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Omaha Area Skills Gap Report
Final Report

Prepared for the Nebraska Department of Labor

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Executive Summary

The Nebraska Departments of Labor and Economic Development led efforts to conduct two surveys during 2017 regarding the skills of workers and skill needs of employers in the Omaha Metropolitan Area, which includes five Nebraska and three Iowa counties. The two surveys are the *Omaha Area Labor Availability Survey* and the Omaha Area *Survey of Hiring and Training Needs*.

The current study utilizes the results of both surveys as well as secondary data about the Omaha area to summarize information about job skills and whether a local skills gap is present. A skills gap is present if it is difficult for a large share of employers to hire in a particular occupation and there is also a persistent gap between the demand for new workers and the number of individuals entering that occupation. Key questions include: In what part of the labor force, if any, is a skills gap present? And, is the skills gap the result of a lack of education and training opportunities, or are other factors at work?

Results of the study suggest that over the next decade the annual flow of individuals into the workforce in the Omaha area will be several thousand less than the projected annual job openings due to net job growth and worker replacement. These annual deficits are found throughout the workforce but especially among blue collar and service occupations. There are also significant deficits in select white collar occupations including computer and mathematical workers, architects and engineers, community and social service workers and teachers. Notably, annual deficits are not found for healthcare practitioners and only small annual deficits for found for business and financial and legal workers. There is an annual deficit for all blue collar occupations, but the deficit is especially pronounced for transportation and material moving workers. There is an annual deficit for most service occupations and large annual deficits are found for office and administrative support workers, sales workers and food preparation and serving related workers. Among service and blue collar occupations, these annual deficits are further magnified because a significant share workers are difficult to hire due to a "poor work history" (which typically means frequent job changes) or an inability to pass a background check.

For the more highly skilled occupations with a deficit of workers, potential employees can be prepared through enhanced training, education, internship and apprenticeship opportunities developed through collaboration between employers, training entities and other education institutions. These enhanced learning opportunities should be combined with additional efforts to inform secondary school students, and their parents, about the earnings and other opportunities afforded by these occupations. State government and local organizations also may choose to support education, training and apprenticeships, perhaps by sharing the cost of these activities with employers. A smoother system of work authorization for skilled non-citizens would be especially beneficial for hiring in information technology and construction occupations. A list of specific occupations is below, along with the standard occupation code. The last chapter of this report provides detailed analysis for these occupations.

Computer Programmers (SOC CODE 15-1131)
Software Developers (SOC CODE 15-1132)
Registered Nurses (SOC CODE 29-1141)
Carpenters (SOC CODE 47-2031)
Maintenance and Repair Workers, General (SOC CODE 49-9071)
Machinists (SOC CODE 51-4041)
Welders, Cutters, Solderers and Brazers (SOC CODE 51-4121)
Heavy and Tractor-Trailer Truck Drivers (SOC CODE 53-3032)

Results of the research also support another potential initiative. In particular, many employers indicate that a poor work history or elements of worker's personal history are a factor in hiring. There appears to be a large group of applicants who have some or all of the relevant occupation-specific skills, but who are still not appealing to employers due to a poor work history or an inability to pass a background check. This raises two key questions: is there a subset of workers in these occupations with potential to change, that is, to become more committed to and a better team member at work? And, how would workers who are able to change be identified? To answer these questions, there should be extensive discussion with human resources representatives and direct supervisors of workers regarding practical steps workers can take, if any, over time to change a poor work history into a good work history.

Finally, analysis did not find that the level of wages in the Omaha area is a significant challenge for hiring among the existing workforce. Specifically, in many occupation groups, the wage requirements of individuals seeking work: 1) represent only a moderate increase over their current wage and 2) are within the prevailing wages found in the Omaha area labor market. Evidence of a wage-based skills-gap is found in just two occupation groups, health care support and protective services workers. Wage levels in the Omaha area, however, may be an issue for attracting workers from outside the region.

Many employers also are concerned that about the potential loss of skill and experience due to the retirement of workers over the next 5 years, including 15 percent who are very concerned. About half of employers are taking steps to address potential skills gaps due to upcoming retirements. Notably, 15.6 percent of employers are hiring workers with the lost skills. However, a more common approach is to utilize existing workers. Nearly forty-four percent of employers are providing training or on-the-job mentoring to current workers and 10.9 percent are retaining retiring workers on a part-time basis.

The report also finds evidence that the magnitude of the skills gap is rising modestly in the Omaha area, as seen in Table ES.1. Table ES.1 compares key results from the current report, which is based on a survey of employers and households during 2017, with results from the last Omaha area skills gap report, which was based on surveys taken during 2015.[1]

Table ES.1: Comparison of Current and Previous Omaha Area Skills Gap Report

Measures	Previous Report (2015 Data)	Current Report (2017 Data)
Share of Employers Reporting It Is Difficult to Hire	63.9%	66.9%
Reasons for Difficulty in Hiring		
Applicants Lack of Occupation-Specific Skills	40.8%	42.9%
Applicant Wage Demands Which Are Too High	30.4%	35.3%
Applicants with Poor Work History	37.5%	39.0%
Applicants which Fail a Background Check	20.5%	21.7%
Share of Workers Citing Obstacle to Finding a New Job		
A Lack of Local Job Opportunities	60.4%	62.8%
Inadequate Pay Offered by Local Employers	63.3%	67.5%
A Lack of Training	30.2%	31.9%
A Lack of Education	28.3%	24.4%

[1] Bureau of Business Research, 2016. *Omaha Area Skills Gap Report*. Report for the Nebraska Department of Labor (June).

There was a modest increase in the challenges perceived by employers and workers. For example, the share of employers reporting that it is difficult to hire rose from 63.9 percent to 66.9 percent. The increase is matched by growing concerns about the occupation-specific skills of applicants (40.8% to 42.9%). Workers also have grown more concerned about their own level of training, but have become less concerned about their own level of education.

Employer concerns about workforce quality also have grown modestly. The share of employers reporting that it is difficult to hire because applicants have a poor work history or would fail a background check rose by 1.5 and 1.2 percent, respectively, between the two surveys. Reported concerns about job opportunities and wage levels also rose. The share of workers citing a lack of local job opportunities or inadequate pay as an obstacle to finding new employment rose by 2.4 percent and 4.2 percent, respectively. Employer responses also showed a 4.9 percent rise in hiring difficulty due to applicants with wage demands which were “too high.” Taken together, these results indicate that the challenges in the Omaha labor market have increased modestly as the local economic recovery has continued.

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1. Introduction

The Nebraska Departments of Labor and Economic Development led efforts during 2017 to survey both households and businesses in the Omaha area. Surveys were designed to examine the skills and work preferences of regional residents and the skill needs and training practices of local employers. These surveys were the *Omaha Area Labor Availability Survey* and the *Omaha Area Survey of Hiring and Training Needs*. Results of the surveys can be used to assess the demand for and supply of labor in the Omaha area, which is composed of all or part of Cass, Douglas, Sarpy, Saunders and Washington counties in Nebraska and Harrison, Mills and Pottawattamie counties in Iowa.

Survey results yield detailed information about the skills of the local workforce and the hiring and training activities of area businesses. These results provide significant insight into whether there are skills gaps present in individual occupations within the Omaha area labor market. Such skills gaps are present if a high share of employers find that it is difficult to hire workers for an occupation and there is a persistent gap between the demand for workers and the number of workers entering the occupation.

Survey results also indicate that skills gaps have potential to limit growth of the Omaha area economy. In particular, a large percent of respondents to the *Omaha Area Survey of Hiring and Training Needs* indicate that labor availability would be an issue if they were asked to consider a local expansion.

Measuring the skills gap is challenging. After all, both businesses and workers are likely to cite difficulties in the labor market with some frequency. For employers, finding and maintaining a productive work force is one of the key challenges of running a business. Likewise, finding and keeping meaningful employment is one of the key career challenges faced by workers. Sure enough, results from the *Omaha Area Labor Availability Survey* indicate that 62.8 percent of Omaha area job seekers find that a lack of local job opportunities is an obstacle to finding new employment. At the same time, 66.9 percent of Omaha area employers responding to the *Omaha Area Survey of Hiring and Training Needs* Indicate that it is difficult to hire workers.

Do these survey responses mean that a broad-based skills gap is present in the Omaha area economy? Not necessarily. After all, as noted above, we would anticipate a certain level of concern by businesses and people given the rigor of the labor market. A more interesting question is: for which occupations is it most difficult to find a worker, or to find a job? Further, to identify a skills gap in a particular occupation, we also must identify factors which are causing a lingering shortfall in the number of qualified and employable workers available to employers.

There a many potential reasons why a skills gap could develop within an occupation.

Structural change – Structural change refers to changes in technology, customer demand, or international competition which expand the demand for workers in select occupations (and reduce the demand in others). Time may be required for workers to prepare for these emerging occupations, either through retraining for existing workers or by providing appropriate degree and certificate programs for college, community college and high school students.

Education and Training Programs – Appropriate degree and certificate programs are needed to help workers build the skills required in the economy. Local education institutions, many of which are part of the public sector, may struggle to identify needed programs or change program offerings to meet the

needs of students and employers. Degree and certificate programs also must be sufficiently rigorous to prepare students to meet employer needs.

Appeal of Occupations – Even when adequate degree and training programs are available, occupations may fail to attract workers at prevailing wages. The combination of wages, benefits and working conditions at a particular occupation may fail to attract workers relative to other work options available within the economy. Such conditions can arise or grow worse as the economy evolves and can also occur because potential workers have inadequate information about the benefits of a particular occupation, or are steered away from an occupation by family members, mentors, or public perception. At the same time, competitive conditions may prevent local employers from raising pay and benefits in order to enhance the appeal of a particular occupation.

Taxes on Middle Class Workers – At prevailing wages, taxes may discourage workers from making investments in their skills through education and training programs. Such monetary investments may not be appealing if too large a share of incremental earnings go to federal, state and local government (either directly through income taxes or indirectly through sales and property taxes). In other words, if the tax burden is too high, workers may not choose to enter skilled occupations where work opportunities are abundant, even when local education and training opportunities are adequate.

