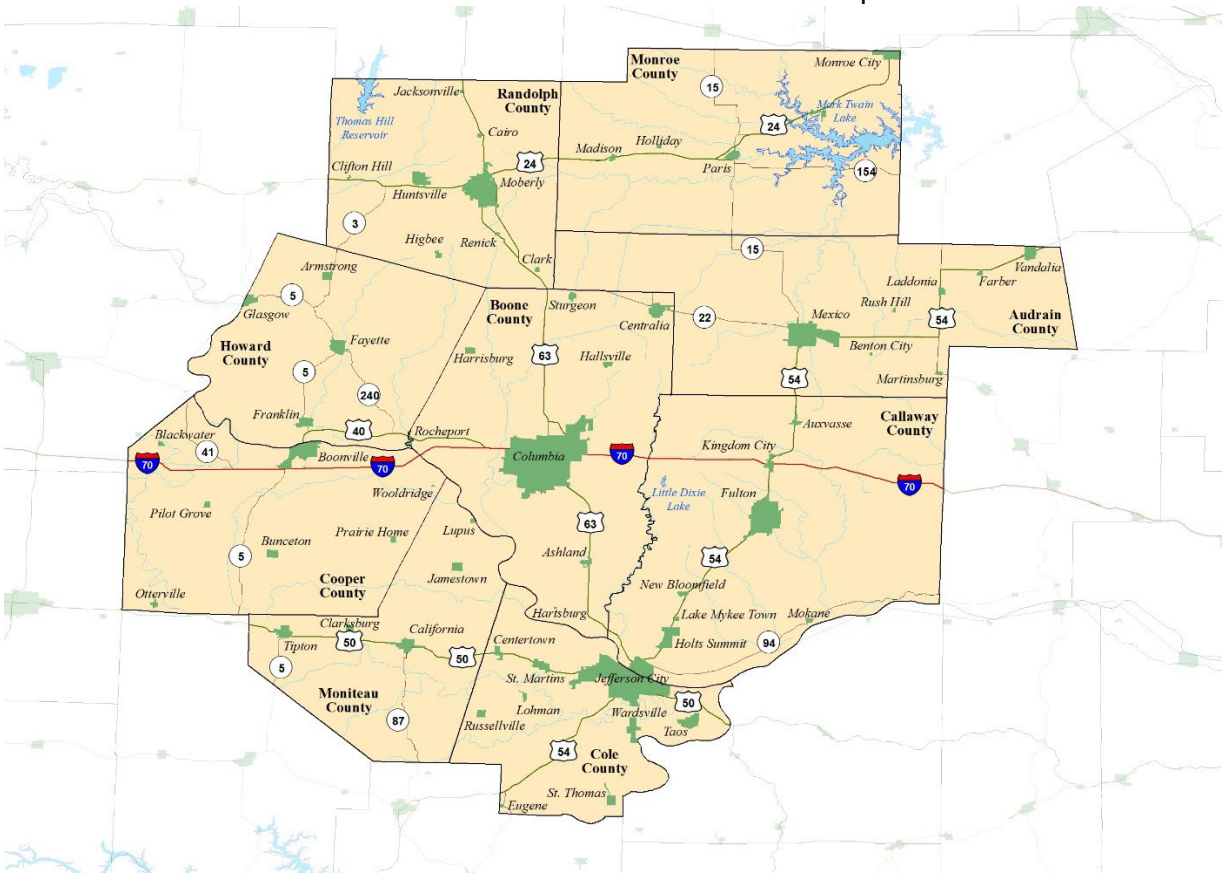
Columbia/Boone County Labor Basin

Labor Availability Analysis – 2022

Including a comparison to data from the 2001, 2002, 2003, 2005, 2007, 2015, and 2020 Labor Availability Analyses

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



Brett Zollinger, Ph.D.
Director

Jian Sun, Ph.D.
Assistant Director

Michael S. Walker, M.S.
Research Scholar

Marisa M. Johnson, M.B.A.
Administrative Specialist

Leslie Watson-Divittore, M.S.
Research Coord. Admin. Specialist

Wesley Davis
Graduate Research Assistant

Mission:

To facilitate effective public policy decision-making among governmental and nonprofit entities

Docking Institute of Public Affairs
Fort Hays State University
600 Park Street
Hays, Kansas 67601-4099
Telephone: (785) 628-4197
www.fhsu.edu/docking

Columbia/Boone County Labor Basin
Labor Availability Analysis - 2022

Including a comparison to data from the
2001, 2002, 2003, 2005, 2007, 2015, and 2020 Labor Availability Analyses

Prepared By:
Michael S. Walker, M.S.
Research Scholar
Docking Institute of Public Affairs

With assistance from:
Leslie Watson-Divittore, M.S.
Wesley Davis
Jenna Welsby

Prepared For:
Regional Economic Development Inc.
Columbia, Missouri

Contents

List of Maps

List of Tables

List of Figures

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 the following:

The Columbia/Boone County Labor Basin includes nine counties in central Missouri. The labor basin has a total population of approximately 408,904, and a Civilian Labor Force of 202,261. The total number of employed is 195,750 and the average unemployment rate was about 3.22% during the time of this study. The Docking Institute estimates the basin's Available Labor Pool consists of 114,839 individuals.

Of the working members of the Available Labor Pool, 17,222 (15%) are employed and currently looking for different employment, while 73,234 (63.8%) are interested in a new job for the right opportunities. Of the non-working members of the Pool, 4,553 (4%) are looking for employment, while 19,830 (17.3%) are interested in a job for the right opportunities.

The average age is about 49 years old, 55.1% are women, nearly all have high school diplomas, 82.3% have some college-level educational experiences, and 61.1% have bachelor's degree. Almost a quarter (24.6%) speak Spanish, but most (84%) of those who do, speak "only a little."

General labor occupations are held by 15.6% Pool members, while high skill labor jobs make up 8.9%. Traditional service-related occupations represent 31.7%, while professional occupations represent 22.8%. Non-employed members of the Pool make up 20.9% of the total.

An estimated 89,000 Pool members ***have training/experience*** in data entry with telephone operation, 71,315 have training/experience working in a professional office environment, 42,950 have training/experience in warehousing, 42,146 have training/experience in manufacturing or processing, and 10,565 have training/experience in security or protective services.

An estimated 54,204 Pool members ***will take jobs*** in data entry/telephone operation, 57,994 will take jobs in a professional office environment, 33,763 will take jobs in warehousing, 31,007 will take jobs in manufacturing or processing, and 13,206 will take jobs in security or protective services.

Of those with warehousing experience, 30% moved and loaded materials. Of those with manufacturing or processing experience, 43% worked in production, fabrication, or assembly.

When asked where they currently work, most employed Pool members said Columbia, Jefferson City, Fulton, Boonville, Moberly, Mexico, and Glasgow.

The college academic fields of Pool members with college experience include business and economics (28%), biological sciences (16%), physical sciences (14%), arts and humanities (13%), social sciences (12%), education (11%), and computer science and math (6%).

Of members of the Pool with community college or technical school experience (15%), 26.3% report taking general education courses, 21.1% studied nursing or health related topics, 20.5% took business skills courses, and 12.9% studied HVAC, wiring, plumbing, welding, etc.

Regarding job satisfaction, when presented with the statement "I enjoy the things I do," 52.7% "agree" and 31.5% "strongly agree." When presented with the statement "I have a generally positive work environment," 51.7% "agree" and 26.1% "strongly agree." For the statement "I have a fair chance at a promotion, 33.3% "agree or strongly agree" (combined) and 36.8% "disagree or strongly disagree" (combined).

Most (72.8%) will take a job outside of their primary field of employment or experience. When asked about working various shifts, 34.9% will work the 2nd shift, 31.8% will work weekends, 19.5% will work the night shift, and 18.8% will work rotating shifts.

Regarding travel to work, 22% will commute up to 45 minutes, one way, for a job and 68% will commute up to 30 minutes for a job.

The five most important benefits are good salary or hourly wage, good retirement benefits, flexible hours/remote work, good vacation benefits, and good health benefits.

An estimated 11,025 (9.6%) members of the Pool expect to earn $15 an hour at a new job, while 73,152 (63.7%) expect to earn $20 an hour at a new job.

In general, respondents expecting higher wages are willing to commute for more minutes than those expecting lower wages.

Of the 61,517 members of the "within the necessary commute time" subset, 35,246 expect an hourly wage of $30.

Of the 90,807 employed members of the Pool, 27,385 (30%) consider themselves underemployed.

Of the 80,344 Pool members who do not own a business, 13,439 (17%) have "seriously thought about" starting their own businesses.

A comparison of data from eight labor studies conducted from 2001 to 2022 shows that there are more “employed but interested” Pool members in 2022 than in 2020, but fewer in both 2020 and 2022 than in 2015. There are fewer “employed and looking” pool members in 2022 than in 2020, but not a few as in 2003.

The 2001 and 2003 studies stand out with the smallest percentages of non-working pool members. The year with the largest percentage of non-working pool members is 2020.

The percentage of Pool members willing to take jobs outside of their primary fields of employment or experience varies from a high of 84.2% in 2001 to a low of 72.3% in 2022.

A comparison of commute minutes data shows that between 30 and 35 minutes all eight available labor pools decline notably in size. The year with the largest decline in available labor between 30 minutes and 35 minutes is 2005. Two years, 2001 and 2003 share the smallest decline from 30 to 35 minutes.

“Good salary/hourly pay” is the most important benefit/opportunity in all study periods except for 2005, when “Good health benefits” ranked highest. The items with the greatest amount of change between 2020 and 2022 are “flexible hours or remote work“ and “good salary or annual pay.”

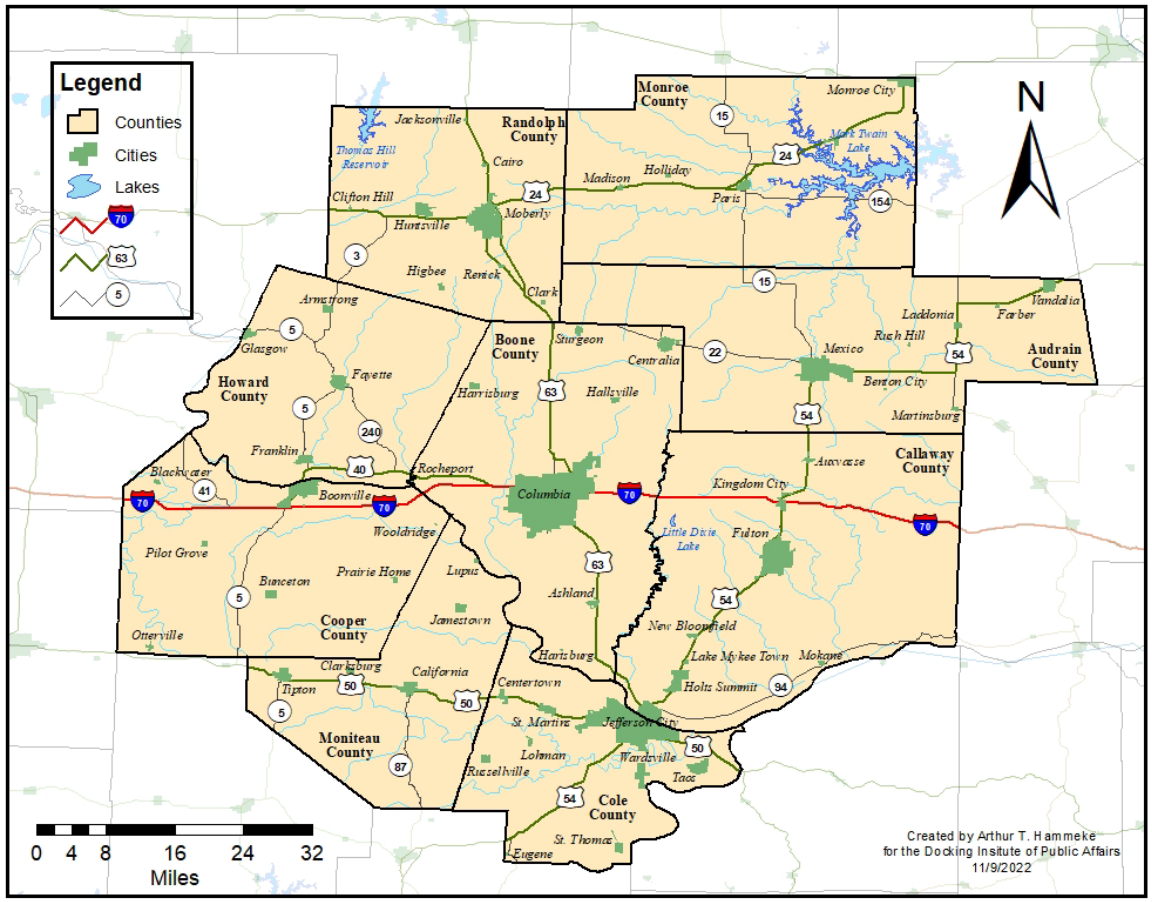
A comparison of expected wage data shows notable Pool size increases between $15 and $20 an hour. The year with the largest increase in Pool size between $15 and $20 an hour is 2022. The year with the smallest increase in Pool size between $15 and $20 per hour is 2005.

The year with the largest percentage of underemployed workers is 2005 (46.5%). The year with the smallest percentage of underemployed workers is 2020 (19.5%).

The Columbia/Boone County Labor Basin

The Columbia/Boone County Labor Basin includes nine counties in central Missouri (see Map 1 below). The labor basin has a total population of approximately 408,904, and a Civilian Labor Force of 202,261. The total number of employed is 195,750 and the average unemployment rate was about 3.22% during the time of this study. The Docking Institute's analysis suggests that the basin contains an Available Labor Pool of 114,839 individuals.

Map 1: Columbia/Boone County Labor Basin



The Available Labor Pool is composed of working age area residents who are classified as 1) currently not working *and* looking for a job, or 2) not working *but* interested in a job, or 3) currently working *and* looking for another job, or 4) currently employed *but* interested in different job for the right opportunities. Please see the Methods Section 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

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?
- How many years of experience do workers have at their current jobs?
- What types of considerations (pay, benefits, commute time) shape their decision-making?
- How do expected pay and commute time interact?
- What are some of the characteristics of general laborers, high skill laborers, service and support workers, and professional workers?
- What percentage of the Available Labor Pool is willing to change fields of employment?
- What types of work shifts are they willing to work?
- What is their level of job satisfaction, and how do these compare to working non-Pool members?
- How many Available Labor Pool members are underemployed?
- How many might be interested in starting a business?

