	\$102,960
		\$50.00	\$104,000