Career Destruction – A portion of workers at all skill levels may engage in behavior which reduces their employment potential. These workers may have adequate skill and experience for an occupation, but still not appeal to employers. For example, worker may have a criminal record, or fail to pass a drug test or may have a poor work history, as evidenced by frequent job changes or other indicators of an inability to fit into the workplace. In these cases, a skill gap can arise because worker skills cannot or will not be utilized by employers, rather than a lack of skill.

Social Safety Net – Public benefits such as Medicaid, TANF or Social Security Disability Income may create a significant disincentive for some workers, particularly lower skills workers, to fully participate in the workforce. This may make it very challenging for employers in some occupations to find an adequate workforce.

Net Outmigration – While workers are constantly moving in and out of cities, some cities develop a pattern of sustained net outmigration of workers (the difference between in-migrants and out-migrants) in a wide variety of occupations. Net outmigration may be especially severe in those skilled occupations which are typically filled by younger workers (for example, computer and mathematical occupations), given that younger, educated workers are also the most mobile.

These phenomena can limit the local supply of workers in selected skill groups, leaving employers to note a lack of adequately trained workers, or workers who have a poor work history or wage demands which are too high. This report will utilize data from a variety of sources to identify where a skills gap may be present, including data from the *Omaha Area Labor Availability Survey*, the *Omaha Area Survey of Hiring and Training Needs*, and data on projected job openings, the flow of graduates and prevailing wages. We began by comparing the annual job openings generated in each occupation, due to net job growth or the replacement of workers, with the potential annual supply of new workers in each occupation due to local graduates and net migration.

We also consider the share of existing employed workers who are open to or pursuing a change in jobs, and compare their wage requirements with prevailing market wages. Such “churn” in the labor market is important to provide employers with the best match of experienced, skilled workers.

2. Supply and Demand for Workers in the Omaha Area by Occupation

The most basic measure of the balance between supply and demand in an occupation is whether there is a gap of between the number of workers being prepared for the occupation each year and the annual need for new workers to enter the occupation. Over time, the annual flow into and out of the occupation will influence how scarce, and difficult to find, workers become. This chapter compares the number of individuals joining each occupation group each year, after leaving school (either as a graduate or a non-graduate) or through net in-migration, with the number of openings in an occupation each year due to job growth or the replacement of workers. This chapter further examines the potential for individuals who are not working to reenter the labor force. This provides an additional source of potential new workers for Omaha area employers.

Lastly, the level of "churn" among the existing workers is examined within each occupation. Churn is the rate at which workers in an occupation move between jobs. It is critical since jobs within a single occupation can differ in terms of requirements for skill and experience. An abundance of new graduates can help fill entry level positions but existing, more experienced workers (i.e. former entry level workers) are needed to fill some openings. Churn is a process which improves the skill match for workers and employers in an occupation. As a measure of potential churn, this chapter estimates the percent and number of experienced workers within each occupation who are searching for new work.

A. Supply versus Demand for Workers by Occupation

The first step is to compare the annual openings and new entrants to each major occupation group within the Omaha area. Openings in an occupation is a function of net job growth and the replacement of workers.

New entrants to an occupation include local individuals who leave school and net migrants to the Omaha area. Individuals who leave school include both graduates and non-graduates. Graduates are high school graduates (and GED completers), community college graduates or college graduates each year. Non-graduates include individuals who drop out of high school, community college, or college. College and community college graduates are assigned to occupations based on their major field of study. High school graduates and non-graduates are assigned to occupations which do not require a college degree based on the number of annual openings. Analysis also adjusts for the share of graduates and non-graduates who are likely to be active participants in the labor force in any given year. This provides the best estimate of how many "workers" are being added in the area economy each year.

Net openings in the Omaha area labor market are based on projections developed by the Office of Labor Market Information (LMI) of the Nebraska Department of Labor and Iowa Workforce Development. Specifically, the Nebraska LMI generates projections of the demand for additional workers in an occupation based on net job growth and worker replacement, as part of its *Nebraska 2014-2024 Long-Term Occupational Projections*. Projections are made for the State of Nebraska, metropolitan areas and economic development districts. The Omaha area includes the 5 Nebraska counties which are part of the Omaha Metropolitan Area. Iowa Workforce Development makes similar projections for a six county region which includes the three Iowa counties in the Omaha Metropolitan Area. Based on current employment shares, 76% of the openings are assumed to be in the Omaha MSA. Projections are cumulative for 10 years. Annual openings due to net job growth and worker replacement are estimated by taking one-tenth of the 10-year projection. The estimates of annual job openings by occupation

group is shown in Table 2.1 below. Estimates of openings are adjusted for 4 occupation groups: food preparation and serving related, sales and related, farming, fishing and forestry and life, physical and social science. These occupations have high rates of openings based on worker replacement, suggesting that annual openings to a significant degree reflect individuals who are switching occupation groups, rather than retiring and leaving the labor market. For these four occupation groups, the number and rate of annual openings due to worker replacement is adjusted down to the all-occupation average.[2]

Table 2.1 also contains estimates of the number of local individuals finishing college in a given year with a potential match to each occupation. The degrees of college graduates are estimated based on fields of study at a set of regional universities and colleges, in particular the University of Nebraska at Omaha, University of Nebraska Medical Center, Creighton University, Clarkson College, College of Saint Mary, Grace University, Purdue University Global, Bellevue University[3], Nebraska Methodist College and CHI College of Radiology. Data on degrees was obtained from the IPEDS data base (the *College Navigator* web portal) maintained by the U.S. Department of Education. There were approximately 5,320 regional college graduates in 2016-17.[4] Most of these college graduates are expected to participate in the labor force in any given year, at least while they are in the prime working age of 25 to 64. Data from the National Center for Education Statistics found that in 2014 87.0 percent of 25 to 64 year olds who completed a Bachelor's degree were in the formal labor market. This participation rate for college graduates was combined with the 5,320 regional graduates to estimate that 4,630 graduates would be available to enter the labor force each year.

The number of high school graduates in Omaha area is estimated based on the number of 2016-2017 high school graduates in Nebraska (23,970), and the ratio of Omaha area 15- to 17-year olds to Nebraska 15- to 17-year olds (48.6%). Data on the share of 15- to 17- year olds comes from the U.S. Bureau of Census. The 15- to 17- age range is used since such estimates are regularly generated by the U.S. Bureau of Census for counties and since some 18 year-olds are already attending college. The annual number of high school graduates in Nebraska is based on 23,395 graduates reported in the *2018 Nebraska Higher Education Progress Report* from the Nebraska's Coordinating Commission on Postsecondary Education and national data form the U.S. Department of Education's *Digest of Education Statistics* indicating that 2.5% of high school-age students attend home school.[5] Multiplying the annual number of Nebraska high school graduates by the share of Nebraska 15- to 17-year olds in the Omaha area yields an estimated of 11,660 annual high school graduates (including a GED for home school students).

How many of those 11,660 high school graduates decide to attend college or community college? According to the *2018 Nebraska Higher Education Progress Report* 64.7% of the students attended a degree-granting institution (either in-state or out-of-state) within one-year of completing high school.

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[2] The all occupation average for worker replacement rates is approximately 2.2%, which implies an average 45 year career in the chosen occupational group before existing for retirement.

[3] An estimate of Omaha area graduates was utilized.

[4] The current study found several thousand fewer annual graduates from colleges and universities than the last skills gap study for the Omaha area, which was released in June 2016. This last study counted most advanced degree graduates as well as Bachelor's degree graduates. This approach led to the double-counting of new workforce entrants since many graduate students in the Omaha area were drawn from ranks of local college degree holders. The revised methodology used in the current study avoids such double-counting.

[5] National Center for Education Statistics (not dated). *Digest of Education Statistics*, Table 206.10: Number and percentage of homeschooled students ages 5 through 17 with a grade equivalent of kindergarten through 12th grade, by selected child, parent, and household characteristics: 2003, 2007, and 2012. Available at: https://nces.ed.gov/fastfacts/display.asp?id=91. Accessed January 21, 2017.

That percentage includes individuals who attend a college or a community college. Therefore, the annual flow of individuals who attend a post-secondary institution is approximately 64.7 percent of 11,660, or 7,540. Those 7,540 individuals include persons who are attending 2-year and 4-year colleges. Data provided in the *2016 Nebraska Higher Education Progress Report* suggests that 28.6% of high school graduates attend 2-year public colleges (community colleges) with the remaining 71.4% attend public 4-year colleges or private colleges. Applying this 71.4% rate to the 7,540 graduates attending college yields an estimate that 5,390 Omaha area high school graduates attend college. The *Nebraska Higher Education Progress Report* indicates that overall graduation rate for individuals who begin at a post-secondary institution in Nebraska is 51.3 percent. This implies 2,760 potential 4-year college graduates each year who attended high school in the Omaha area. This is less than the 4,630 graduates from Omaha area colleges, indicating that the area is a net importer of college students.