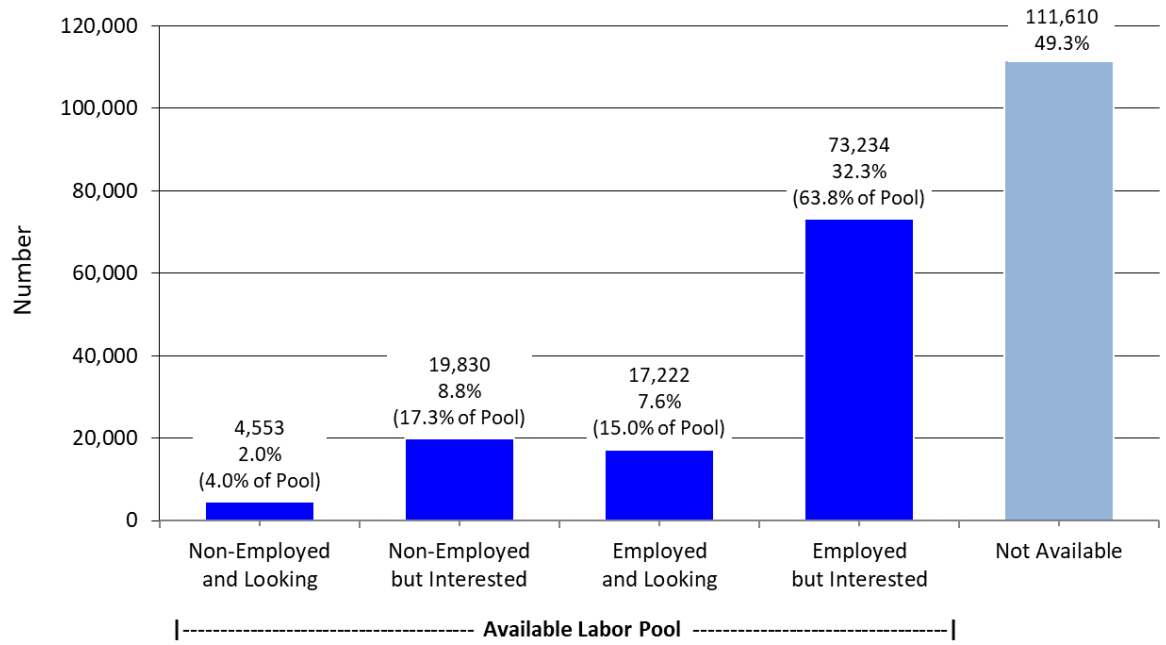
Comparative Analysis

Finally, this report provides a comparative analysis of key findings from the 2001, 2002, 2003, 2005, 2007, 2015, 2020, and 2022 labor availability reports conducted in the Columbia, Missouri, area.

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

It is estimated that 4,553 (4% members of the Available Labor Pool) are non-employed[1] and currently looking for employment, while 19,830 (17.3%) are non-employed but interested in a job for the right opportunities. In addition, 17,222 (15%) members of the Pool are employed and currently looking for different employment, while 73,234 (63.8%) 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* interstested 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 that most counties share up to 5% of the Available Labor Pool (yellow and orange areas on the map). Zip Code areas primarily located in Boone and Cole Counties share 5% or more of the basin's Available Labor Pool (red and brown areas on the map).

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

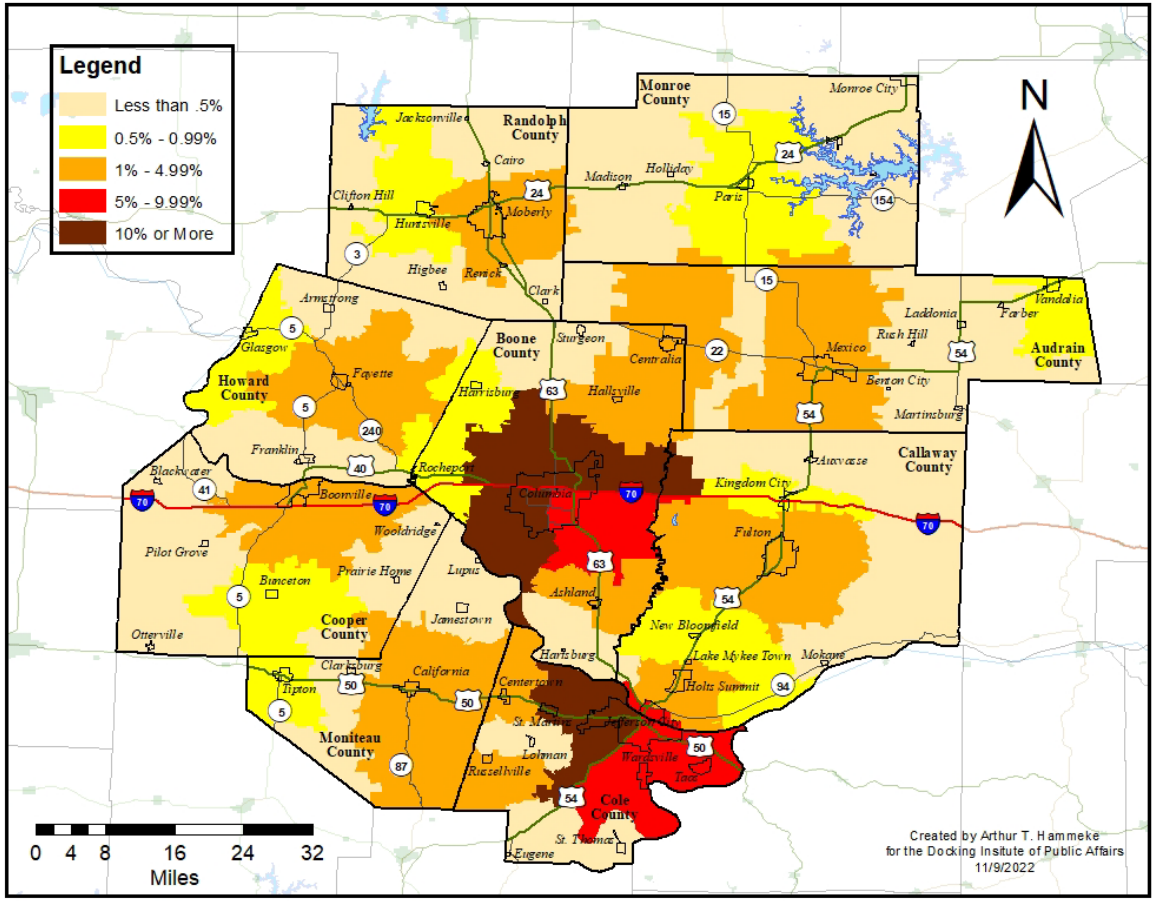


Table 1 shows the age, gender, and education levels of the 114,839-member Available Labor Pool. The average age of the Available Labor Pool is about 49 years old, more than half (55.1%) of the Pool are women, and nearly all (99.6%) have high school diplomas. A large majority (82.3%) have some college-level educational experiences, and more than half (61.1%) have bachelor's degree. The table also shows that almost a quarter (24.6%) speak Spanish, but most (84%) of those who do, speak "only a little."

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

Age Information	Age in 2022
Range	20 to 77
Mean Average	49
Median Average	50

Gender	Number	Percent
Male	49,997	43.5
Female	63,314	55.1
Prefer Not to Say	1,528	1.3
Total	114,839	100

Highest Level of Education	Number	Percent	Cumulative Percent
Doctoral Degree	9,360	8.2	8.2
Masters Degree	22,491	19.6	27.7
Bachelors Degree	38,337	33.4	61.1
Associates Degree	10,753	9.4	70.5
Some College	13,524	11.8	82.3
High School Diploma	19,862	17.3	99.6
Less HS Diploma	512	0.4	100
Total	114,839	100	

"Do you speak Spanish?"	Number	Percent
"Yes"	28,274	24.6
Speak Very Well	*1,376*	*4.9*
Speak Fairly Well	*3,162*	*11.2*
Speak Only a Little	*23,736*	*84.0*

These percentages represent portions of 24.6%

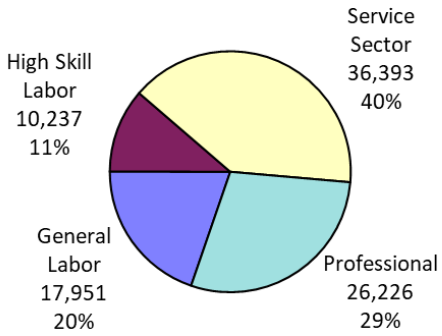
Table 2 shows the various occupational categories of the 114,839-member Available Labor Pool. General labor occupations are held by 15.6% of the entire Available Labor Pool, while high skill labor jobs make up 8.9%. Traditional service-related occupations represent 31.7% of the Available Labor Pool, while professional occupations represent 22.8%. Non-employed members of the Pool make up about one-fifth (20.9%) of the total.

Table 2: Major Occupational Categories of Available Labor

			Years at Job	
Occupational Category	Number	Percent	Mean	Median
Construction/Cleaning/Labor/Delivery	13,360	11.6	9.1	6.0
Manufacturing/Maintenance/Trucking	4,591	4.0	6.4	5.0
Total General Labor	*17,951*	*15.6*	*7.8*	*5.5*
Mechanic/Welder/Comp Tech	4,763	4.1	20.1	20.0
Crew Management/Protection Services	5,475	4.8	8.4	4.0
Total High Skill Labor	*10,237*	*8.9*	*14.3*	*12.0*
Customer Service	6,872	6.0	6.9	6.0
Clerical	7,363	6.4	7.2	5.0
Office or Dept Manager	4,526	3.9	7.7	5.0
Health Aid/Nurse	12,259	10.7	10.4	5.0
Education Aid/Teacher	5,373	4.7	8.8	5.0
Total Service Sector	*36,393*	*31.7*	*8.2*	*5.0*
Exec Management	4,258	3.7	7.0	6.0
Accounting/Programming/Engineering	12,990	11.3	10.8	7.0
Doctor/Professor/Attorney	6,684	5.8	13.3	11.0
Writer/Artist/Musician	2,293	2.0	14.1	13.0
Total Professional Sector	*26,226*	*22.8*	*11.3*	*9.0*
Homemaker/Students/Unemployed	8,258	7.2	n/a	n/a
Retirees/Disabled	15,773	13.7	n/a	n/a
Total Non-Employed	*24,032*	*20.9*		
Total	114,839	100		

Figure 2 shows the occupational sectors of employed members *only* of the Available Labor Pool. 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 to assess work skills and previous work experience.

Table 3 and Figure 3 show the current employment status and previous work/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 who have previous work/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 who indicate previous training or experience in that same field.

For example, 8,247 Pool members are currently employed as general laborers, construction workers, cleaners, and similar positions. An additional 11,379 Pool members (employed and non-employed) have previous work/training experience in those same type of jobs, for a total of 19,626 individuals.

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

	Current Employment*		Previous Work/Training		Current plus Previous Work or Training**
	Number	+	Number	=	Number
Working with Hands					
Construction, Cleaning, Manual Labor	8,247		11,379		19,626
Farm or Ranch Labor	2,280		510		2,790
Manufacturing and Assembly	2,210		3,098		5,308
Maintenance	1,376		2,803		4,179
Driving (Delivery, Bus, Postal)	2,833		3,399		6,233
Truck Driving/Heavy Equip. Operator	1,005		538		1,543
Skilled Labor	2,834		1,327		4,161
Crew Management	3,606		1,020		4,626
Working with People					
General Customer Service	6,872		7,244		14,116
Office Management	4,526		12,689		17,215
Governmental Services	1,868		1,961		3,829
Executive Management	4,258		3,111		7,370
Advanced Social Services	1,013		1,020		2,032
Working with Numbers					
Clerical	7,363		4,548		11,911
Accounting/Finance/Banking	3,187		1,020		4,207
Researcher/Analyst	5,992		2,841		8,834

(Table continues to next page)

Table 3: Current Work Experience Plus Previous Work or Training Experience (Continued)

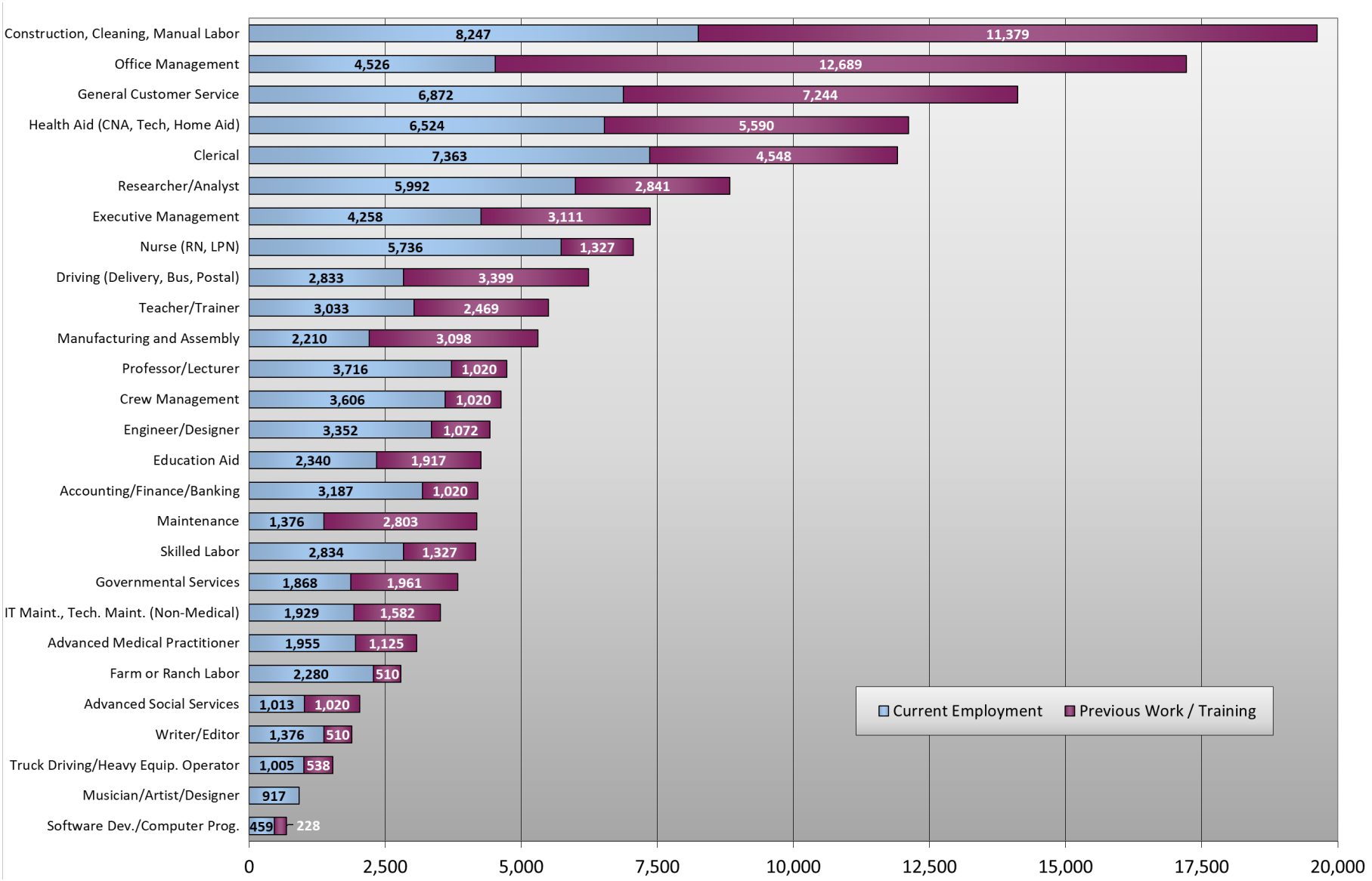
	Current Employment*		Previous Work/Training		Current plus Previous Work or Training**
	Number	+	Number	=	Number
Working with Technology					
IT Maint., Tech. Maint. (Non-Medical)	1,929		1,582		3,510
Software Dev./Computer Prog.	459		228		686
Engineer/Designer	3,352		1,072		4,424
Providing Health Services					
Health Aid (CNA, Tech, Home Aid)	6,524		5,590		12,114
Nurse (RN, LPN)	5,736		1,327		7,063
Advanced Medical Practitioner	1,955		1,125		3,081
Providing Educational Services					
Education Aid	2,340		1,917		4,257
Teacher/Trainer	3,033		2,469		5,501
Professor/Lecturer	3,716		1,020		4,736
Creative Arts					
Musician/Artist/Designer	917		0		917
Writer/Editor	1,376		510		1,886
Total	90,807		75,346		

* 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. Most of the job areas included show more current workers than previous workers. Exceptions include Construction, Cleaning, Manual Labor; Office Management; General Customer Service; Driving and Delivery; Manufacturing and Assembly; Maintenance; Government Services; and Advanced Social Sciences.

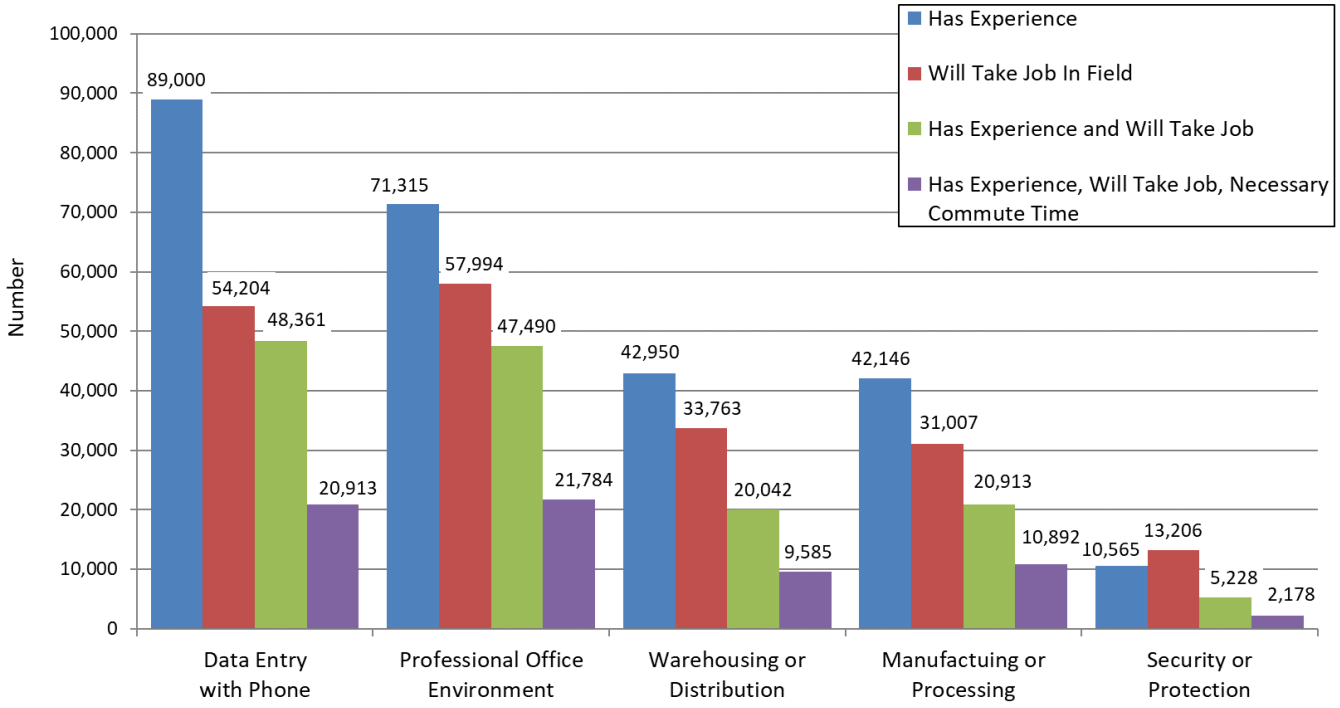
Figure 3: Current Work Experience Plus Previous Work or Training Experience



In addition to asking respondents to provide their current employment status and previous work/training experience (the results of which are shown in the previous table and figure), respondents were asked about the five specific employment fields 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. For example, the figure shows that an estimated 89,000 Pool members report having training and/or experience in data entry with telephone operation (blue column), although fewer (54,204 individuals) would consider employment in that field (red column).

The third column (green) shows number who have experience/training in a field ***and*** are willing to work in that field again. The fourth column (purple) includes those who have training/experience in a field ***and*** are willing to take a job in that field ***and*** are within the necessary commute time for a new or different job (see Glossary for the definition of "necessary commute time").

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.

Figure 5 shows that 30% of those with distribution/warehousing experience moved materials or loaded trucks, 25% worked in inventory control or scheduling, 37% held administration or management positions, and 8% worked in some other area.

Figure 6 shows that 43% of those with manufacturing/processing experience worked in production, fabrication, or assembly. Another 21% worked in maintenance, shipping, or receiving; 30% held positions in administration, management, or sales; and 6% worked in some other area.

Figure 5: Experience/Training in Distribution Center or Warehouse

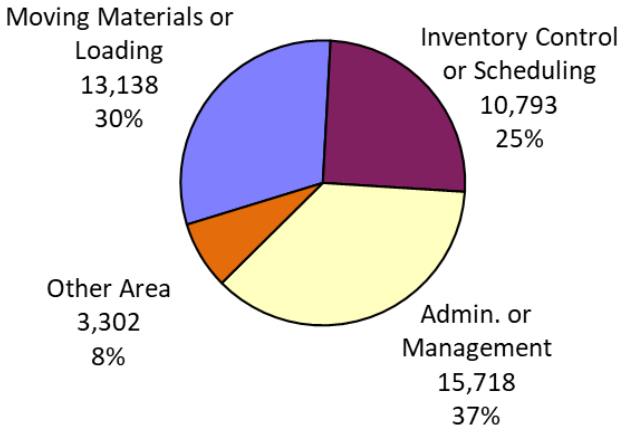
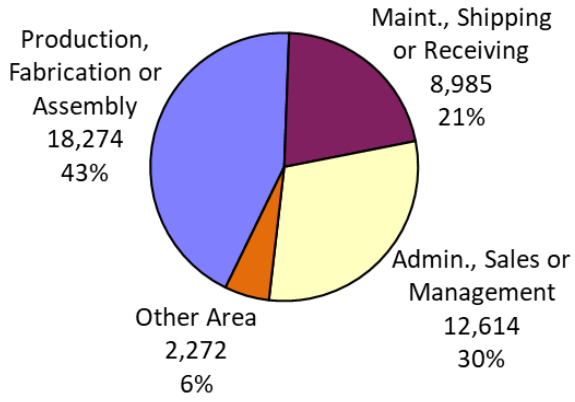


Figure 6: Experience/Training in Manufacturing or Processing



Working Available Labor Pool members were asked to provide the city or town of their workplaces. Figure 7 provides a visual representation of responses. Columbia was the most often mentioned location, followed by Jefferson City, Fulton, Boonville, Moberly, Mexico, and Glasgow.

Figure 7: Workplace Location Word Cloud

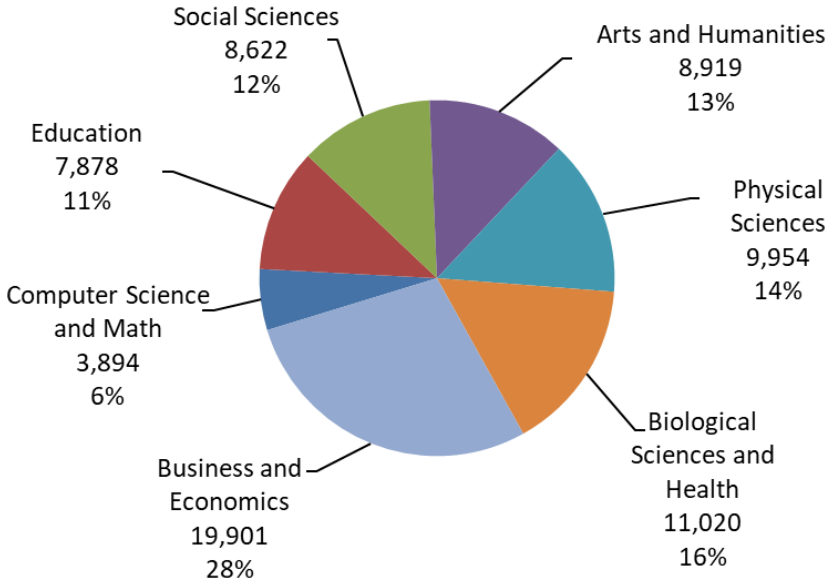
Educational Experiences and Job Satisfaction

Respondents who had completed at least "some college" 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 8 shows that the largest group of Available Labor Pool members studied business and economics (28%). Pool members also studied the biological sciences (16%), physical sciences (14%), arts and humanities (13%), social sciences (12%), education (11%), and computer science and math (6%).

Figure 8: Undergraduate College Major



Survey respondents with at least some college education were asked if they are attending or have attended a technical or community college. Figure 9 shows that 15% of these respondents have technical or community college experience. Table 4 shows that 26.3% report taking general education courses, 21.1% studied nursing or health related topics, 20.5% took business skills courses, and 12.9% studied HVAC, wiring, plumbing, welding, etc.

Figure 9: Community College Experience

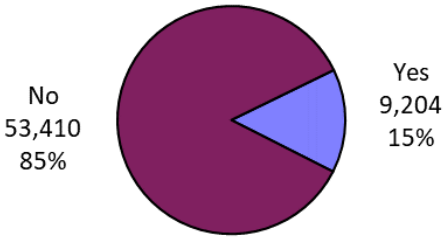


Table 4: Community College Area of Study

Area of Study	Number	Percent
General Education	2,420	26.3
Nursing, CNA, EMT, Healthcare Related	1,945	21.1
Business Skills (Appraising, Accounting)	1,882	20.5
Maintenance and Repair Skills (HVAC, Wiring, Plumbing, Welding	1,189	12.9
Computer Skills (IT, CAD, GIS)	841	9.1
Office Skills (Office Technology, Customer Service)	603	6.6
Manufacturing or Mechanical Skills	195	2.1
Cosmetology, Beautician, (non-medical) Personal Care	129	1.4
Total	9,204	100

Figure 10 and Table 5 show responses to questions regarding job satisfaction. When presented with the statement "I enjoy the things I do," for example, 52.7% "agree" and 31.5% "strongly agree." When presented with the statement "I have a generally positive work environment," 51.4% "agree" and 26.1% "strongly agree."

Positive responses to "I have a reasonable workload" and "I receive fair pay" are similar, with 62.6% "agreeing or strongly agreeing" (combined) with the former, and 62.1% "agreeing or strongly agreeing" (combined) with the latter.

Slightly fewer respondents (58.5%) "agree and strongly agree" (combined) with the statement "I have a fair chance at pay increase."

For the statement "I have a fair chance at a promotion," 33.3% "agree or strongly agree" (combined) and 36.8% "disagree or strongly disagree" (combined).

Figure 10: Job Satisfaction Among Available Labor Pool Workers

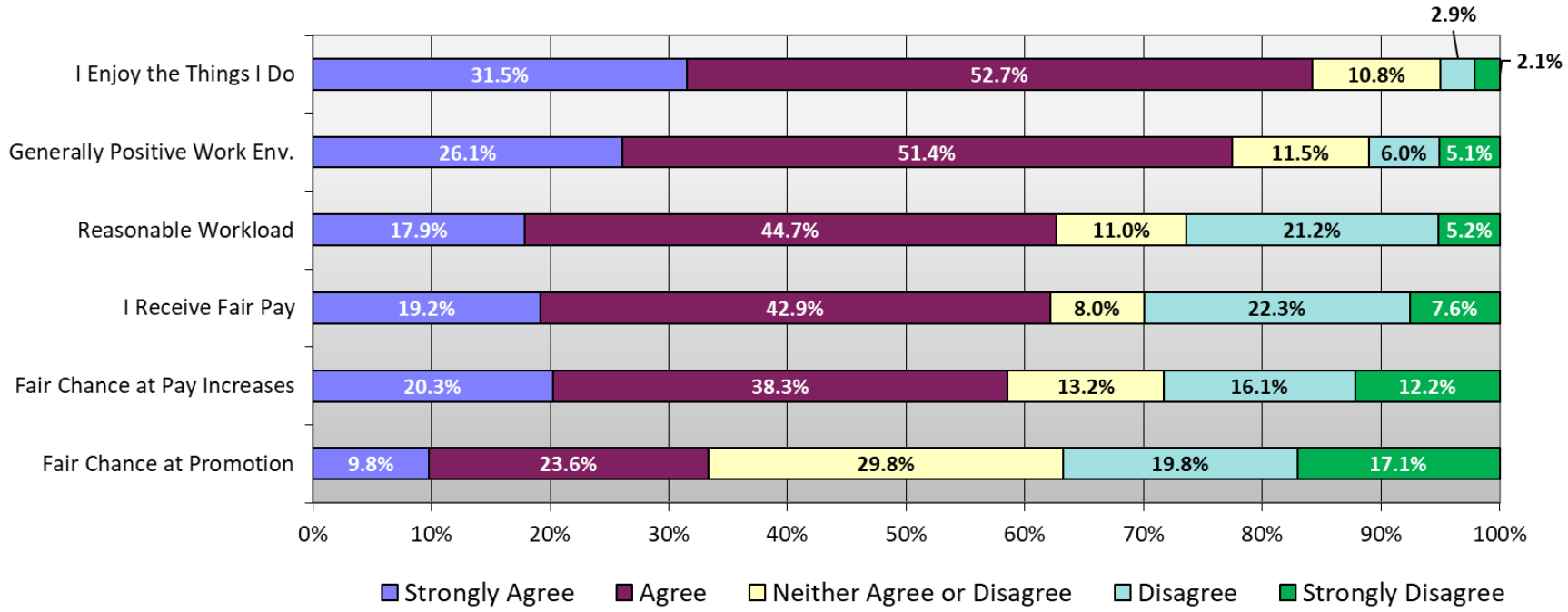


Table 5 shows combined “agree” and “strongly agree” responses of working Pool members and working non-Pool respondents. The table shows that 84.2% of the working Pool members “agree or strongly agree” with the statement regarding “enjoying the things I do,” while 90.4% of the working non-Pool respondents suggest the same.

The statement with the greatest disparity between working Pool members and working non-Pool respondents is “I receive fair pay.” About 62% of the working Pool members “agree or strongly agree” that they receive fair pay, while 81% (or 19% more) of the working non-Pool respondents feel the same way.