Table 2.1: Annual Openings and School Leavers by Occupation Group

		Annual School Leavers		
Occupation	Annual Net Openings NDOL	College and Community College Graduates	Others	Total
Management	978	276	0	276
Business and Financial Operations	1,038	838	0	838
Computer and Mathematical	595	267	0	267
Architecture and Engineering	246	137	0	137
Life, Physical and Social Sciences	139	947	0	947
Community and Social Service	295	100	0	100
Legal	112	97	0	97
Education, Training and Library	901	224	0	224
Arts, Design, Entertainment, Sports, and Media	294	288	0	288
Healthcare Practitioners and Technical Workers	1,331	1,698	0	1,698
Healthcare Support	498	0	280	280
Protective Services	275	283	154	438
Food Preparation and Serving Related	1,554	31	872	903
Building and Grounds Cleaning and Maintenance	468	0	262	262
Personal Care and Services	805	4	452	456
Sales and Related	1,702	0	955	955
Office and Administrative Support	2,296	175	1,288	1,463
Farming, Fishing, and Forestry	73	12	41	53
Construction and Extraction	724	65	406	471
Installation, Maintenance and Repair	649	83	364	447
Production	857	14	481	495
Transportation and Material Movers	1,540	2	864	866

Sources: Nebraska Depart of Labor and Iowa Workforce Development for job openings, IPEDS, U.S. Department of Education for graduates, and BBR calculations

Notes: 1) Others includes high school dropouts, high school graduates (GED completers) or college or community college non-completers. 2) college or community college graduates and others may not sum to total leavers due to rounding

Metropolitan Community College and Iowa Western Community College serve the Omaha area. There were 2,150 graduates of these two community colleges in the 2016-17 academic year. Graduates are assigned to a particular occupation based on the match between their degree program and the occupation. The number of graduates by degree program for the two community colleges also was obtained from the IPEDS data base (the *College Navigator* web portal) maintained by the U.S. Department of Education. The 980 graduates in the general fields of study of life, physical and social sciences are assumed to ultimately continue onto college. The remaining fields of study contributed 1,170 associate's degree graduates.

Most of these community college graduates are expected to participate in the labor force in any given year while they are in the prime working age of 25 to 64. In particular, data from the National Center for Education Statistics found that in 2014 77.6 percent of 25 to 64 year olds who completed an Associate's Degree were in the formal labor market. [6] This compares to 87.0 percent of 25 to 64 year olds who completed a Bachelor's degree. This participation rate for community college graduates was combined with the 1,170 graduates to estimate that 910 community college graduates would be available to join the labor force in the Omaha area during a given year.

The next task is to estimate the annual number of school leavers in three categories: individuals leaving college before graduating, those finishing high school but not pursing a two- or four-year college degree and those who drop out of high school. Methods for making each estimate are described below.

High School Graduates Not Continuing to College or Community College. Calculations above estimated that there are 11,660 annual high school graduates (including a GED for home school students) in the Omaha area. How many of those individuals decided not to attend college or community college? The *2018 Nebraska Higher Education Progress Report* indicated that 64.7 percent of those students attended a degree-granting college or community college (either in-state or out-of-state) within one-year of completing high school. Therefore, the annual flow of individuals who potentially enter the job market as high school graduates is approximately 35.3 percent of 11,660, or 4,120. A portion of these individuals will participate in the labor force in a given year. The National Center for Education Statistics found that 72.0% of 25 to 64 year olds those who completed high school but did not participate in post-secondary education were in the labor market in 2014. This percentage is applied to 4,120 to yield 2,960 additional labor force participants in the Omaha area with a high school degree only.

High School Dropouts. The *2018 Nebraska Higher Education Progress Report* indicates that Nebraska has a six-year high school graduation rate of 92 percent. This graduation rate implies that there is one non-completer for each 11.5 high school graduates. This ratio yields an estimate of approximately 1,010 high school dropouts in the Omaha area in any particular year (although some of these individuals will ultimately obtain a GED). The National Center for Education Statistics report found that 59.9 percent of those who did not complete high school were participating in the labor market in 2014. Applying this rate to the population of 1,010 implies that high school non-completers contribute 610 additional labor force participants each year.

College and Community College Non-Completers. As noted earlier, the 2018 *Nebraska Higher Education Progress Report* indicates that overall graduation rate for individuals who begin at a post-

[6] Institute for Education Sciences, 2015. "Employment Rates and Unemployment Rates by Educational Attainment," National Center for Education Statistics, U.S. Department of Education (May). Accessed at nces.ed.gov/programs/coe/indicator_cbc.asp

secondary institution in Nebraska is 51.3 percent implying that 48.7 percent are non-completers. Applying this non-completion rate to the 64.7 percent of 11,660 high school graduates who attend college yields an estimate that 3,670 individuals will potentially enter the local labor market each year without a completing a post-secondary degree. The National Center for Education Statistics report indicates that 77.6 percent of these will enter the labor force, implying 2,850 additional labor force participants each year.[7]

Altogether, approximately 6,420 high school only completers, high school non-completers, and college non-completers enter the Omaha area labor market each year. These individuals are distributed among the occupations which do not *require* a college or community college degree (although workers may have a degree) including: healthcare support; protective services; food preparation and serving-related; building and grounds; personal care and services; sales, office and administrative support; farming, fishing and forestry; construction and extraction; installation, maintenance and repair; production; and transportation and material moving occupations. The 6,420 individuals are allocated to these occupations based on the share of annual openings.

Results in Table 2.1 show that there is a deficit of school leavers in the Omaha area relative to annual openings in select white collar, all blue collar and most service occupations. Across all occupations there are an estimated 5,410 fewer school leavers than projected openings in the Omaha area each year. Among white collar workers, there is an annual deficit for architecture and engineering, business and financial, computer and mathematical, community and social service and education, training and library occupations. There is a deficit for all blue collar occupations. The annual deficit of entrants to openings is especially pronounced, at more than 670 workers per year, for transportation and material moving workers. There is an annual deficit for all service occupations except protective service workers. Large annual deficits are found for office and administrative support workers, sales workers and food preparation and serving related workers.

Table 2.1, however, does not reflect the flow of workers into and out of the Omaha area each year. In particular, the Omaha area gains 1,450 *workers* each year due to net immigration from other regions. Estimates of entrants and openings after net migration are provided in Table 2.2. Estimates for migration are based on U.S. Bureau of Census data for total population. Estimates of total population are converted to estimates of migration by workers utilizing employment to population ratios. After factoring in net outmigration, across all occupations there are an estimated 3,960 fewer entrants into the Omaha area labor market than projected openings each year.

[7] This estimate assumes that individuals who fail to complete a college or community college degree at Northeast Nebraska post-secondary institution will return to the community where they completed high school. Similarly, Northeast Nebraska high school graduates who attended but did not complete post-secondary education in another city would return to the area.

Table 2.2: Annual Openings and Entrants by Occupation Group, Including Migrants

		Annual Entrants		
Occupation	Annual Net Openings NDOL	Total Finishers	Net Migration	Total
Management	978	276	100	376
Business and Financial Operations	1,038	838	106	944
Computer and Mathematical	595	267	61	327
Architecture and Engineering	246	137	25	162
Life, Physical and Social Sciences	139	947	14	962
Community and Social Service	295	100	30	130
Legal	112	97	11	108
Education, Training and Library	901	224	92	316
Arts, Design, Entertainment, Sports, and Media	294	288	30	318
Healthcare Practitioners and Technical Workers	1,331	1,698	74	1,771
Healthcare Support	498	280	28	307
Protective Services	275	438	15	453
Food Preparation and Serving Related	1,554	903	86	989
Building and Grounds Cleaning and Maintenance	468	262	26	288
Personal Care and Services	805	456	45	500
Sales and Related	1,702	955	170	1,125
Office and Administrative Support	2,296	1,463	230	1,693
Farming, Fishing, and Forestry	73	53	13	66
Construction and Extraction	724	471	128	599
Installation, Maintenance and Repair	649	447	115	562
Production	857	495	19	513
Transportation and Material Movers	1,540	866	34	899

Sources: Nebraska Depart of Labor and Iowa Workforce Development for job openings, IPEDS, U.S. Department of Education for graduates, and BBR calculations
Notes: 1) Others includes high school dropouts, high school graduates (GED completers) or college or community college non-completers. 2) college or community college graduates and others may not sum to total leavers due to rounding

Net outmigration also influences the balance between openings and labor market entrants in specific occupation groups. In Table 2.2., estimates of net out-migration by workers are allocated to 5 civilian major occupation categories and for military personnel: 1) management, business, science, arts, 2) service occupations, 3) sales and office occupations, 4) natural resources, construction, and maintenance, 5) production, transportation and material moving and 6) military specific occupations. The Bureau of Census also has data on the frequency of migration within these occupation categories. After making this adjustment, the underlying pattern continues. However, an annual surplus develops for arts, design, entertainment, and media occupations, the deficit in legal occupations is nearly eliminated and the deficit in business and financial occupations shrinks substantially. Annual deficits remain significant for blue collar and service occupations.

Further, there is an additional reason to be concerned about the available supply of new workers. In particular, an assumption throughout the analysis has been that workers entering the labor market would remain viable to work over their lifetime. Yet, in some cases, workers with appropriate training will diminish their ability to utilize those skills by developing a poor work history or personal issues which discourage employers from hiring them. Table 2.3 show the potential size of this problem. The table lists the percentage of respondents to the *Omaha Area Survey of Hiring and Training Needs* who indicated it was difficult to hire workers in part due to: 1) poor work history and 2) failure to pass a background check. These percentages are significant, especially given the existing gap between openings and annual entrants.

Table 2.3: Total Annual Openings and Entrants and Problems with Work History

	Balance And Problems
Annual Net Openings	17,369
Annual Entrants	13,410
Share of Applicants with	
Poor Work History	39.0%
Failed Background Check	21.7%

Sources: IPEDS, U.S. Department of Education for graduates and *Omaha Area Survey of Hiring and Training Needs* and BBR calculations

Potential Supply from Area Residents Who Are Not Currently Employed

While Tables 2.1 through 2.3 address the long-term balance between annual openings and entrants in each occupation, it should be noted that there is another potential source to bring new workers into the Omaha area labor market over the next few years. That sources is area residents who are not currently employed. These individuals can be drawn back into the work force both by providing job opportunities to unemployed workers and drawing back individuals who are currently out of the labor force, such as retirees or homemakers.

Table 2.4 provides information on the Omaha Area population who are not currently employed but are actively seeking work. Data in the table are assembled using responses of individuals to the *Omaha Area Labor Availability Survey*. That survey included a significant number of responses from individuals who indicated that they were unemployed, retired, or were currently homemakers. Respondents provided information both about their previous occupation when they worked in the past and whether they are actively seeking a job at the moment. Fourteen percent indicated that they would "re-enter the workforce next year if a suitable job is available." This percentage is much higher than might be expected given the 3% unemployment rate that prevails in the Omaha area. However, the difference makes sense given that the criteria for being classified as unemployed is not as strict in the *Omaha Area Labor Availability Survey*. In particular, persons do not need to demonstrate that they have been actively searching beyond a minimum level in recent weeks.