Table 5: Job Satisfaction Among Workers: Pool and Non-Pool Members

	Agree or Strongly Agree (combined)		
	Desired Benefits of Working Pool	Benefits Received by Working Non-Pool	
	Percent	Percent	*Difference*
I Enjoy the Things I Do	84.2	90.4	-6.1
Generally Positive Work Env.	77.5	85.1	-7.6
Reasonable Workload	62.6	73.5	-10.9
I Receive Fair Pay	62.1	81.1	-19.0
Fair Chance at Pay Increases	58.5	66.8	-8.2
Fair Chance at Promotion	33.3	26.9	6.5

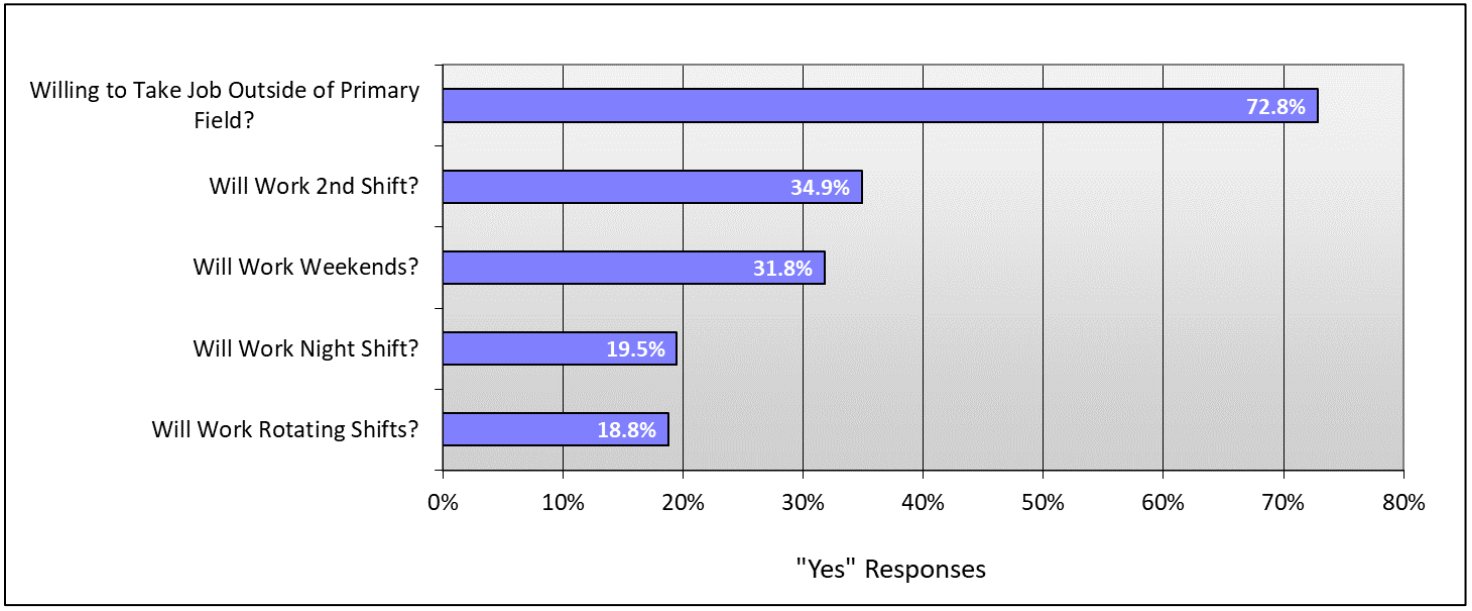
Considerations for Employment

An important consideration for many employers looking to locate or expand operations is whether workers are willing to pursue new employment opportunities outside of their primary fields. 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 72.8% of the Available Labor Pool are willing to accept positions outside of their primary fields of employment. The figure also shows responses to four questions regarding work shifts. Respondents were asked if they would be willing to work the 2nd shift, the night shift, rotating shifts, and weekends.

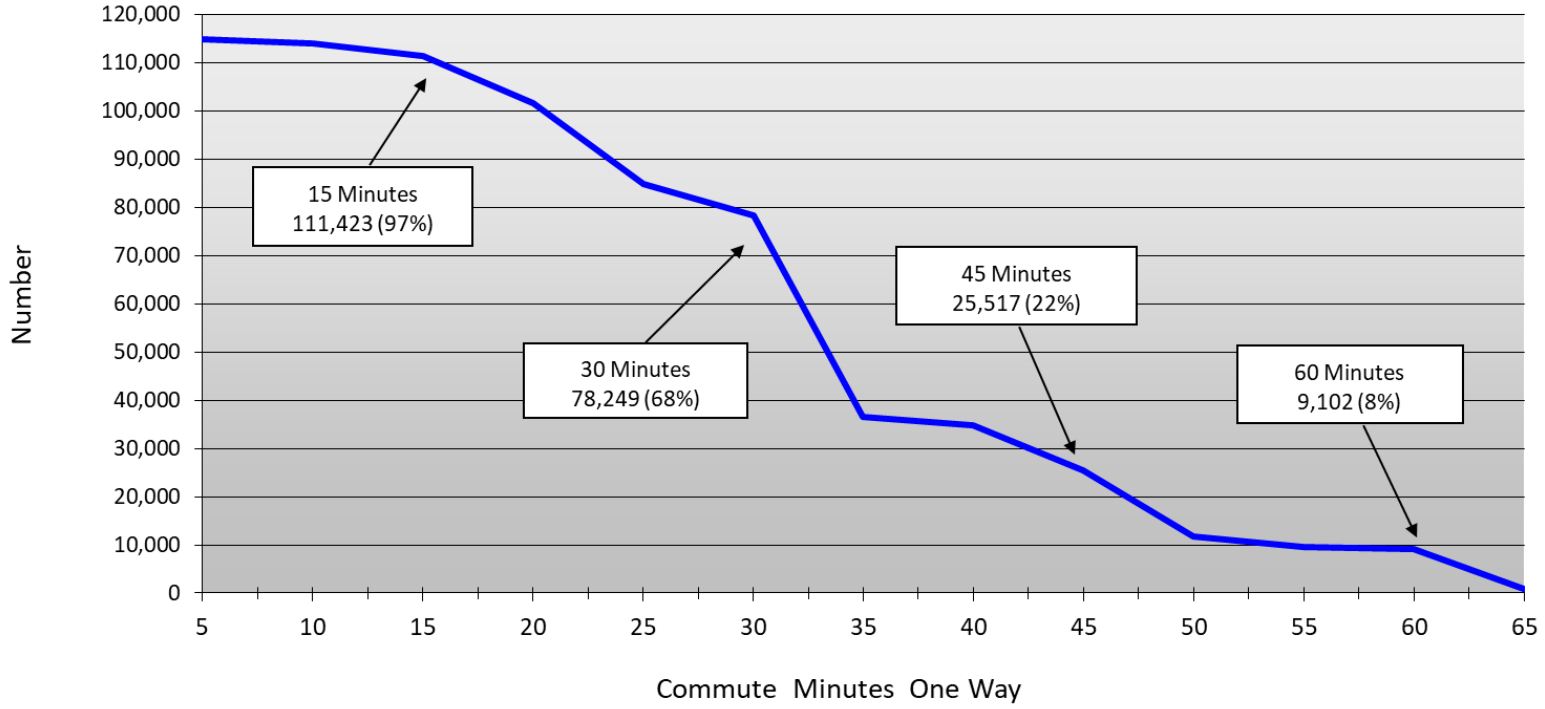
The figure shows that about 35% of the Available Labor Pool is willing to work the 2nd shift and about 32% will work weekends. Fewer will work the night shift (19.5%) and/or rotating shifts (18.8%).

Figure 11: Considerations for Employment



Another important consideration for many employers is whether workers are willing to commute for a new or different employment opportunity. Figure 12 shows that 22% of the Pool will commute up to 45 minutes, one way, for a job. Many (68%) will commute for 30 minutes, one way, for a job, and almost all (97%) will commute up to 15 minutes, one way, for a job.

Figure 12: Available Labor by Commute Minutes



Available Labor Pool members were presented with various benefits and opportunities and were asked if each would be a “very important” consideration for taking a new job. Answer options included “yes” and “no.”

Figure 13 shows that the five most important benefits/opportunities are, in order, good salary or hourly pay, good retirement benefits, flexible hours/remote work, good vacation benefits, and good health benefits. Each of these benefits/opportunities are considered “very important” by more than 80% of the Available Labor Pool, each.

On-the-job training (OJT)/paid training/education benefits are “very important” for about 62% of the Pool. Allowances for items like clothing or phones are “very important” for about 35% of the Pool, and memberships or discount programs for products or services are “very important” for about 32% of the Pool. The least desired benefit is childcare assistance which is “very important” for about 15% the of Pool.

Figure 13: Benefits/Opportunities Very Important to Change Jobs

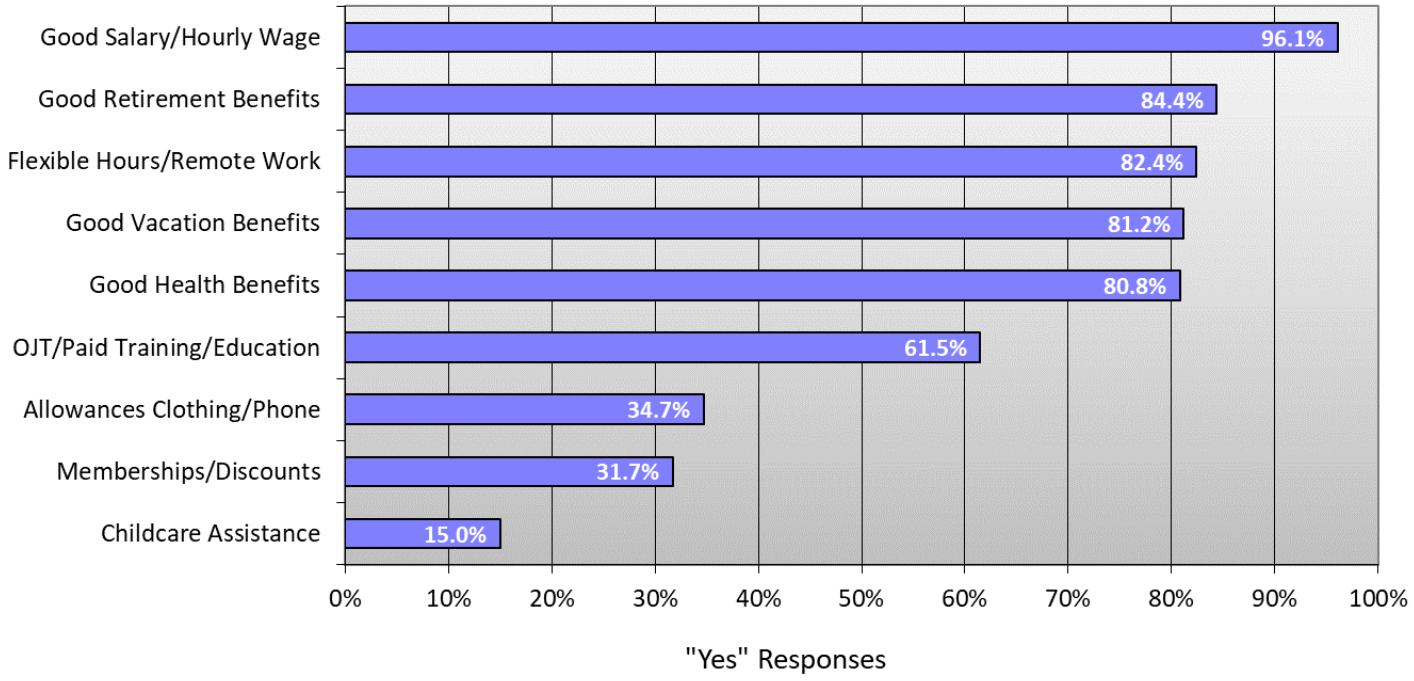


Table 6 shows information from the previous figure (left percent column) along with the percentages of working Pool members *who currently receive* the same benefits/opportunities (right percent column). The third column shows the difference between the two.

Table 6 shows that 96.1% of Pool members consider a good salary/hourly wage as "very important" for a new job, while 73.7% of working Pool members report that they currently receive a good salary/hourly wage. Similarly, 82.4% of the Pool consider flexible hours/remote work as "very important," while 58.8% working Pool member report receiving that benefit/opportunity currently.

Larger percentages of Pool members currently receive training/education benefits (68.2%) and memberships/discount benefits (41.2%) than consider those benefits as "very important" (61.5% and 31.7%, respectively).

Table 6: Desired Benefits/Opportunities and Currently Offered Benefits/Opportunities

	Very Important to Change Jobs	Currently Received by Working Pool Members	
	Percent	Percent	*Difference*
Good Salary/Hourly Wage	96.1	73.7	22.4
Good Retirement Benefits	84.4	72.8	11.6
Flexible Hours/Remote Work	82.4	58.8	23.6
Good Vacation Benefits	81.2	73.6	7.6
Good Health Benefits	80.8	76.1	4.7
OJT/Paid Training/Education	61.5	68.2	-6.7
Allowances Clothing/Phone	34.7	22.6	12.1
Memberships/Discounts	31.7	41.2	-9.5
Childcare Assistance	15.0	4.2	10.8

Table 7 presents benefits/opportunities and occupational categories (shown in Table 2). Benefit columns are ordered from left to right by the "Entire Available Labor Pool" row.

Table 7: Benefits/Opportunities and Occupational Categories

(Percent "Very Important" Shown)

Current Occupational Category	Good Salary or Hourly Wage	Good Retirement Benefits	Flexible Hours, Flex-time, Remote Work	Good Vacation Benefits	Good Health Benefits
Entire Available Labor Pool	96%	84%	82%	81%	81%
Construction, Labor, Cleaning, Delivery	100%	77%	74%	81%	71%
Manufacturing, Maintenance, Trucking	100%	90%	67%	80%	90%
Mechanic, Welder, Comp Tech	100%	100%	67%	83%	83%
Crew Management, Protection Services	77%	85%	100%	93%	77%
Customer Service	100%	94%	88%	100%	100%
Clerical	100%	94%	71%	88%	82%
Office or Dept Manager	100%	100%	90%	100%	80%
Executive Management	100%	93%	79%	86%	86%
Accounting, Programming, Engineering	100%	91%	97%	88%	84%
Health Aid, Nurse	93%	93%	85%	85%	89%
Education Aid, Teacher	85%	92%	62%	85%	100%
Doctor, Professor, Attorney	93%	93%	87%	80%	73%
Writer, Artist, Musician	100%	75%	100%	75%	75%
Homemaker, Student, Unemployed	95%	79%	83%	74%	83%
Retired, Disabled	97%	59%	89%	61%	69%

Table 7: Benefits/Opportunities and Occupational Categories (Continued)

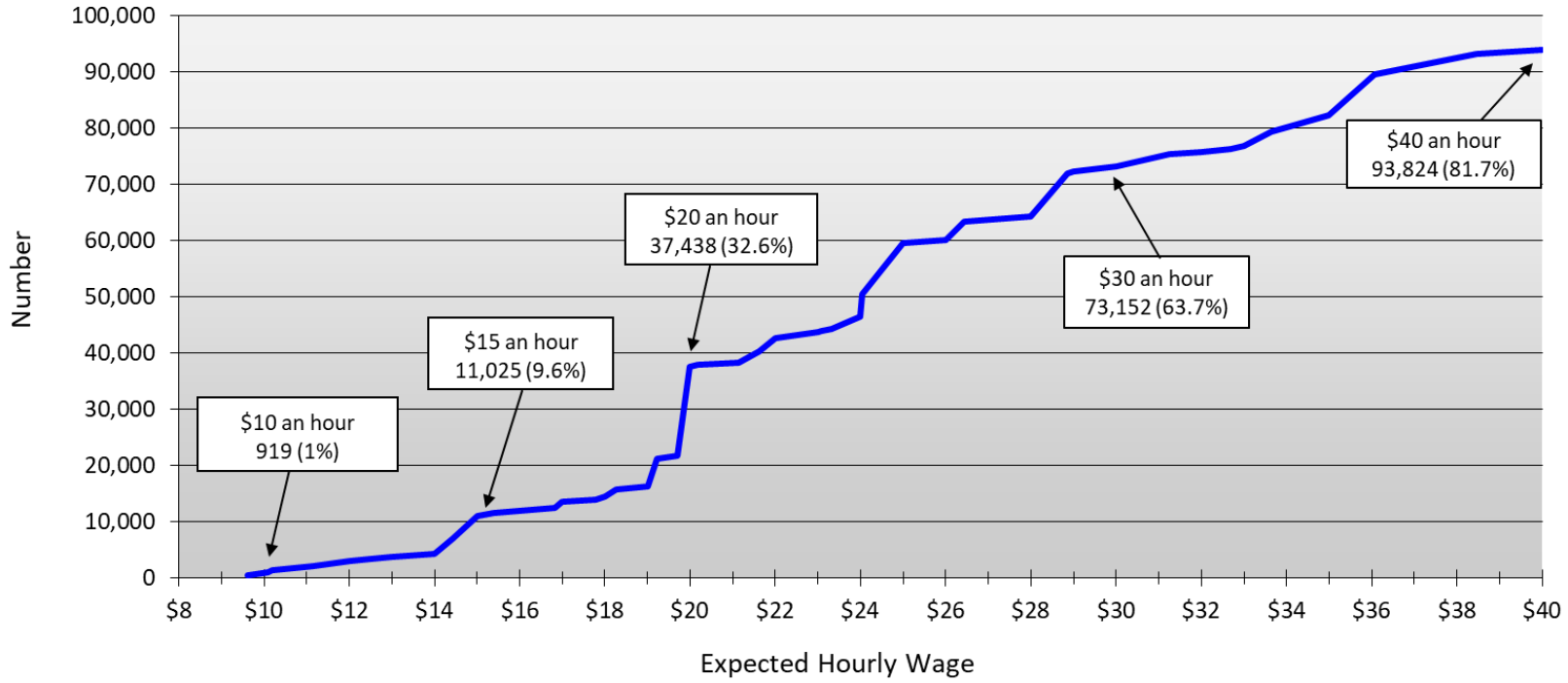
(Percent "Very Important" Shown)				
OJT, Paid Training, Education	Allowances for Clothing, Phone, etc.	Memberships or Discounts at Stores/Gyms	Childcare Assistance	
62%	35%	32%	15%	Entire Available Labor Pool
74%	47%	40%	10%	Construction, Labor, Cleaning, Delivery
44%	33%	11%	11%	Manufacturing, Maintenance, Trucking
67%	17%	17%	14%	Mechanic, Welder, Comp Tech
57%	38%	50%	0%	Crew Management, Protection Services
88%	50%	44%	25%	Customer Service
59%	41%	29%	35%	Clerical
56%	30%	20%	10%	Office or Dept Manager
60%	14%	14%	0%	Executive Management
50%	31%	22%	9%	Accounting, Programming, Engineering
74%	44%	33%	19%	Health Aid, Nurse
77%	15%	15%	38%	Education Aid, Teacher
27%	20%	38%	20%	Doctor, Professor, Attorney
50%	25%	25%	25%	Writer, Artist, Musician
89%	26%	26%	16%	Homemaker, Student, Unemployed
49%	39%	46%	8%	Retired, Disabled

Current Occupational Category

Wage Expectations

The expected wage for a new or different job is another important consideration for employers and economic developers. Figure 14 shows expected wages for members of the Available Labor Pool. It is estimated that about a third (32.6%) of the Available Labor Pool is available for an hourly wage of $20[2]. About two-thirds (63.7%) of the Pool are available at $30 per hour.

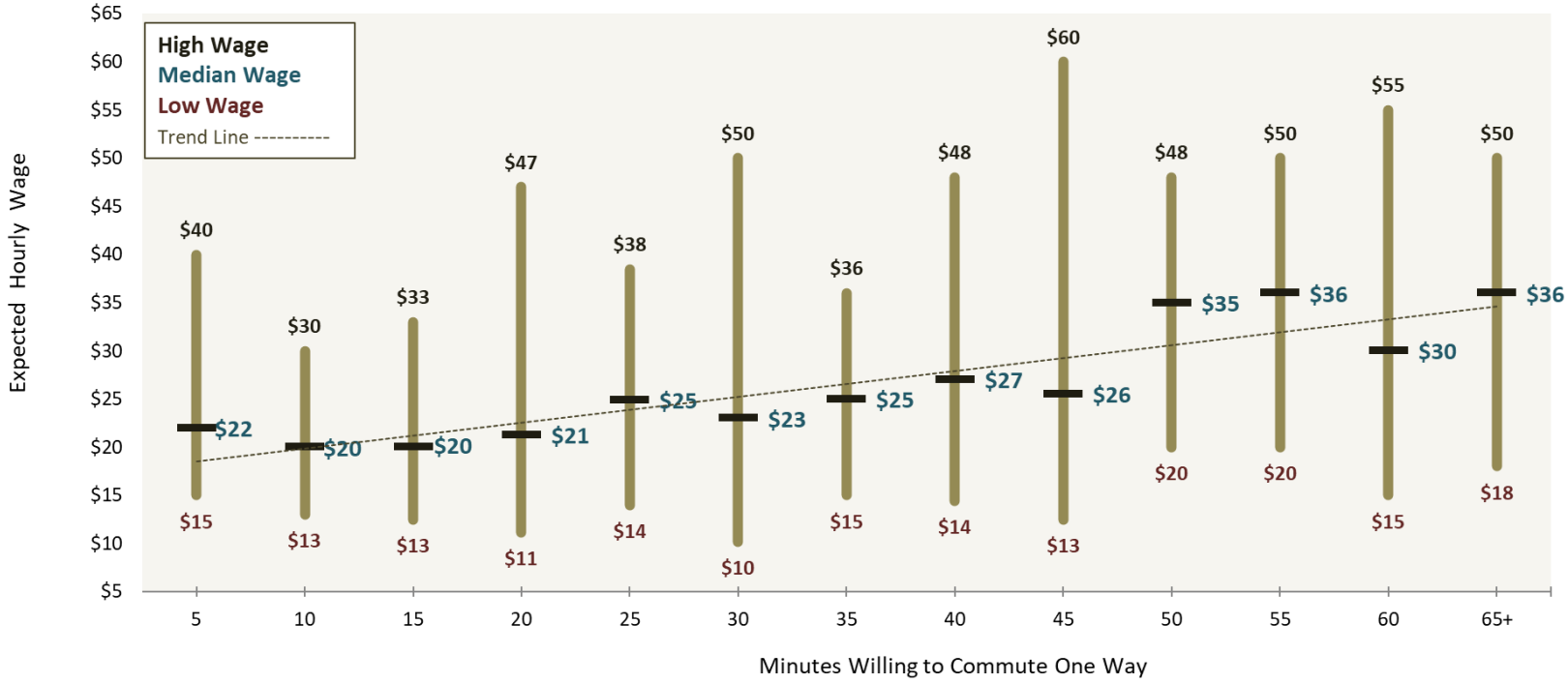
Figure 14: Available Labor by Expected Hourly Wage



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

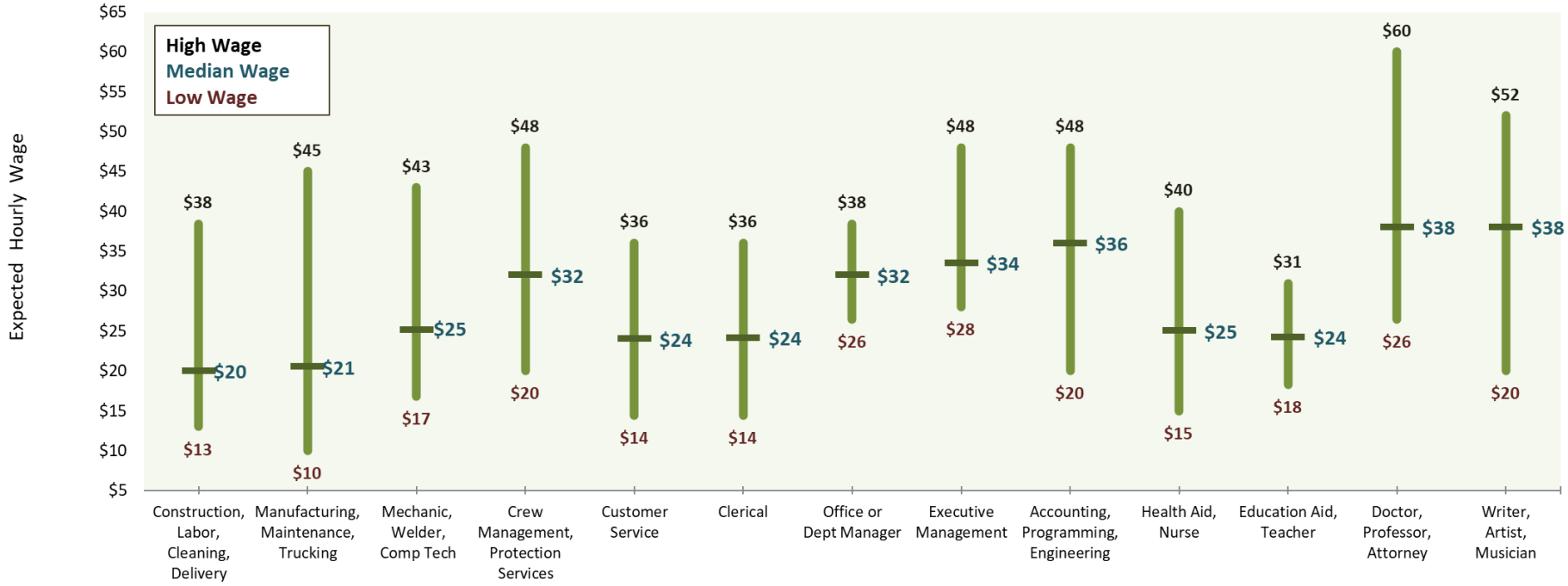
The figure below shows expected hourly wages and the number of minutes Pool members are willing to commute, one way, for a new job. The range of wages (high and low) and median wages are shown in five minute increments. In general, respondents expecting higher wages are willing to commute for more minutes than those expecting lower wages.

Figure 15: Expected Hourly Wage by Minutes Willing to Commute One Way



The figure below shows the median and range of expected hourly wages by occupational category. The lowest low expected wages tend to be associated with categories that might be considered entry-level by some people. The highest low wages tend to be associated with jobs that generally require extensive education and training.

Figure 16: Expected Hourly Wage by Current Occupational Category



The figure below shows the median and range of expected hourly wages for respondents who have experience in a field ***and*** who are willing to work again in that field (as shown in Figure 4).

Figure 17: Expected Hourly Wage Among Those With Experience and Willing to Work in Field

Subsets of the Available Labor Pool

The previous portion of the report addressed the entire Available Labor Pool. This section examines three subsets of the Available Labor Pool. Each provides a different look at the Available Labor Pool, and they are not mutually exclusive. The three subsets are: those residing *Within the Necessary Commute Time*, the *Underemployed Available Labor Pool Workers*, and the *Potential Entrepreneurs in the Available Labor Pool*.

Subset 1: Within Necessary Commute Time

To present an even more refined picture of the workers who would seriously consider a new employment opportunity, the data in this section includes *only those respondents* who are determined to reside "within the necessary commute time." **"Necessary Commute Time"** is defined as a commute time stated by the respondent that is equal to or greater than the time necessary to commute from their Zip Code of residence to the Zip Code at the center of the labor basin. For example, a pool member willing to travel for 30 minutes, one-way, for a job opportunity and who lives 15 minutes from the center of the labor basin is considered to be "within the necessary commute time" for a new job.

Figure 18 shows that 4,864 Pool members within the necessary commute time are available for a job at $15 per hour. At $20 an hour, the available labor jumps to 18,331, and by $30 an hour, the available labor climbs to 35,246. The figure shows that 48,946 labor pool members within the necessary commute time are available at $40 an hour.

The figure also highlights various "wage preference plateaus" that may be of interest to current and potential employers. A wage preference plateau is a situation in which an increase in wage results in an insignificant or small increase in available labor. As noted, 4,864 members of this subset are interested in a job at $15.00 an hour. At $16.00 an hour there are an estimated 5,528 individuals available. So, while there is certainly an increase in the number of available workers at this higher wage rate, the increase is only 664 individuals – a relatively small increase given the overall size of this subset of the Available Labor Pool.

Additional wage plateaus can be seen between $17 and $18 an hour (an increase of 660 individuals), between $20 and $21 per hour (an increase of 450 individuals), between $22 and $23 per hour (an increase of 410 individuals), and between $29 and $30 per hour (an increase of 340 individuals).

Figure 18: Available Labor by Hourly Wage for Within Necessary Commute Time

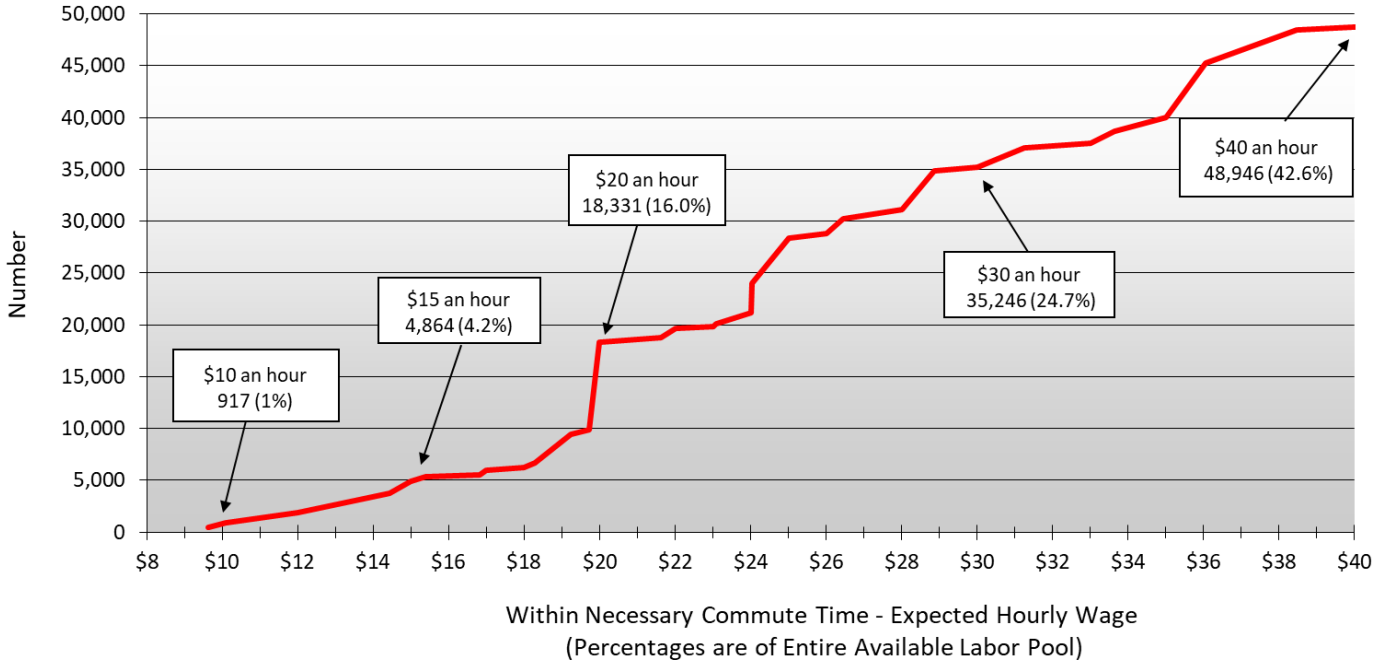


Table 8 shows expected wages the four main occupational sectors (employed only) of those included in the necessary commute time subset. The table shows that 31% of the general laborers within the necessary commute time will take a new or different job with an hourly wage of $16 (all things being equal), while 72% will take a job with an hourly wage of $24.[3]

Of high skill laborers within the necessary commute time, none will take a job with an hourly wage of $16, while 19% will take a job with an hourly wage of $24. Half of the high skill laborers within the necessary commute time are available for a new job at $32 an hour.