This broader 14.0 percent of individuals who are open to rejoining the workforce implies a chance to add a significant number of new workers to the labor force. In particular, there are approximately 225,580 adults age 16 and above in the Omaha area classified as out of the labor force or unemployed. The 14.0 percent figure indicates that there are potentially up to 31,490 additional workers for the Omaha area economy. Table 2.4 shows the occupations for which these potential workers might be

available, based on the previous occupation. Table 2.4 also shows that, among those surveyed individuals who did not have previous work experience, there are 1,450 actively search for a new job.

Table 2.4: Number of Jobless Individuals Actively Searching for a Job by Previous Occupation

Occupation	Omaha Area
Management	3,621
Business and Financial Operations	1,354
Computer and Mathematical	1,406
Architecture and Engineering	261
Life, Physical and Social Sciences	0
Community and Social Service	0
Legal	737
Education, Training and Library	2,404
Arts, Design, Entertainment, Sports, and Media	333
Healthcare Practitioners and Technical Workers	3,057
Healthcare Support	1,073
Protective Services	0
Food Preparation and Serving Related	1,633
Building and Grounds Cleaning and Maintenance	577
Personal Care and Services	0
Sales and Related	3,510
Office and Administrative Support	3,534
Farming, Fishing, and Forestry	0
Construction and Extraction	2,179
Installation, Maintenance and Repair	0
Production	2,853
Transportation and Material Movers	1,502
Never Worked	1,453

Source: Omaha Are*a Labor Availability Survey*

As seen in Table 2.4, a significant share of these workers are in production occupations and in construction and extraction occupations, but not in the installation, maintenance and repair occupation. Among white collar occupations, there are approximately 3,620 individuals with management experience, 1,350 former business and financial operations workers, 1,410 computer and mathematical workers, 2,400 teachers and 3,060 healthcare practitioners and technicians. Among service occupations, the largest number of potential reentrants are former office and administrative support workers (3,540) and sales and related workers (3,510). Results therefore show the potential over the next few years to plug some of the annual gap between openings and entrants through drawing the unemployed, retired workers and homemakers back into the workforce.

B. Job Search among the Currently Employed

Beyond the overall balance of openings and entrants in an occupation, employers have a need for hiring experienced workers. Such positions are often filled by workers who are currently employed. While this can be frustrating for employers who lose workers, this “churn” of workers can be beneficial. In

particular, job search by the employed helps experienced workers find the best match between their job and their skills and experience. Finally, workers who are hired away, in turn, leave open positions which create an opportunity, and potentially a better job match, for another worker.

The *Omaha Area Labor Availability Survey* asked employed workers whether they were actively searching for work, along with questions about their experience and occupation. Survey results indicate that 13.9 percent of currently employed workers are actively searching for a job. This implies that approximately 64,220 employed workers are actively searching at any moment in time. Survey results also can be used to generate statistics about the share and number of employed workers in each occupation who are actively searching for a job. These shares and numbers are presented in Table 2.5.

Table 2.5: Percent and Number of Employed Individuals Who Report Actively Searching for a Job by Occupation

Occupation	Percent Actively Seeking a Job	Number Actively Seeking a Job Omaha Area
Management	7.2%	6,203
Business and Financial Operations	15.7%	7,556
Computer and Mathematical	15.5%	4,188
Architecture and Engineering	22.0%	2,708
Life, Physical and Social Sciences	10.5%	387
Community and Social Service	3.8%	483
Legal	14.0%	1,052
Education, Training and Library	14.9%	5,804
Arts, Design, Entertainment, Sports, and Media	10.9%	963
Healthcare Practitioners and Technical Workers	7.3%	3,489
Healthcare Support	15.8%	1,104
Protective Services	23.4%	2,481
Food Preparation and Serving Related	28.4%	4,011
Building and Grounds Cleaning and Maintenance	28.6%	1,922
Personal Care and Services	0.0%	0
Sales and Related	17.2%	3,905
Office and Administrative Support	16.6%	8,133
Farming, Fishing, and Forestry	0.0%	0
Construction and Extraction	9.1%	1,138
Installation, Maintenance and Repair	2.0%	241
Production	32.9%	4,484
Transportation and Material Movers	23.6%	3,968

Source: *Omaha Area Labor Availability Survey*

Results in Table 2.5 show great variation in the share of employed workers who are actively seeking a new job. In most occupations, between 7% and 33% of workers were actively seeking new work. The highest shares were for production workers (32.9%), building and grounds cleaning and maintenance workers (28.6%) and food preparation and serving related workers (28.4%). Among blue collar

occupations, 23.6 percent of transportation and material moving workers are seeking new work but few installation, maintenance and repair workers (2.0%) are looking. Among white collar workers, the share searching for work is highest for architects and engineers (22.0%), and around fifteen percent for business and financial workers, computer and mathematical workers, teachers and legal workers. For service occupations, approximately 16 percent to 17 percent of healthcare support workers, sales and related workers, and office and administrative support workers are actively seeking work. The largest number of employed workers who are actively seeking a new job are found in select white collar and service occupations. Among white collar workers, there are 7,560 business and financial services workers, 6,200 managers and 5,800 education workers actively searching for work. Note that farmers and ranchers typically would be classified as farm and ranch managers. Among service workers, there are 8,130 office and administrative support workers actively seeking new work. Among blue collar workers, there are 4,480 production workers and 3,970 transportation and material moving workers actively searching.

Table 2.6: Relative Abundance of Currently Employed Job-Seekers by Occupation

Occupation	School Finishers and Net Migrants Omaha Area	Employed But Actively Seeking Work Omaha Area
Management	376	6,203
Business and Financial Operations	944	7,556
Computer and Mathematical	327	4,188
Architecture and Engineering	162	2,708
Life, Physical and Social Sciences	962	387
Community and Social Service	130	483
Legal	108	1,052
Education, Training and Library	316	5,804
Arts, Design, Entertainment, Sports, and Media	318	963
Healthcare Practitioners and Technical Workers	1,771	3,489
Healthcare Support	307	1,104
Protective Services	453	2,481
Food Preparation and Serving Related	989	4,011
Building and Grounds Cleaning and Maintenance	288	1,922
Personal Care and Services	500	0
Sales and Related	1,125	3,905
Office and Administrative Support	1,693	8,133
Farming, Fishing, and Forestry	66	0
Construction and Extraction	599	1,138
Installation, Maintenance and Repair	562	241
Production	513	4,484
Transportation and Material Movers	899	3,968

Sources: IPEDS, U.S. Department of Education for graduates, Omaha Area *Labor Availability Survey* and BBR calculations

As is evident from Table 2.5, there is a significant number of employed workers actively seeking new employment at any moment in time. In fact, the number of employed workers actively searching for a work typically dwarfs the number of annual entrants to each occupation. Table 2.6 compares the estimated number of employed workers actively searching for a work at a given moment (Table 2.5) with the estimated number of annual of entrants, by occupation (Table 2.2) for the Omaha area. For most occupations, there are more experienced workers actively searching for work than new entrants. This highlights the critical role that job search by experienced workers plays in operation of the labor market.

3. Barriers to Employment and the Local Labor Market

The preceding chapter found that there are a significant group of currently employed workers who are actively looking for a new job. In many occupations, there are also individuals who are not currently working who would be likely to enter the workforce if a suitable job is available. These workers represent an important skill resource for Omaha area employers. Two questions come to mind about these potential workers. First, what challenges or barriers do they foresee in seeking new employment? Second, do these challenges appear to represent a skills gap? These two questions are discussed below.

Survey results reported in the *Omaha Area Labor Availability Survey* show the types of barriers perceived by employed workers who would consider changing jobs. The various criteria fall into categories including working conditions, suitability for employment, work schedule and compensation. Analysis focuses on the currently employed. Workers who are unemployed, retired or otherwise out of the labor force generally did not respond to the question.

Three in five employed potential job seekers (62.8%) cite a lack of job opportunities in the area as a barrier to changing jobs. This result is perhaps surprising given that projected openings exceed new entrants in the Omaha area for most occupations, as reported in Chapter 2. However, the result may simply mean that potential job seekers perceive a lack of appropriate job opportunities, that is, job opportunities which match their skills and ambitions. This perspective is bolstered by the finding that three in ten employed potential job seekers (30.0%) report facing a barrier to finding new employment because they are "overqualified." Other common obstacles perceived by potential job seekers relate to compensation and work hours available from local employers. More than two-thirds (67.5%) cite "inadequate pay offered by local employers" as an obstacle. Inadequate benefits are cited by 49.4 percent of employed job seekers. Inadequate hours are cited by 47.6 percent.

Potential seekers also perceive that their own background may limit their potential to find employment. Just under one-third (31.9%) cite a lack of training while 24.4 percent cite a lack of education. Besides skill, workers also are concerned about elements of their work history or personal history which create a perceived barrier. Poor credit history is noted by 16.0 percent of employed potential job seekers. Credit history is sometimes used as a screen by potential employers. Work history is cited by 10.7 percent, while a criminal record is cited as a barrier by 0.7 percent of job seekers.

Results also show that family considerations create a barrier for some workers. In particular, a lack of childcare is noted by 10.8 percent of employed potential job seekers and family commitments are noted by 21.6 percent. Currently employed workers may have found a position which can accommodate their family commitments, a feature which binds them to that position.

Do these obstacles suggest the presence of a skills gap in the Omaha area? Potentially so, if potential job seekers perceive they have inadequate education or training, or have a life history such as a criminal record which will dissuade employers from utilizing their skills, or if employers offer inadequate wages to attract potential job seekers into the new jobs where their skills are needed. Below we examine this evidence of a skills gap in more detail, by comparing worker assessments with those of employers, and comparing wage expectations with market wages in the Omaha area.