Among service sector workers within the necessary comute time, 15% are available for job with an hourly wage of $15, while 59% are available at an hourly wage of $24. Finally, no professional workers are available for a job with an hourly wage of $16, while 18% are available for an hourly wage of $24. Half of the professional workers within the necessary commute time are available for a new job with an hourly wage of $36.

Table 8: Wage Expectations by Sector for Within Necessary Commute Time

Within Necessary Commute Time

	General Labor		**High Skill Labor**		**Service Sector**		**Professional**	
	(N = 14) (+/- 25.9% MoE)		(N = 15) (+/- 25.5% MoE)		(N = 48) (+/- 14.1% MoE)		(N = 38) (+/- 15.9% MoE)	
	Number	*Cumulative*	*Number*	*Cumulative*	*Number*	*Cumulative*	*Number*	*Cumulative*
$40 or More	6,257	100%	6,452	100%	21,076	100%	16,654	100%
Up to $40	6,257	100%	5,144	80%	21,076	100%	12,294	74%
Up to $36	6,257	100%	4,272	66%	20,641	98%	8,370	50%
Up to $32	6,257	100%	3,400	53%	18,899	90%	6,975	42%
Up to $28	6,257	100%	2,093	32%	16,722	79%	5,231	31%
Up to $24	4,519	72%	1,221	19%	12,367	59%	3,052	18%
Up to $20	2,781	44%	349	5%	7,577	36%	1,308	8%
Up to $16	1,912	31%	0	0%	3,222	15%	0	0%
Up to $12	1,043	17%	0	0%	1,045	5%	0	0%
Up to $7	0	0%	0	0%	0	0%	0	0%

[3] It is assumed that a job seeker would, if offered, take a higher hourly wage than expected. Hence cummulative percentages are provided.

Table 9 shows the expected wages for general labor and service sector workers who are *willing to change fields of employment* and thus are presumably potential workers for either of these two sectors. Specifically, the table *includes* respondents who:

1 are willing to travel the necessary commute time from his/her community to the center of the labor basin, *and*
2 are willing to change their primary field of employment, *and*
3a are employed as general laborers or service sector employees, *or*
3b are currently non-employed.

Available Labor Pool members meeting these criteria are called "transferable workers." Table 8 (previous page) shows data representing each occupational sector independently and does not include non-working pool members. Table 9, on the other hand, allows a general laborer or service sector worker to be classified in both sectors if he or she indicates a willingness to change fields of employment. Additionally, it is assumed that a non-working pool member will take a job (all things being equal) in either the general labor sector or the service sector.

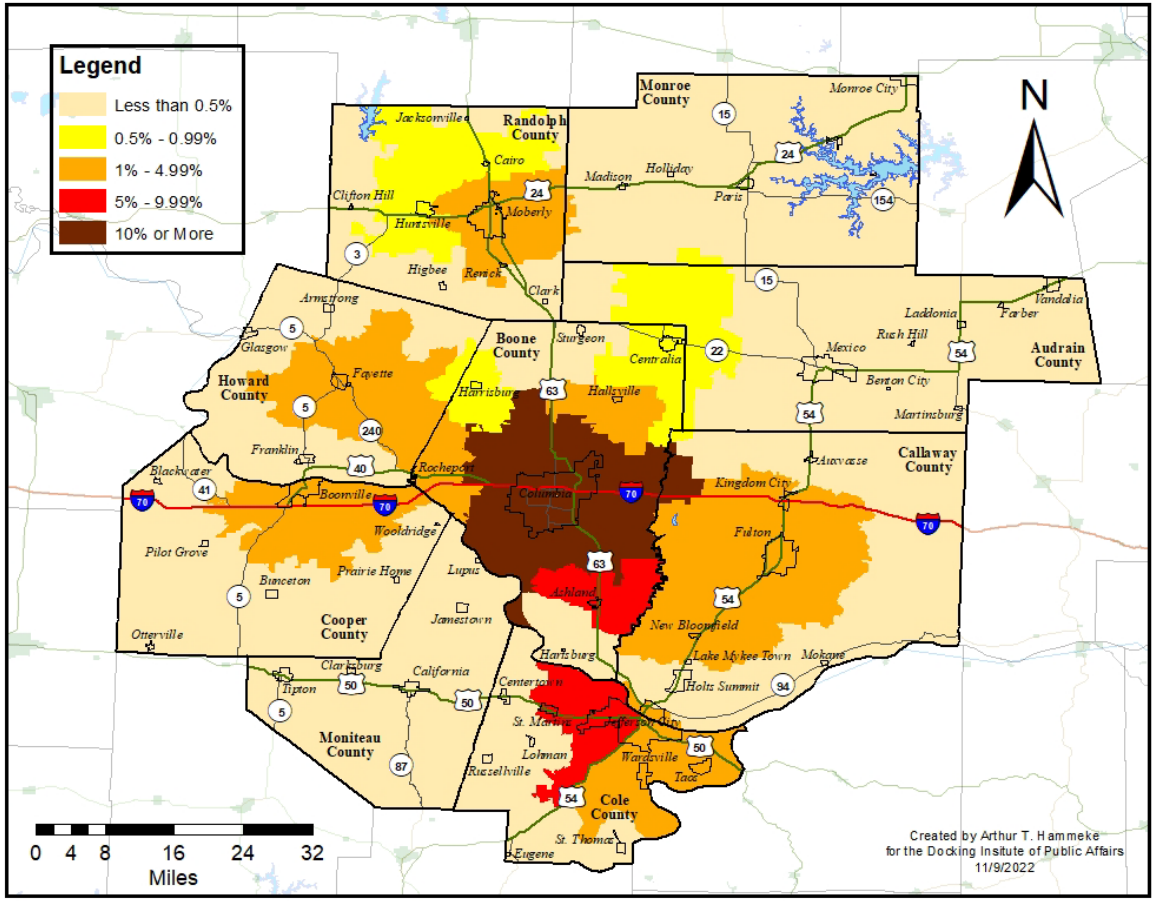
High skill and professional workers are excluded from Table 9 because it is presumed that, as a general rule, people in occupations such as machinist, electricians, medical doctors, lawyers, engineers, professors, etc… are unlikely to transfer into lower-skill general labor and service/support occupations. It is also presumed that, because professional and highly skilled occupations require extensive education and/or training, general laborers and service sector workers are unable to transfer to high skill labor or professional positions - at least in the near term.

Table 9: Expected Hourly Wages of Transferable Workers

	Within Necessary Commute Time			
	Transferable General Labor (N= 78) (+/- 11.1% MoE)		**Transferable Service Sector** (N= 87) (+/- 10.5% MoE)	
	Number	*Cumulative*	*Number*	*Cumulative*
$40 or More	33,984	100%	37,905	100%
Up to $40	32,677	96%	36,598	97%
Up to $36	29,191	86%	32,677	86%
Up to $32	27,448	81%	30,498	80%
Up to $28	23,527	69%	26,577	70%
Up to $24	16,120	47%	17,863	47%
Up to $20	7,842	23%	9,585	25%
Up to $16	4,357	13%	4,793	13%
Up to $12	871	3%	871	2%
Up to $7	0	0%	0	0%

Map 3 shows how each Zip Code area compares to all other Zip Code areas in terms of the percent. Available Labor Pool members residing within the necessary commute time in the Columbia/Boone County Labor Basin are included in Map 3. The map shows that Audrain, Boone, Cole, Cooper Howard, and Randolf counties share up to 5% of this subset of the Available Labor Pool (see yellow and orange areas on the map). Zip Code areas primarily located in Boone and Cole Counties share 5% or more of this subset of the Available Labor (see red and brown areas on the map).

Map 3: Percent within Necessary Commute Time by Zip Code



Subset 2: Underemployed Available Labor Pool Workers

Underemployment — individual characteristics that exceed those required for 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.[4] 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 unable to work as many hours as they would like at their job.

Of the 90,807 *employed members* of the Available Labor Pool (shown in Figure 19), 30% answered "yes" to one or more of the questions presented above. These Pool members are considered "underemployed." Figure 20 shows that the underemployed workers represent 30% (or 27,385 individuals) of the employed members of the Pool.

Figure 19: Employed and Unemployed Members of the Available Labor Pool

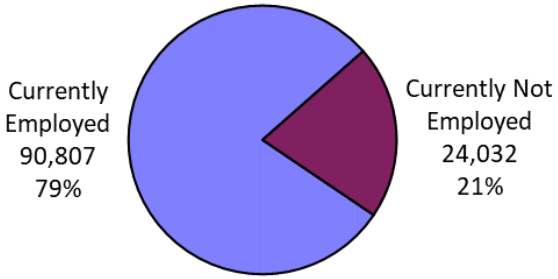
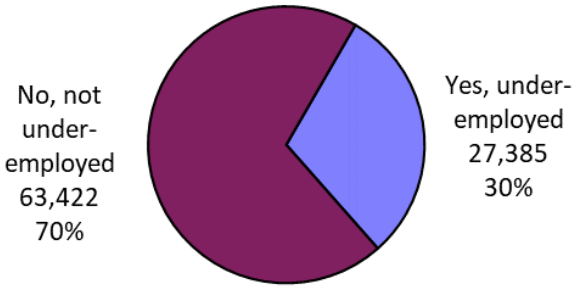


Figure 20: Underemployed Workers



[4] "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 21 shows the percentages of the positive responses (i.e., “yes” answers) to the various measures of underemployment. More than a quarter (28%) 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 23% consider themselves underemployed because they possess skills that are not being used currently on the job. When asked if they are underemployed because they earned more money at a past but similar job, 13.6% responded “yes,” while 7.1% feel they are not able to work as many hours as they would like at their job.

Figure 21: Reasons for Underemployment

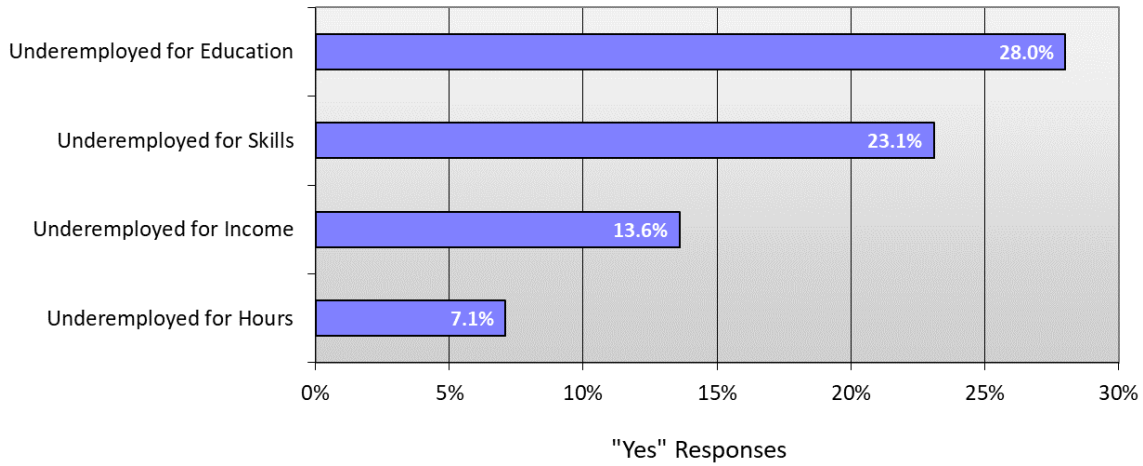


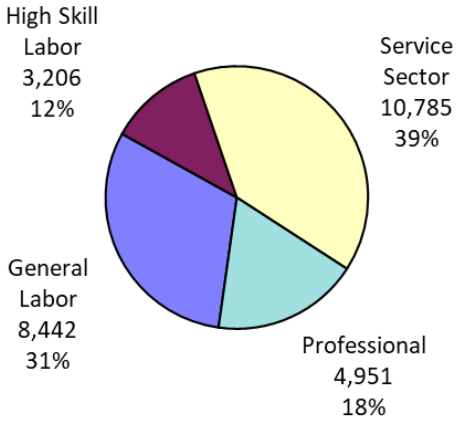
Table 10 and Figure 22 show some characteristics of the underemployed members of the Available Labor Pool. The table shows the education levels of the underemployed. About 84% of the underemployed workers have at least some college experiences, while all (100%) have a least a high school diploma.

Figure 22 shows that general laborers make up 31% of the underemployed workers, while high skill laborers make up 12%. Service sector workers make up the largest percentage of underemployed workers at 39%, and professionals make up 18%.

Table 10: Highest level of Education Achieved Among Underemployed

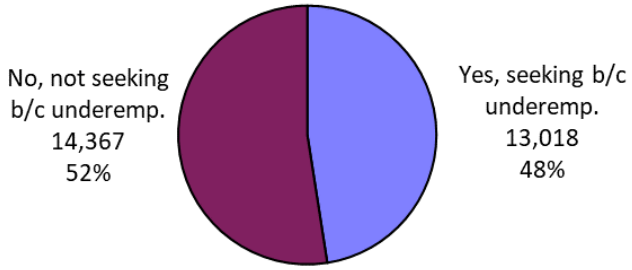
	Number	Percent	Cumulative Percent
Doctoral Degree	1,125	4.1	4.1
Masters Degree	5,659	20.7	24.8
Bachelors Degree	9,290	33.9	58.7
Associates Degree	3,198	11.7	70.4
Some College	3,849	14.1	84.4
High School Diploma Only	4,264	15.6	100
Less HS Diploma	0	0.0	
Total	27,385	100	

Figure 22: Occupational Sectors of Underemployed Workers



Underemployed workers were asked if they "are available or a new or different job because they are underemployed?" Figure 23 shows that 48% (or 13,018 individuals) of the underemployed workers are seeking new employment to address underemployment.

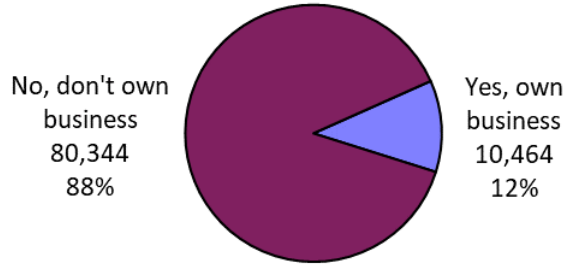
Figure 23: Seeking New Employment to Address Underemployment



Subset 3: Potential Entrepreneurs in the Available Labor Pool Workers

The desire for self-employment may be another indicator of the types of workers available in the labor basin. Figure 24 shows that of the 114,839-member Available Labor Pool, 12% report owning their own businesses.

Figure 24: Business Ownership



Non-business-owning members of the Available Labor Pool (estimated to be 80,344 or 88% of the Pool) were asked the question: "In the past few years have you seriously thought about starting your own business and making it your full-time job?" Figure 25 shows that 17% responded "yes." These Pool members are considered "potential entrepreneurs."

Figure 25: Seriously Thought About Starting Own Business

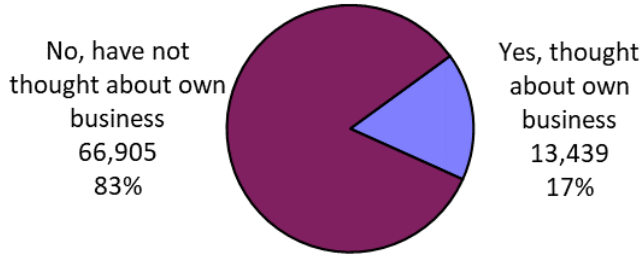


Table 11 and Figures 26 and 27 show some characteristics of the *potential entrepreneurs*. The tables shows that 85.6% of the potential entrepreneurs have some college experience and 68.9% have at least Bachelor's degrees.