Table 3.1 compares employer perceptions of worker skill with the perceptions of potential job seekers from the Omaha area. Employer perceptions come from the report *Omaha Area Survey of Hiring and*

Training Needs. In particular, employers were asked whether a series of factors, including occupation skills, make it difficult to hire workers in particular occupations. In Omaha, employer perceptions of a lack of occupation-specific skills from whatever source (a lack of education, lack of training) is similar to the perceptions of potential job seekers. Both perceive a significant problem, although employers are 10%-18% more likely to cite this issue.

Table 3.1: Employer and Employed Potential Job Seekers Perceptions of Skill and Training

Issue	Employed Potential Job Seekers	Employers Hiring for Specific Occupations
Percent Indicating a Lack of Training is an Obstacle to Changing Jobs	31.9%	
Percent Indicating a Lack of Education is an Obstacle to Changing Jobs	24.4%	
Percent Indicating that Lack of Occupation Specific Skills Makes It Difficult to Hire		42.9%
Percent Indicating that Lack of Required Licenses/Certificates Makes It Difficult to Hire		10.5%

Sources: *Omaha Area Survey of Hiring and Training Needs* and *Omaha Area Labor Availability Survey*

Table 3.2 looks at other workforce issues which influence employability; in particular, facts or tendencies in the background of workers which may reduce or prohibit employability even if workers have the necessary skills for an occupation. For the Omaha area, the table shows that 21.7 percent of employers indicate that failed background checks make it difficult to hire. A background check can include a variety of factors including a criminal record, substance abuse, or evidence of credit problems. Results from the *Omaha Area Labor Availability Survey* indicate that some potential job seekers also recognize that difficulties with their background could be a barrier to employment.

Table 3.2: Employer and Employed Potential Job Seekers Perceptions of Worker Background and History

Issue	**Employed Potential Job Seekers**	**Employers Hiring for Specific Occupations**
Percent Indicating Criminal Record is an Obstacle to Employment	0.7%	
Percent Indicating Employment History is an Obstacle to Employment	10.7%	
Percent Indicating Poor Credit History is an Obstacle to Employment	16.0%	
Percent Indicating Failed Background Check Makes It Difficult to Hire		21.7%
Percent Indicating that Poor Work History Makes It Difficult to Hire		39.0%

Sources: Omaha Area *Survey of Hiring and Training Needs* and *Omaha Area Labor Availability Survey*

Table 3.2 also shows that 39.0 percent of employers indicate that a poor work history makes it difficult to hire, as reported by respondents to the *Omaha Area Survey of Hiring and Training Needs*. Follow-up discussions with employers suggest that poor work history refers to evidence of frequent "job-hopping," or other indicators that workers do not fit in well at their workplace. Note that there is a large difference

of opinion between employers and workers with regards to work history. Nearly two in five employers indicate that applicants with a poor work history make it difficult to hire but only 10.7 percent of employed job seekers feel that employment history is an obstacle to finding a new job. Such problems can certainly discourage hiring, even when workers have required skills. This is the largest difference of opinion between employers and job seekers among any of the issues presented in Tables 3.1 and 3.2.

The final issue pertains to the wages of potential jobs. This is another area where workers and employers have very different perceptions. As was noted above, approximately two-thirds (67.5%) of potential job seekers see the wages available from local employers as an obstacle to finding a new job. At the same time, about one-third (35.3%) of Omaha area employers see wage demands from workers which were "too high" as a cause of difficulty in hiring, according to the results in the report *Omaha Area Survey of Hiring and Training Needs.*

This issue is worthy of further study. Fortunately, a wealth of information is available about local wages, including detailed information about the wage desires of workers from the *Omaha Area Labor Availability Survey* and information about the average wages by occupation in the Omaha area from the U.S. Department of Labor. The information can be used to assess whether job seekers have realistic expectations regarding wages in potential new jobs; in particular, whether job seekers expect large wage increases or wages which are well above the occupation average in the regional economy. While some increase in wages would be expected in order to draw workers to a new job, unrealistic expectations could be a source of a skills gap.

Results in Table 3.3 show current wages and desired wages for employed potential job seekers by education attainment category. This is a comparison between the current wage reported by Omaha area respondents to the *Omaha Area Labor Availability Survey* and the minimum wage which would be required for respondents to improve their job situation, assuming a new position met their other most important job condition requirements (i.e., the desired wage). Results are presented for potential job seekers who report hourly wages.

Table 3.3: Current and Desired Wages of Employed Job Seekers by Educational Attainment

Highest Education Level	Weighted N	Average Current Wage	Averaged Desired Wage	Average Wage Differential	Percent Wage Differential
Less than High School	15	$17.14	$17.36	$0.22	1.3%
High School Graduate or GED	182	$17.20	$18.85	$1.65	9.6%
Some College	24	$14.66	$16.75	$2.10	14.3%
Vocation or Technical Degree	37	$24.59	$27.42	$2.84	11.5%
Associate's Degree	83	$20.30	$22.07	$1.76	8.7%
Bachelor's Degree	142	$23.26	$25.13	$1.88	8.1%
Master's Degree or Higher	42	$30.91	$31.74	$0.83	2.7%

Source: *Omaha Area Labor Availability Survey*

Results show that potential job seekers hope for a position which pays $0.22 to $2.84 per hour more than their current position. The desired wage increase in percentage terms ranges between 1.3 and 14.3 percent. These percentage differences are significant but perhaps manageable, that is, in-line with the opening ask of a worker who is being recruited to change positions.

Additional insights can be generated by comparing the current and desired wage of potential job seekers by occupation. This is done in Table 3.4. Results in Table 3.4 show wide variety in desired wage increases, with the largest desired increases in selected service occupations. Among blue collar workers, construction and extraction workers (SOC 47) desire the largest wage increase, $2.91 per hour on average. Production workers (SOC 51) desire the largest percent wage increase (10.5%). The gap between desired and current hourly wages is larger for select service occupations. Desired wages are $3.43 per hour higher (32.6%) for food preparation and serving related workers (SOC 35) and $3.42 per hour higher (26.0%) for personal care and services workers (SOC 39). The gap is smaller for sales and related workers and office and administrative workers. Among white collar workers, the gap is $3.44 per hour (13.3%) for computer and mathematical workers (SOC 15), but is substantially lower in other occupations.

The larger wage gaps observed in some occupations suggest that wage expectations could be a source of mismatch in the labor market. Before reaching this interpretation, however, it is worthwhile to examine how desired wages compare with the actual wages found in various occupation groups within the Omaha Area labor market area. The difference between the desired wages in each occupation group and the average hourly wage in that occupation can be observed in Table 3.5. Current average hourly wage data are based on U.S. Bureau of Labor Statistics occupation wage data for the Omaha Metropolitan Area.

For occupations which typically require a college degree (SOC 11-29), desired wages are often well below the average hourly wage in Omaha area occupations. While this may occur because potential job seekers are on average younger, and therefore, have not yet gained sufficient experience to command the average wage in their occupation, the results suggest that the desired wage increases of college educated potential job seekers are modest and manageable. In other words, the desired wage increases are line with what workers would hope for when changing jobs.

In most cases, the same cannot be said of occupations which do not typically require a college degree (SOC 31-53). Wage expectations, and even current wages, are often above, and sometimes well above, regional averages. Among blue collar occupations, both current wages and wage expectations are above regional averages for construction and extraction workers (SOC 47) and installation, maintenance and repair workers (SOC 49). Among service occupations, current wages and wage expectations are above regional averages for health care support workers (SOC 31) and protective service workers (SOC 33). Wages expectations are well above regional averages for personal care and service workers (SOC 39).

Table 3.4: Current and Desired Wages of All Potential Job Seekers by Occupation Group

Occupation Group	Weighted N	Average Current Wage	Averaged Desired Wage	Average Wage Differential	Percent Wage Differential
Management	13	$31.48	$32.36	$0.88	2.8%
Business and Financial Operations	28	$25.54	$26.58	$1.05	4.1%
Computer and Mathematical	11	$25.92	$29.36	$3.44	13.3%
Architecture and Engineering	3	$27.00	$32.00	$5.00	18.5%
Life, Physical and Social Science	2	$26.79	$29.00	$2.22	8.3%
Community and Social Service	14	$15.52	$15.23	-$0.28	-1.8%
Legal	2	$34.00	$31.14	-$2.86	-8.4%
Education, Training, and Library	21	$15.59	$16.77	$1.18	7.6%
Arts, Design, Entertainment, Sports, and Media	11	$16.50	$16.71	$0.21	1.3%
Health Care Practitioners and Technical	85	$30.53	$32.18	$1.65	5.4%
Health Care Support	19	$18.16	$20.09	$1.93	10.6%
Protective Service	19	$26.37	$24.44	-$1.93	-7.3%
Food Preparation and Serving Related	34	$10.53	$13.96	$3.43	32.6%
Building and Grounds Cleaning and Maintenance	17	$13.94	$15.23	$1.29	9.2%
Personal Care and Service	9	$13.15	$16.58	$3.42	26.0%
Sales and Related	25	$13.93	$16.04	$2.11	15.2%
Office and Administrative Support	88	$17.21	$19.30	$2.09	12.2%
Farming, Fishing and Forestry	1	$10.00	$25.00	$15.00	150.0%
Construction and Extraction	26	$29.75	$32.67	$2.91	9.8%
Installation, Maintenance and Repair	23	$26.06	$28.09	$2.03	7.8%
Production	34	$16.09	$17.77	$1.68	10.5%
Transportation and Material Moving	43	$17.31	$18.04	$0.72	4.2%

Source: *Omaha Area Labor Availability Survey*

Table 3.5: Average Desired and Actual Wages of All Potential Job Seekers by Occupation Group