Table 11: Highest Level of Education Achieved Among Potential Entrepreneurs

	Number	Percent	Cumulative Percent
Doctoral Degree	1,447	10.8	10.8
Masters Degree	2,504	18.6	29.4
Bachelors Degree	5,307	39.5	68.9
Associates Degree	1,409	10.5	79.4
Some College	833	6.2	85.6
High School Diploma Only	1,524	11.3	96.9
Less HS Diploma	415	3.1	100
Total	13,439	100	

Figure 21 shows that general laborers make up 17% of the potential entrepreneurs, while high skill laborers make up only 2%. Service sector workers make up 40%, and professionals make 27%. Non-working Pool members make up 14% of the potential entrepreneurs.

Figure 26: Occupational Sectors of Potential Entrepreneurs

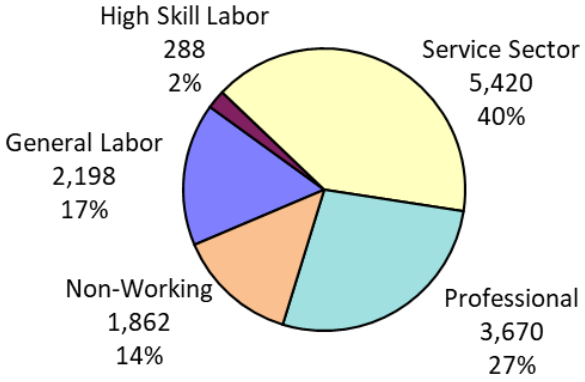
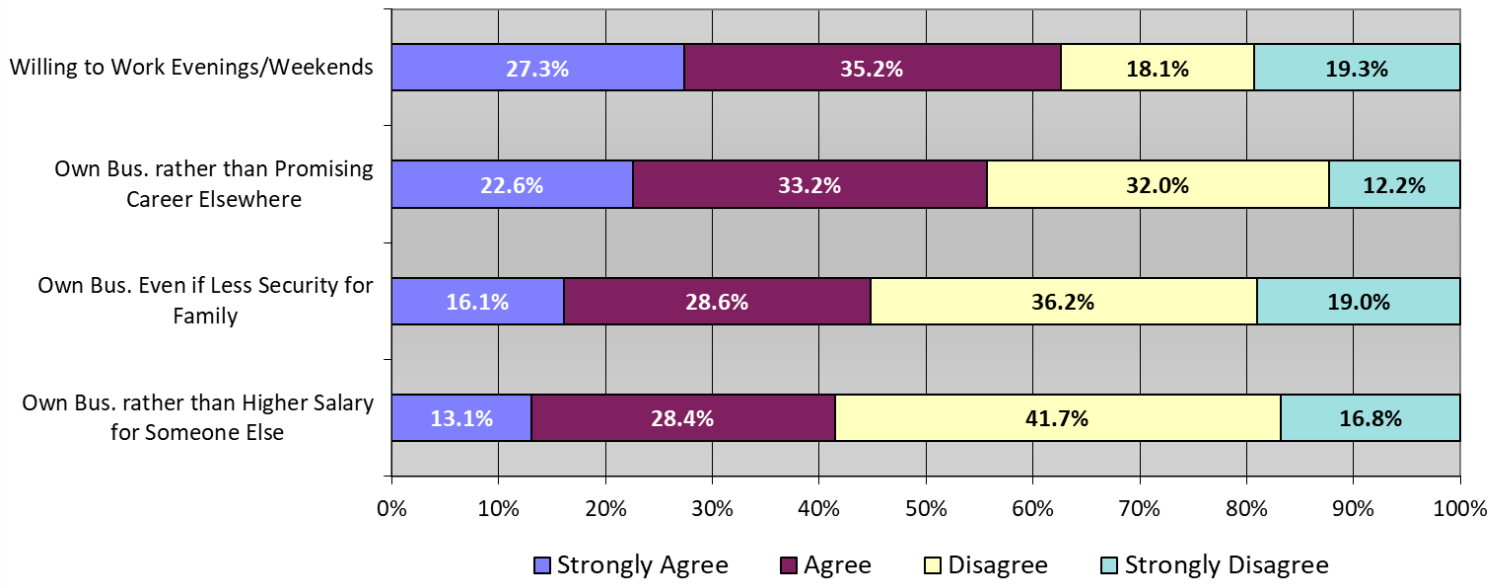


Figure 27 shows the strength of desire to own a business. About 27% of this subset of the Pool "strongly agree" with a statement asking if they "are willing to work evenings or on weekends to make their business a success," while about 35.2% "agree."

Almost 23% "strongly agree" with a statement asking if they "would rather own their own business than pursue a promising career elsewhere," and a third (33.2%) "agree." Almost a third (32%) also "disagree" with this statement.

More than half of the potential entrepreneurs "disagree" or "strongly disagree" with the remain two statements: "I am willing to have less security for my family in order to operate my own business" (55.2%) and "I would rather own their own business than earn a higher salary working for someone else" (58.5%).

Figure 27: Strength of Desire for Own Business among Potential Entrepreneurs



Comparative Analysis: 2001, 2002, 2003, 2005, 2007, 2015, 2020, and 2022 Reports

The Docking Institute of Public Affairs conducted similar labor studies in the Columbia/Boone County Labor Basin and provided reports in 2001, 2002, 2003, 2005, 2007, 2015, and 2020. This section of the report compares some of the data collected from all eight studies.

Table 12 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 408,904 (or by 64,731 individuals) in the past 21 years since the first area labor study. The Civilian Labor Force increased from 193,799 to 202,261, and the number of employed individuals has increased from 189,832 to 195,750. The unemployment rate has fluctuated from between 2.04% and 4.30%.

The table also shows the Available Labor Pools for each year. The size of the Pool remained stable from 2002 to 2007 but increased by about 30,000 people between 2007 and 2015, but it fell by about 18,500 between 2015 and 2020, and again by about 4,600 between 2020 and 2022.

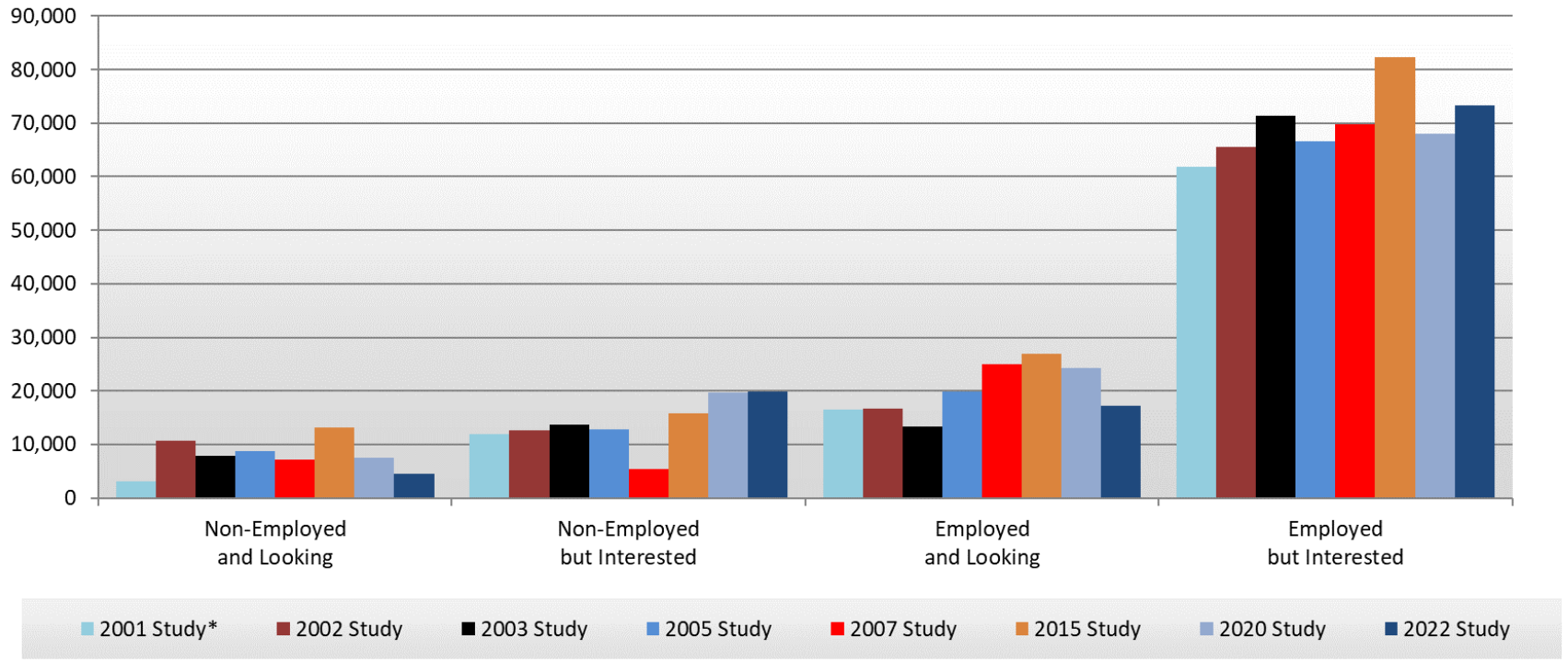
Table 12: Key Population and Employment Indicators

Columbia / Boone County Labor Basin	2001 Study*	2002 Study	2003 Study	2005 Study	2007 Study	2015 Study	2020 Study	2022 Study
Labor Basin Population	339,842	350,905	355,230	357,935	365,472	397,182	404,573	408,904
Civilian Labor Force	193,799	205,193	204,131	202,557	201,493	208,757	203,375	202,261
Employed	189,832	199,137	197,333	195,090	193,773	200,507	197,806	195,750
Average Unemployment Rate	2.04%	2.95%	3.33%	4.30%	3.80%	3.94%	2.74%	3.22%
Available Labor Pool	93,232	105,398	106,228	107,928	107,388	137,968	119,471	114,839

* Monroe County was not included in the 2001 Study.

Figure 28 shows that there are more “employed but interested” Pool members in 2022 than in 2020, but fewer in 2020 and 2022 than in 2015. There are fewer “employed and looking” pool members in 2022 than in 2020, but not a few as in 2003.

Figure 28: Available Labor Pool Comparison



* Monroe County was not included in the 2001 study.

Table 13 compares occupational sectors and education levels from the eight studies. The 2001 and 2003 studies stand out with the smallest percentages of non-working pool members. The year with the largest percentage of non-working pool members in 2020.

The table also shows the education levels of the eight Available Labor Pools.

Table 13: Available Labor Pool Occupational Sectors and Education Levels Comparison

	2001 Study*			2002 Study			2003 Study			2005 Study			2007 Study			2015 Study			2020 Study			2022 Study		
Occupational Sector	Number	Percent		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		17,951	15.6	
High Skill Labor^	8,671	9.3		7,272	6.9		9,985	9.4		8,850	8.2		10,247	9.5		10,829	7.8		10,909	9.1		10,237	8.9	
Service Sector	37,293	40.0		41,105	39.0		40,260	37.9		42,955	39.8		39,769	37.0		51,546	37.4		45,484	38.1		36,393	31.7	
Professional	28,436	30.5		33,306	31.6		30,275	28.5		18,779	17.4		23,514	21.9		20,142	14.6		18,382	15.4		26,226	22.8	
Non-Working^v^	3,356	3.6		10,856	10.3		7,861	7.4		21,586	20.0		12,506	11.6		28,840	20.9		26,525	22.2		24,032	20.9	
Total	*93,232*	*100*		*105,398*	*100*		*106,228*	*100*		*107,928*	*100*		*107,388*	*100*		*137,968*	*100*		*119,471*	*100*		*114,839*	*100*	
			Cumulative			Cumulative			Cumulative			Cumulative			Cumulative			Cumulative			Cumulative			Cumulative
Highest Education	Number	Percent	Percent	Number	Percent	Percent	Number	Percent	Percent	Number	Percent	Percent	Number	Percent	Percent	Number	Percent	Percent	Number	Percent	Percent	Number	Percent	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	4,661	3.4	3.4	4,062	3.4	3.4	9,360	8.2	8.2
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	15,248	11.1	14.4	13,022	10.9	14.3	22,491	19.6	27.7
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	40,736	29.5	44.0	31,779	26.6	40.9	38,337	33.4	61.1
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	17,312	12.5	56.5	12,186	10.2	51.1	10,753	9.4	70.5
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	24,565	17.8	74.3	26,164	21.9	73.0	13,524	11.8	82.3
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	31,333	22.7	97.0	28,195	23.6	96.6	19,862	17.3	99.6
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*	4,113	3.0	*100*	4,062	3.4	*100*	512	0.4	*100*
Total	*93,232*	*100*		*105,398*	*100*		*106,228*	*100*		*107,928*	*100*		*107,388*	*100*		*137,968*	*100*		*119,471*	*100*		*114,839*	*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.

^v^ Non-working occupational status for 2022 includes survey respondents whose occupational status was not provided.

Table 14 shows responses to the question asking if the respondent was "willing to take a job outside of your primary field of employment or experience." The table also shows responses to questions regarding various work shifts. Two work shift questions were added to the survey in 2007 (2nd shift/night shift, weekends) and a third was added in 2015 (rotating shifts). In 2022, the 2nd shift/night shift question was split into two questions (one addressing the 2nd shift and one addressing the night shift).

The table shows that the percentage of Pool members willing to take a job outside of their primary field varies from 72.3% (2022) to 84.2% (2001). The 2015 Available Labor Pool provided larger percentages of "yes" responses to all work shift questions, compared to the other pools.