Occupation Group	Weighted N	Average Current Wage	Averaged Desired Wage	Average Wage Differential	Omaha Area Average Wage (May 2017)
Management	13	$31.48	$32.36	$0.88	$43.21
Business and Financial Operations	28	$25.54	$26.58	$1.05	$32.69
Computer and Mathematical	11	$25.92	$29.36	$3.44	$38.08
Architecture and Engineering	3	$27.00	$32.00	$5.00	$35.44
Life, Physical and Social Science	2	$26.79	$29.00	$2.22	$31.66
Community and Social Service	14	$15.52	$15.23	-$0.28	$20.18
Legal	2	$34.00	$31.14	-$2.86	$40.20
Education, Training, and Library	21	$15.59	$16.77	$1.18	$24.33
Arts, Design, Entertainment, Sports, and Media	11	$16.50	$16.71	$0.21	$22.19
Health Care Practitioners and Technical	85	$30.53	$32.18	$1.65	$36.13
Health Care Support	19	$18.16	$20.09	$1.93	$14.57
Protective Service	19	$26.37	$24.44	-$1.93	$21.55
Food Preparation and Serving Related	34	$10.53	$13.96	$3.43	$11.87
Building and Grounds Cleaning and Maintenance	17	$13.94	$15.23	$1.29	$13.38
Personal Care and Service	9	$13.15	$16.58	$3.42	$13.58
Sales and Related	25	$13.93	$16.04	$2.11	$19.14
Office and Administrative Support	88	$17.21	$19.30	$2.09	$17.46
Farming, Fishing and Forestry	1	$10.00	$25.00	$15.00	$15.62
Construction and Extraction	26	$29.75	$32.67	$2.91	$22.30
Installation, Maintenance and Repair	23	$26.06	$28.09	$2.03	$22.83
Production	34	$16.09	$17.77	$1.68	$17.93
Transportation and Material Moving	43	$17.31	$18.04	$0.72	$17.73

Source: *Omaha Area Labor Availability Survey* and U.S. Bureau of Labor Statistics

The gap between desired and actual wages in these occupations may make it especially difficult for employers to find needed workers. But, are employers having difficulty? In other words, are these the occupations where employers note that it is most difficult to find workers? This question is addressed in Table 3.6. For each of the 5 occupations, results are presented regarding the percentage of employers who found that it is difficult to hire workers and the percentage of employers who felt that wage demands are "too high." Employers reported that it was less difficult than average (66.9%) to find workers in the personal care and services occupation (SOC 39). By contrast, employers reported that 80.1 percent of health care support workers (SOC 31), 90.9 percent of protective service workers (SOC 33), 74.0 percent of construction and extraction workers (SOC 47) and 86.0 percent of installation, maintenance and repair workers were difficult to hire. For health care support workers (SOC 31) and protective services workers (SOC 33), there also was an above-average share of employers who indicated that it was difficult to hire workers in these occupations due to wage demands which are "too high." Wage requirements appear to be contributing to a skill gap in these two occupation groups but not the other three occupation groups listed in Table 3.6.

Table 3.6: Share of Business Respondents in the Survey of Omaha Area Businesses about Skill and Training Requirements Reporting It Was Difficult to Find Workers, By Selected Occupation

Occupation Group	Percent of Employers Indicating That Wage Demands for the Occupation Were "Too High" (Average = 35.3%)	Percent of Employers Indicating That It Is "Difficult" To Find Workers in Occupation (Average = 66.9%)
Health Care Support	38.0%	80.1%
Protective Services	49.8%	90.9%
Personal Care and Services	39.2%	57.7%
Construction and Extraction	22.1%	74.0%
Installation, Maintenance and Repair	23.5%	86.0%

Source: *Omaha Area Survey of Hiring and Training Needs*

In summary, both employers and potential employees perceive some common sources of difficulty in hiring. Both perceive that some potential employees lack occupation-specific skills (lack of education, lack of training) and that a significant share of potential employees have factors in their background (a poor credit history or the inability to pass a background check) which can make hiring difficult, even when workers have appropriate skills for a job. In contrast to potential employees, employers also note that applicants with a "poor work history" make hiring difficult. Some workers may not be aware that "job hopping" or other evidence of an inability to get along at work is harming their employment prospects. Finally, there is only limited evidence that the desire for higher wages is a significant source of the skills gap in the Omaha area. The strongest evidence of such a wage-based skills-gap is found among health care support workers and protective services workers.

Worker retirements are another potential source for a skills gap in the Omaha area. In particular, many firms rely on skilled workers who are reaching retirement age. This issue is especially acute because the large baby-boom generation cohort is reaching retirement age.

The *Omaha Area Survey of Hiring and Training Needs* asked employers whether they were concerned with the potential loss of skill and experience due to retiring workers. Twenty percent of employers responded that they were somewhat or very concerned due to retirements in the next year while 35.8 percent were somewhat or very concerned due to retirements over the next 5 years (15.0 percent were very concerned). Among employers, 54.8 percent report that they are taking steps to address potential skills gaps which might arise from employees retiring. Another 7.8 percent indicate they are planning to take steps. Among employers which are already taking steps, 23.8 percent are training workers in the skills that will be lost through retirement, 19.9 percent are mentoring workers through on-the-job training, and 15.6 percent are hiring workers with those skills. Another 10.9 percent are retaining workers on a part-time or consulting basis but just 2.2 percent are encouraging workers to delay retirement.

4. Detailed Evaluation of Select Occupations

This section compares information from the employer and household surveys and secondary data from government sources to develop a profile of skill supply and demand in specific occupations. Occupations were selected that have been identified by the Nebraska Department of Labor as a high wage occupation in the region and/or when evidence of a skills gap was identified in Chapters 2 and 3. Analysis should reveal the nature of the skills gap, if any, found in different occupations. A detailed analysis is provided for the following occupations:

Heavy and Tractor-Trailer Truck Drivers (SOC CODE 53-3032)
Welders, Cutters, Solderers and Brazers (SOC CODES 51-4121)
Registered Nurses (SOC CODE 29-1141)
Maintenance and Repair Workers, General (SOC CODE 49-9071)
Software Developers, Applications (SOC CODE 15-1132)
Computer Programmers (SOC CODE 15-1131)
Carpenters (SOC CODE 47-2031)
Machinists (SOC CODE 51-4041)

A. Heavy and Tractor-Trailer Truck Drivers (SOC CODE 53-3032)

Heavy and tractor-trailer truck drivers transport goods from one place to another, often through long haul routes. This is considered a H3 occupation by the Nebraska Department of Labor, meaning it offers higher wage earnings opportunities. Heavy truck drivers also are a primary occupation within the transportation and material moving occupation group. There was a significant annual deficit between the number of job openings and potential entrants into the transportation and material moving occupation. The mean hourly wage in the Omaha area in 2017 is $20.50. Finding workers is challenging in this occupation. As seen in Table 4.1, 89.4 percent of businesses report that it is difficult to hire heavy and tractor-trailer truck drivers. That is a much higher percentage of difficulty than is found for occupations overall (66.9%). Table 4.1 also shows the reasons for difficulty in hiring according to Omaha area employers who hire heavy and tractor-trailer truck drivers. Nearly three in four of these employers (71.3%) report that hiring drivers is challenging due to applicants who lack work experience. Nearly half of employers report that hiring is difficult because of applicants who have a poor work history (46.4%) or fail a background check (44.6%). Just 17.2% of employers are willing to hire truck drivers without experience and 60.6% require at least one year of driving experience. There is also a challenge in hiring due to workers who lack required licenses and certificates.

Data on annual openings and entrants for the heavy and tractor-trailer truck driver occupation also suggest challenges with the number of applications. As seen in Table 4.1, there are an estimated 489 new openings in this occupation each year in the Omaha area due to growth in employment and the replacement of workers. At the same time, there are just 2 graduates each year from the Bus and Truck Driver certificate program in the two Omaha area community colleges, although private truck driving schools help meet this training need in the Omaha region. Further, the *Omaha Area Labor Availability Survey* did not identify any former truck drivers in the Omaha area who report an interest in re-entering the workforce. Regardless, given the large number of annual openings in the Omaha area, there is a need to attract more workers to seek truck driving training and certificates. There is also a need to develop incentives for employers to hire less experienced truck drivers, when feasible, given stated employer minimum experience requirements. The state of Nebraska or local agencies could participate through temporary wage subsidies to businesses which hire less experienced drivers. At the same time, workers in this occupation should avoid behaviors that can negatively impact their work history or make it difficult to pass a background check.

Table 4.1
Key Findings for the Heavy and Tractor-Trailer Truck Drivers Occupation

Occupation	Heavy and Tractor-Trailer Truck Drivers (SOC 53-3032)	All Occupations
Percent Indicating It is Difficult to Hire	89.4%	66.9%
Reasons for Difficulty in Hiring		
Lack of Experience	71.3%	47.4%
Poor Work History	46.4%	39.0%
Lack of Occupation-Specific Skills	39.3%	42.9%
Failed Background Check	44.6%	21.7%
Wage Demands Too High	25.5%	35.3%
Lack of Required Licenses/Certificates	57.2%	10.5%
Language Barriers	1.8%	5.2%
Not Enough Applicants	69.5%	72.7%
Availability for Shifts Required	10.6%	29.2%
Lack of Required Education	2.2%	8.2%
Overqualified	0.0%	5.5%
Citizenship/Work Authorization	1.8%	4.8%
Other	15.5%	10.1%
Average Annual Openings	489	
Certificate Graduates – Bus and Truck Driver		
Community College	2	
Seeking to Re-Enter the Workforce – In Occupation	0	
Minimum Experience Requirement		
No experience required	17.2%	39.3%
Experience required but less than 1 year	22.2%	26.0%
1 year or more experience required	60.6%	34.7%

Sources: *Omaha Area Survey of Hiring and Training Needs*, *Omaha Area Labor Availability Survey, IPEDS,* United States Department of Education and Labor Market Information, Nebraska Department of Labor and Labor Market Information, Iowa Workforce Development

B. Welders, Cutters, Solderers and Brazers (SOC CODE 51-4121)

Welders, cutters, solderers and brazers use hand welding, flame cutting, hand soldering or brazing equipment to weld or join metal components or to fill holes, indentations, or seams of fabricated metals products. Analysis of employment patterns and the key occupations identified by respondents to the *Omaha Area Survey of Hiring and Training Needs* indicates that welders, cutters, solderers and brazers is a common skilled production occupation in the Omaha area. There was a significant annual deficit between the number of annual job openings and potential entrants into production occupations, according to analysis in Chapters 2 and 3. Welders, cutters, solders and brazers is also considered a H3 occupation by the Nebraska Department of Labor, meaning it offers higher wage earnings opportunities. The mean hourly wage for the occupation in the Omaha area in 2017 is $20.53. Survey results indicate that it is challenging to find workers in this occupation. As seen in Table 4.2, 94.3 percent of businesses reported that it is difficult to hire welders.

Table 4.2 also shows reasons for difficulty according to Omaha area businesses who hire welders, cutters, solderers and brazers. Seventy-one percent of Omaha area businesses indicate that there are not enough applicants for jobs in this occupation. Hiring welders, cutters and the like also is challenging due to applicants who lack work experience. Eighty-eight of businesses report that it is difficult to hire because applicants lack work experience and 84.8 percent of businesses require applicants to have experience, including 39.5 percent which require at least one year of experience. There also are issues with workforce knowledge and quality. Employers report that it is difficult to hire because applicants lack occupation-specific skills (78.7%) or have a poor work history (54.8%).

Survey results on the difficulty of hiring are supported by data on annual openings and entrants for the welders, cutters, solderers and brazers. As seen in Table 4.2, there are an estimated 46 new openings in this occupation each year in the Omaha area due to growth in employment and the replacement of workers. But, there are just 18 graduates each year from the Welding Technology/Welder Associate's degree program at Omaha area community colleges. Further, the survey of Omaha area households found no former welders, cutters, solderers and brazers in the area who have an interest in re-entering the workforce.

These findings suggest a need for a larger and more experienced welding workforce in the Omaha area. More individuals should be encouraged to complete welding degree programs. Employers in particular could send less skilled, but reliable workers to seek welding degrees, with support from the state of Nebraska. The State or local agencies also could participate through temporary wage subsidies for industrial businesses which hire less experienced welders, to build the experience level of the work force. Workers in this occupation also should avoid behaviors which lead to a poor work history.

Table 4.2
Key Findings for the Welders, Cutters, Solderers and Brazers Occupation

Occupation	Welders, Cutters, Solderers and Brazers (SOC 51-4121)	All Occupations
Percent Indicating It is Difficult to Hire	94.3%	66.9%
Reasons for Difficulty in Hiring		
Lack of Experience	87.7%	47.4%
Poor Work History	54.8%	39.0%
Lack of Occupation-Specific Skills	78.7%	42.9%
Failed Background Check	27.4%	21.7%
Wage Demands Too High	33.9%	35.3%
Lack of Required Licenses/Certificates	7.7%	10.5%
Language Barriers	7.7%	5.2%
Not Enough Applicants	71.4%	72.7%
Availability for Shifts Required	6.3%	29.2%
Lack of Required Education	0.0%	8.2%
Overqualified	6.3%	5.5%
Citizenship/Work Authorization	7.7%	4.8%
Other	6.3%	10.1%
Average Annual Openings	46	
Graduates – Welding Technology		
Community College	18	
Seeking to Re-Enter the Workforce – In Occupation	0	
Minimum Experience Requirement		
No experience required	15.2%	39.3%
Experience required but less than 1 year	45.3%	26.0%
1 year or more experience required	39.5%	34.7%

Sources: *Omaha Area Survey of Hiring and Training Needs*, *Omaha Area Labor Availability Survey, IPEDS,* United States Department of Education and Labor Market Information, Nebraska Department of Labor and Labor Market Information, Iowa Workforce Development

C. Maintenance and Repair Workers, General (SOC CODE 49-9071)

Maintenance and Repair Workers, General have at least two skills in the installation, maintenance or repair of machines and mechanical equipment. Workers in this occupation play an important role in the construction, building maintenance and manufacturing industries. Maintenance and repair workers also are one of the primary occupations within the installation, maintenance and repair occupation group. The mean hourly wage for the occupation in the Omaha area in 2017 is $19.63. As seen in Table 4.3, 82.6 percent of Omaha area businesses report that it is difficult to hire workers in this occupation.

Table 4.3 also shows the reasons for difficulty in hiring according to Omaha area businesses which hire general maintenance and repair workers. Labor availability is the key challenge. One hundred percent of employers indicate that hiring is difficult because there are not enough applicants, and 27.6 percent indicate it is difficult to find applicants who can work required shifts. Forty-nine percent of business indicate that it is difficult to hire because applicants lack occupation-specific skills, but this rate is just 6 percentage points higher than the average for all occupations. Relatively few businesses report that it is difficult to hire because applicants lacked sufficient experience, even though 46.7 percent of employers require applicants to have at least 1 year of experience.

Data on annual openings and entrants for general maintenance and repair workers also suggest an imbalance between opening and applicants. As seen in Table 4.3, there are 138 projected openings in this occupation each year in the Omaha area. At the same time, just 33 students graduate each year from a Heating, Air Conditioning, Ventilation, and Refrigeration Maintenance, Industrial Electronics or Industrial Mechanics and Maintenance Technology Associate's Degree program at area community colleges. Further, the survey of Omaha area households indicates that there are no former general maintenance and repair workers from the Omaha area who report an interest in re-entering the workforce.

These findings suggest a need to encourage more individuals to seek training in industrial mechanics and maintenance technology each year. Employers might encourage reliable, but less skilled workers at their business to seek such training, perhaps through tuition assistance or allowing workers to attend class during work hours. The state of Nebraska or local agencies could potentially support such efforts by sharing tuition or other costs with employers.

Table 4.3
Key Findings for the Maintenance and Repair Workers, General Occupation

Occupation	Maintenance and Repair Workers, General (SOC 49-9071)	All Occupations
Percent Indicating It is Difficult to Hire	82.6%	66.9%
Reasons for Difficulty in Hiring		
Lack of Experience	35.5%	47.4%
Poor Work History	35.1%	39.0%
Lack of Occupation-Specific Skills	49.1%	42.9%
Failed Background Check	14.6%	21.7%
Wage Demands Too High	20.3%	35.3%
Lack of Required Licenses/Certificates	13.6%	10.5%
Language Barriers	0.0%	5.2%
Not Enough Applicants	100.0%	72.7%
Availability for Shifts Required	27.6%	29.2%
Lack of Required Education	6.6%	8.2%
Overqualified	0.0%	5.5%
Citizenship/Work Authorization	0.0%	4.8%
Other	0.0%	10.1%
Average Annual Openings	138	
Graduates – HVAC, Electrical and Industrial Mechanics and Maintenance Technology		
Community College	33	
Seeking to Re-Enter the Workforce – In Occupation	0	
Minimum Experience Requirement		
No experience required	25.5%	39.3%
Experience required but less than 1 year	27.8%	26.0%
1 year or more experience required	46.7%	34.7%

Sources: *Omaha Area Survey of Hiring and Training Needs*, *Omaha Area Labor Availability Survey, IPEDS,* United States Department of Education and Labor Market Information, Nebraska Department of Labor and Labor Market Information, Iowa Workforce Development

D. Registered Nurses (29-1141)

Registered nurses assess patient health problems and needs, develop and implement nursing care plans, maintain medical records, administer nursing care to ill, injured, convalescent or disabled patients, advise patients on health maintenance and disease prevention, and provide case management. Registered nursing is a considered an H3 occupation by the Nebraska Department of Labor, meaning it offers higher wage opportunities. Registered nurses also are a primary occupation within the health care practitioners and technical workers occupation group. The mean hourly wage in the Omaha area is $30.52 in 2017. Finding workers is challenging in this occupation. As seen in Table 4.4, 80.1 percent of Omaha area businesses report that it is difficult to hire registered nurses.

Table 4.4 also shows the reasons for difficulty in hiring according to Omaha area businesses who hire registered nurses. As with other occupations, availability is a primary challenge. Seventy-three percent of employers indicate that it is difficult to hire because there are not enough applicants for registered nurse positions while 25.6 percent indicate challenges with finding applicants who can work required shifts. There are few if any problems with the quality of applicants, with only 19.3 percent employers reporting that is difficult to hire because applicants have a poor work history. Further, only 19.6 percent of employers report that applicants for registered nurse positions lack work experience, even though a higher than average 54.4 percent of employers require applicants for registered nurse positions to have at least 1 year of employment experience. The preference for experienced registered nurses may influence negotiations over wages. An elevated 53.8 percent of employers indicate that it is difficult to hire because applicants make wage demands which are 'too high."

Data on annual openings and entrants for the registered nurse occupation suggest that the challenges are not due to a lack of local graduates. As seen in Table 4.4, there are an estimated 513 new job openings each year for registered nurses in the Omaha area due to growth in employment and the replacement of workers. However, there are 794 graduates each year with a Baccalaureate Degree or an Associate's Degree in registered nursing from area colleges and community colleges including UNMC (Omaha Division), Creighton, Nebraska Methodist College, Clarkson College, College of Saint Mary, Grace University, Kaplan University, Metropolitan Community College and Iowa Western Community College. Together these annual graduates should be sufficient to meet the need for new job openings in the Omaha area, especially since there are an estimated 1,152 Omaha area residents with experience as a registered nurse who would consider rejoining the labor force if an appropriate opportunity was available. The challenge may be with local employers competing for graduates with job opportunities in other Midwest cities. Employers in the Omaha area may consider how to increase the wages, improve working condition and enhance the overall appeal of working as a registered nurse.