Table 14: Willing to Work Outside of Field and Work Shift Comparison

	2001 Study*		2002 Study		2003 Study		2005 Study		2007 Study		2015 Study		2020 Study		2022 Study	
(Ranked by 2022 Report)	Number	Percent	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	82,582	72.3
Will Work 2nd Shift^ᵛ									52,942	49.3	70,639	51.2	45,026	37.7	39,762	34.8
Will Work Weekends^									55,412	51.6	76,572	55.5	58,601	49.1	37,014	32.4
Will Work Night Shiftᵛ															22,703	19.9
Will Work Rotating Shifts^											63,741	46.2	44,520	37.3	21,905	19.2

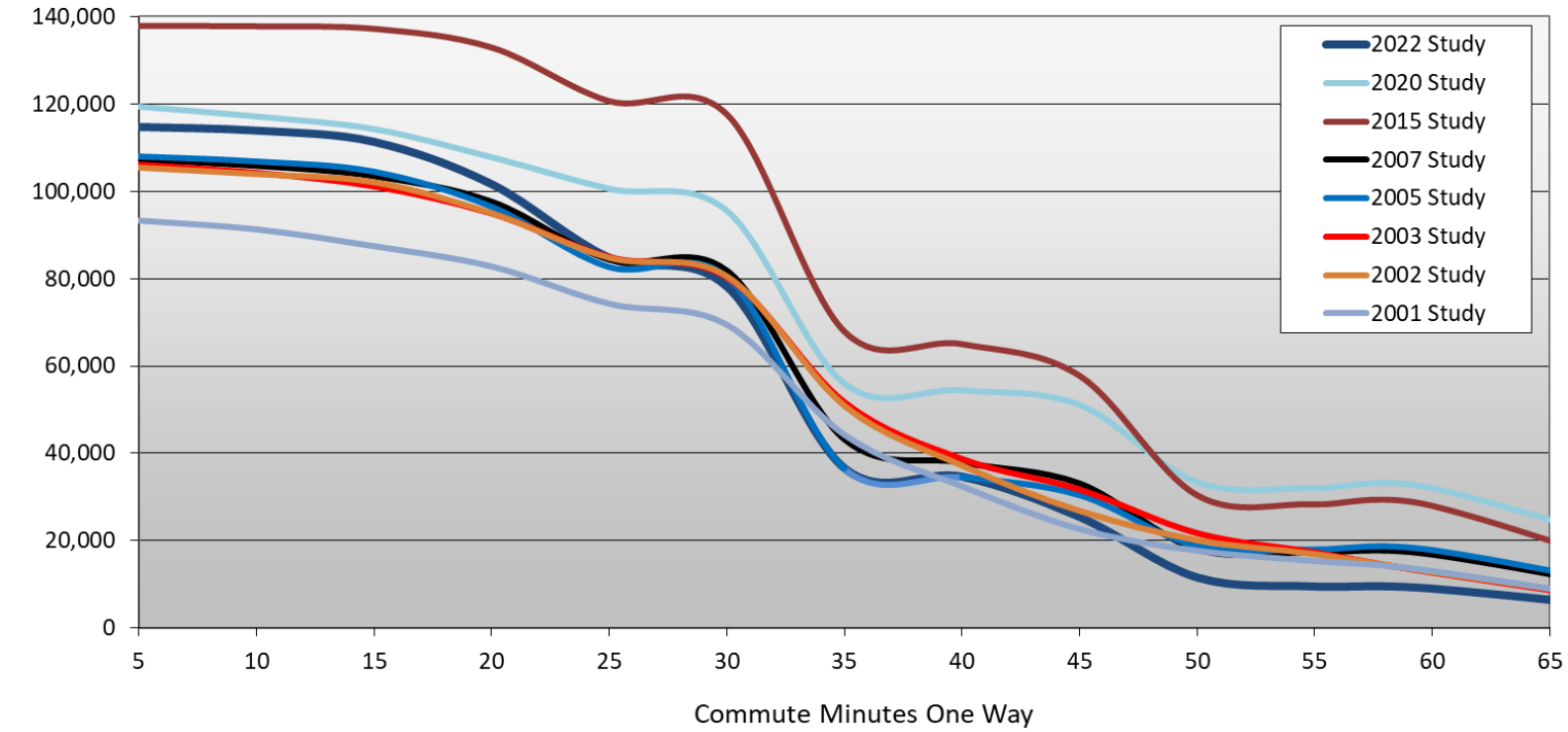
* Monroe County was not included in the 2001 Study.

^ Questions were added for the 2007 study.

ᵛ Prior to the 2022 study, "2nd Shift" and "Night Shift" were combined into a single question.

Figure 29 shows a comparison of "minutes willing to commute" for the eight studies. Notable declines in available labor occur between 30 and 35 minutes and again from 45 to 50 minutes. The year with the largest decline in available labor between 30 and 35 minutes is 2005. Two years, 2001 and 2003 share the smallest decline from 30 to 35 minutes. The year with the largest decline between 45 and 50 minutes is 2022, and the year with the smallest decline between 45 and 50 minutes is 2001.[5]

Figure 29: Available Labor by Commute Minutes Comparison



Note: Monroe County is not included in the 2001 study.

[5] Change is measured by the number of Pool members willing to commute 30 minutes minus the number willing to commute at 35 divided by the number willing to commute 35 minutes (repeated for 45 minutes and 50 minutes). Declines in Pool for each year for 30 to 35 minutes include: 2001 36%. 2002 37%, 2003 36%, 2005 55%, 2007 47%, 2015 42%, 2020 42%, and 2022 53%. Declines in Pool for each year for 45 to 50 minutes include: 2001 22%. 2002 25%, 2003 31%, 2005 39%, 2007 45%, 2015 47%, 2020 35%, and 2022 54%.

Table 15 shows the relative importance of various benefits, ranked in order of 2022 responses. 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 with the greatest amount of change between 2020 and 2022 are "flexible hours or remote work" and "good salary or annual pay."

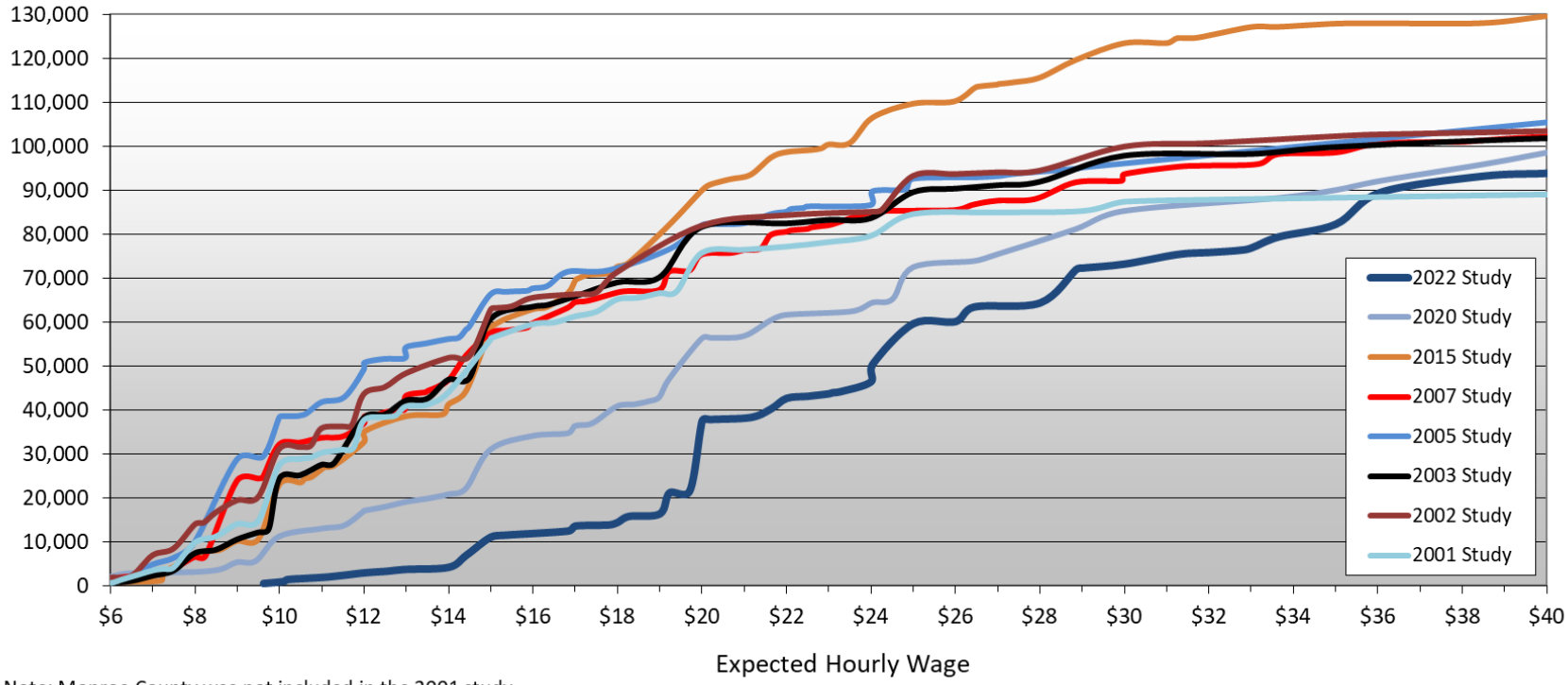
Table 15: Important Benefits to Change Employment Comparison

	Percent Responding "Yes" Shown								*Change*
(Ranked by 2022 Report)	2001 Study*	2002 Study	2003 Study	2005 Study	2007 Study	2015 Study	2020 Study	2022 Study	*2022-2020*
Good Salary/Hourly Wage	97.2	96.6	95.4	83.3	87.7	91.6	90.6	96.1	*5.5*
Good Retirement Benefits	74.2	84.0	73.5	84.4	87.0	84.4	83.7	84.4	*0.7*
Flexible Hours/Remote Work	68.4	69.5	65.1	68.2	64.7	71.7	76.4	82.4	*6.0*
Good Vacation Benefits	n/a	n/a	n/a	71.0	80.0	78.5	81.7	81.2	*-0.5*
Good Health Benefits	54.3	54.4	54.9	85.4	86.3	84.0	83.1	80.8	*-2.3*

* Monroe County was not included in the 2001 study.

Figure 30 shows a comparison of the expected wages of the eight study groups. As with commute time, the patterns are similar but there are a few differences among labor pools. The year with the largest increase in Pool size between $15 and $20 an hour is 2022. The smallest increase between $15 and $20 an hour is 2005.[6]

Figure 30: Available Labor Pool by Hourly Wage Comparison



Note: Monroe County was not included in the 2001 study.

[6] Change is measured by the number of Pool members expecting $20 an hour minus the number expecting $15 an hour, divided by the number expecting $15 an hour. Increases in Pool for each year include the following: 2022 240%, 2020 82% 2015 53%, 2007 31%, 2005 24%, 2003 26%, 2002 30%, and 2001 35%.

Table 16 shows a comparison of the underemployed members of the Available Labor Pools for the eight studies. The Available Labor Pool with the largest percentage of underemployed workers is 2005 (46.5%). The Pool with the smallest percentage of underemployed workers is 2020 (19.5%).

The percentage of underemployed workers in general labor occupations is largest in 2015 (35%) and smallest in 2002 (11%). The percentage of underemployed professional workers is smallest in 2015 (9.6%) and largest is 2020 (21.8%).

The percentage of underemployed workers with advanced degrees (masters or doctorate) is largest in 2020 (24.2%) and 2022 (24.8%), and smallest in 2001 (5%).

Table 16: Underemployed Workers Occupational Sectors and Education Levels Comparison

	2001 Study*			2002 Study			2003 Study			2005 Study			2007 Study			2015 Study			2020 Study			2022 Study		
	Number	Percent		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		90,807	79.1	
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**		**27,385**	**30.2**	
to Change Jobs	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		13,018	47.5	
Iress Status																								
Occupational Sector	Number	Percent		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		8,442	30.8	
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		3,206	11.7	
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		10,785	39.4	
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		4,951	18.1	
Total	*30,097*	*100*		*34,470*	*100.00*		*33,092*	*100.00*		*40,160*	*100*		*30,891*	*100*		*31,913*	*100*		*18,124*	*100*		*27,385*	*100*	
			Cumulative			Cumulative			Cumulative			Cumulative			Cumulative			Cumulative			Cumulative			Cumulative
Highest Education	Number	Percent	Percent	Number	Percent	Percent	Number	Percent	Percent	Number	Percent	Percent	Number	Percent	Percent	Number	Percent	Percent	Number	Percent	Percent	Number	Percent	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	981	3.1	3.1	1,572	8.7	8.7	1,125	4.1	4.1
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	2,923	9.2	12.2	2,817	15.5	24.2	5,659	20.7	24.8
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	8,908	27.9	40.1	4,023	22.2	46.4	9,290	33.9	58.7
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	4,034	12.6	52.8	3,764	20.8	67.2	3,198	11.7	70.4
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	5,058	15.9	68.6	2,279	12.6	79.8	3,849	14.1	84.4
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	9,310	29.2	97.8	2,749	15.2	94.9	4,264	15.6	*100*
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*	700	2.2	*100*	920	5.1	*100*	0	0.0	
Total	*30,097*	*100*		*34,470*	*100*		*33,092*	*100*		*40,160*	*100*		*30,891*	*100*		*31,913*	*100*		*18,124*	*100*		*27,385*	*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 includes Audrain, Boone, Callaway, Cole, Cooper, Howard, Moniteau, Monroe, and Randolph Counties in Missouri. The basin has a total population 408,904, a Civilian Labor Force of 202,261, and 195,750 residents are employed. The Docking Institute's analysis suggests that the labor basin contains an Available Labor Pool of 114,839 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.[7]" The Available Labor Pool is composed of workers of working age (18-65) 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.

[7] 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 soon, and retired individuals who may be willing and able to be gainfully employed).

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 Force[8]. Secondly, the number of potential workers is then *restricted* to those working-age 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 working-age workers and potential workers for employers to draw upon in the Columbia/Boone County Labor Basin.

Description of Survey Research Methods

From 2001 to the 2020, data were collected from a random digit telephone survey of area adults, using the Docking Institute's Computer Assisted Telephone Interviewing (CATI) system. Data were collected in 2022 using address-based sampling (ABS) and paper booklet questionnaires. The Institute purchased an address-based sample of households from an expert sampling vendor. Questionnaire instructions asked that an adult (18 or older) in the household participate in the survey. The self-administered questionnaire booklet was designed to be taped shut and dropped in the mail upon completing the questions, as the back cover is printed with business-reply postage and pre-addressed for return to the Docking Institute.

The initial booklet was sent to 3,644 area residents in April 2022. A second wave, for non-responding households, was sent to 2,454 households on May 9, 2022. The combined mailing yielded a response rate of 2.3%, and too few booklets to meet study objectives. A second booklet was produced, and additional ABS samples were purchased (totaling 19,084 households). On August 10, 2022, a post card announcing a forthcoming booklet was sent to half of the households (9,542). The second booklet was sent to 19,084 households by September 9, 2022. A second post card, asking households to complete/return the booklet questionnaire and providing instructions for an online survey option, was mailed to 18,705 households on September 23, 2022.

In total, 25,182 booklets were mailed to area households. By October 26, 2022, 1,577 booklets were returned to the Institute as completed (792), undeliverable (769), and unusable/refusals (16). Excluding the undeliverable booklets and including 25 surveys completed online (for 817 completions total), the response rate is 3.35%. The sample margin of error for 817 completions is +/- 3.43%, assuming no response bias. Thus,

[8] 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 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.

we estimate there is a 95% chance that results in the sample of 817 are within +/-3.43% of what we would find in the full population if we could survey everyone.

From Labor Basin to Available Labor Pool

A total of 636 residents of Audrain, Boone, Callaway, Cole, Cooper, Howard, Moniteau, Monroe, and Randolph counties are included in the Columbia/Boone County Labor Basin. As the Available Labor Pool consists of working-age residents interested in a new or different job, survey respondents 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 520. Of these 520 respondents, 50% (or 264) indicated that they were looking for another job or interested in a new or different given the right opportunities. 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 +/- 6.04%.

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

[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.

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 difference 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.

Expected Wage – The hourly wage that a respondent would expect to earn at a new or different job given the right opportunities. If a respondent offers a yearly salary instead of an hourly wage, an hourly 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.

Within the Necessary Commute Time – "Necessary Commute Time" is the number of minutes that a respondent indicates he or she is willing to travel that is equal to or greater than the estimated time necessary for the respondent to commute from his or her Zip Code of residence to the Zip Code at the center of the labor basin. For example, a respondent who is willing to travel for 30 minutes, one-way, for a new or different job and that lives an estimated 15 minutes from the center of the labor basin is considered "within the necessary commute time" for a new job.

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.

Potential Entrepreneurs – Potential entrepreneurs are non-business owning members of the Available Labor Pool that have "seriously considered starting their own businesses in the past few years."

Job Sectors – "Job sectors" include (with examples shown):

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

High Skill Labor includes occupations such as police, firefighting, postal worker, welder, high-skilled mechanics, welder, computer technician and lab technician.

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

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

Appendix: Hourly Wage to Annual Salary Conversion Chart

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

Hourly Wage	Annual Salary
$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
$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

Hourly Wage	Annual Salary
$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
$50.50	$105,040
$51.00	$106,080
$51.50	$107,120
$52.00	$108,160
$52.50	$109,200
$53.00	$110,240
$53.50	$111,280
$54.00	$112,320
$54.50	$113,360
$55.00	$114,400
$55.50	$115,440
$60.00	$124,800