Table 4.4
Key Findings for the Registered Nurses Occupation

Occupation	Registered Nurses (SOC 29-1141)	All Occupations
Percent Indicating It is Difficult to Hire	80.1%	66.9%
Reasons for Difficulty in Hiring		
Lack of Experience	19.6%	47.4%
Poor Work History	19.3%	39.0%
Lack of Occupation-Specific Skills	19.3%	42.9%
Failed Background Check	6.3%	21.7%
Wage Demands Too High	53.8%	35.3%
Lack of Required Licenses/Certificates	15.8%	10.5%
Language Barriers	0.0%	5.2%
Not Enough Applicants	73.1%	72.7%
Availability for Shifts Required	25.6%	29.2%
Lack of Required Education	6.3%	8.2%
Overqualified	3.2%	5.5%
Citizenship/Work Authorization	0.0%	4.8%
Other	6.3%	10.1%
Average Annual Openings	513	
Graduates – Registered Nursing		
College or Community College	794	
Seeking to Re-Enter the Workforce – In Occupation	1,152	
Minimum Experience Requirement		
No experience required	19.8%	39.3%
Experience required but less than 1 year	25.8%	26.0%
1 year or more experience required	54.4%	34.7%

Sources: *Omaha Area Survey of Hiring and Training Needs*, *Omaha Area Labor Availability Survey, IPEDS,* United States Department of Education and Labor Market Information, Nebraska Department of Labor and Labor Market Information, Iowa Workforce Development

E. Software Developers, Applications (SOC 15-1132)

Software Developers, Applications develop applications software for medical, industrial, military, communications, aerospace, business, scientific, and general computing applications. Software developers, applications software also is a key occupation within the computer and mathematical occupations group. Analysis in Chapters 2 and 3 revealed evidence of a significant gap between openings and occupation entrants for computer and mathematical workers in the Omaha area. Analysis of employment patterns and the key occupations identified by respondents to the Omaha Area *Survey of Hiring and Training Needs* indicates that software developers, applications (SOC CODE 15-1132) is a common computer occupation in the Omaha area. It is a considered an H3 occupation by the Nebraska Department of Labor, meaning it offers higher wage opportunities. The mean hourly wage for the occupation in the Omaha area in 2017 is $42.80. As seen in Table 4.5, 70.1 percent of businesses in the Omaha area which hire software developers, applications workers report that it is difficult to hire workers in this occupation.

Table 4.5 also shows the reasons for difficulty in hiring. One hundred percent of Omaha area businesses indicate that there are not enough applicants for jobs in the software developers, application occupation. Workers also appear to understand these market conditions, as 70.7 percent of businesses indicate that hiring is difficult because applicants have wage demands which are "too high." There is also a lack of experienced workers, with 71.0 percent of employers indicate that applicants lack sufficient experience. All employers require applicants to have work experience, including 70.1 percent of employers which require at least 1 year of experience. Interestingly, 100% of Omaha area employers who hire software developers, applications workers note that issues with citizenship and workforce authorization make hiring more difficulty.

Data on annual openings and entrants for the software developers, applications also suggests a significant shortfall in the number of applicants. As seen in Table 4.5, there are an estimated 116 openings in this occupation each year in the Omaha area due to net job growth and the replacement of workers. However, there are just 58 graduates each year with a computer science degree from Omaha area colleges and universities. Further, the survey of Omaha area households did not identify any former software developers, applications workers who report an interest in re-entering the workforce.

For information technology occupations, the *Omaha Area Survey of Hiring and Training Needs* included supplementary questions regarding important and difficult to hire IT occupations. Survey results indicated that the most important certificates for Software Developers, Applications were Microsoft (Certified IT Professional) (31.3% of employers), Project Management Professional (15.8%) and Cisco (CCNA). Only 15.8% of employers reported that no certificates were required. Proficiencies which were required for Software Developers, Applications included SQL (76.5% of employers), C (69.8%), JAVA (69.2%) and PHP (33.5%). Thirty-three percent of Software Developers, Applications were required to have IT infrastructure experience and just 4.8 percent of employers required no proficiencies. Eight-six percent of Omaha area employers report that their preferred level of education for applicants for software developers, applications positions is a Bachelor's degree. The remaining employers required either a high school, vocational, or an Associate's degree.

These findings support the often stated goal of encouraging more people to pursue education and training in computer science fields at both colleges and community colleges, and through certificate and other training programs. The high average wages in the occupation should provide significant incentive for capable students to pursue a career in this field, and the list of certificates and proficiencies above should provide guidance to current workers. These findings also support ongoing efforts by Omaha leaders, businesses and organizations to improve quality of life and take other steps to retain and recruit more computer science workers. These ongoing efforts clearly deserve the priority they receive. In terms of international workers, business survey results point to a need to ease and simplify work authorization for software developers.

Table 4.5
Key Findings for Software Developers, Applications

Occupation	Software Developers, Applications (SOC 15-1132)	All Occupations
Percent Indicating It is Difficult to Hire	70.1%	66.9%
Reasons for Difficulty in Hiring		
Lack of Experience	71.0%	47.4%
Poor Work History	0.0%	39.0%
Lack of Occupation-Specific Skills	0.0%	42.9%
Failed Background Check	0.0%	21.7%
Wage Demands Too High	70.7%	35.3%
Lack of Required Licenses/Certificates	0.0%	10.5%
Language Barriers	0.0%	5.2%
Not Enough Applicants	100.0%	72.7%
Availability for Shifts Required	0.0%	29.2%
Lack of Required Education	0.0%	8.2%
Overqualified	41.7%	5.5%
Citizenship/Work Authorization	100.0%	4.8%
Other	0.0%	10.1%
Average Annual Openings	116	
Graduates – Computer Programming		
College or Community College	58	
Seeking to Re-Enter the Workforce – In Occupation	0	
Minimum Experience Requirement		
No experience required	0.0%	39.3%
Experience required but less than 1 year	29.9%	26.0%
1 year or more experience required	70.1%	34.7%

Sources: *Omaha Area Survey of Hiring and Training Needs*, *Omaha Area Labor Availability Survey, IPEDS,* United States Department of Education and Labor Market Information, Nebraska Department of Labor and Labor Market Information, Iowa Workforce Development

F. Computer Programmers (SOC 15-1131)

Computer programmers write and test code that allows computer applications and software programs to function properly, implementing the design of software developers and engineers. Analysis in Chapters 2 and 3 revealed evidence of a significant gap between openings and occupation entrants for computer and mathematical workers in the Omaha area. Analysis of employment patterns and the key occupations identified by respondents to the Omaha Area *Survey of Hiring and Training Needs* indicates that computer programmers (SOC CODE 15-1131) is a common computer and mathematical occupation in the Omaha area. It is a considered an H3 occupation by the Nebraska Department of Labor, meaning it offers higher wage opportunities. The mean hourly wage for the occupation in the Omaha area in 2017 is $38.98. As seen in Table 4.6, 94.5 percent of businesses in the Omaha area which hire computer programmers report that it is difficult to hire workers in this occupation.

Table 4.6 also shows the reasons for difficulty in hiring. Occupation-specific skill appears to be the chief concern for computer programmers, rather than a lack of workers or a lack of work experience. Just 44.1 percent of Omaha area businesses indicate that it is difficult to hire because there are not enough applicants for computer programming positions. This is well below the share for occupations overall. Only 5.8% of employers indicate that applicants lack work experience, despite the finding that more than three-quarters of employers require applicants to have at least 1 year of work experience. The more common concern is that would-be computer programmers lack sufficient skill and have high wage demands. Seventy-two percent of employers indicate that it is difficult to hire because applicants for computer programmer jobs lack occupation-specific skills while 68.8 percent report applicants with wage demands which are "too high." Results suggest that workers need to improve their skill level to become worth the higher wages which they seek. An elevated 43.1 percent of Omaha area employers who hire computer programmers note that issues with citizenship and workforce authorization make hiring more difficult.

Data on annual openings and entrants for computer programmers provide mixed evidence regarding an applicant shortfall. As seen in Table 4.6, there are just 63 openings in this occupation each year in the Omaha area due to net job growth and the replacement of workers. At the same time, there are 64 graduates each year with a computer science or computer programming degree from an Omaha area colleges and community colleges. While many of these 64 workers are also needed in related occupations, such as software development, it is also true that students in a variety of majors and occupations learn computer programming skills. The survey of Omaha area households did not identify any former software developers, applications who report an interest in re-entering the workforce.

For information technology occupations, the *Omaha Area Survey of Hiring and Training Needs* included supplementary questions regarding important and difficult to hire IT occupations. According to survey results, more than three-quarters of Omaha area businesses (79.0%) did not require computer programmers to earn certificates, although most employers expected particular programming proficiencies. The required proficiencies for computer programmers included SQL (79.0% of employers), C (42.0%), JAVA (42.0%), PHP (21.0%), Python (21.0%) and Ruby (21.0%). Twenty-one percent of

employers required no proficiencies. One hundred percent of Omaha area employers report that their preferred level of education for applicants for computer programmer positions is a Bachelor's degree.

These findings suggest that more college students should be encouraged to increase their use and study of computer programming and that more students should major in computer science. Certificate programs can provide an avenue for non-computer science majors to develop required proficiencies. The high average wages in the occupation should provide significant incentive for capable students to pursue a career in this field. Business survey results also point to a need to ease and simplify work authorization for international computer programmers.

Table 4.6
Key Findings for Software Developers, Applications

Occupation	Computer Programmers (SOC 15-1131)	All Occupations
Percent Indicating It is Difficult to Hire	94.5%	66.9%
Reasons for Difficulty in Hiring		
Lack of Experience	5.8%	47.4%
Poor Work History	0.0%	39.0%
Lack of Occupation-Specific Skills	71.5%	42.9%
Failed Background Check	0.0%	21.7%
Wage Demands Too High	68.8%	35.3%
Lack of Required Licenses/Certificates	15.6%	10.5%
Language Barriers	15.6%	5.2%
Not Enough Applicants	44.1%	72.7%
Availability for Shifts Required	0.0%	29.2%
Lack of Required Education	15.6%	8.2%
Overqualified	22.7%	5.5%
Citizenship/Work Authorization	43.1%	4.8%
Other	15.6%	10.1%
Average Annual Openings	63	
Graduates – Computer Programming		
College or Community College	58	
Seeking to Re-Enter the Workforce – In Occupation	0	
Minimum Experience Requirement		
No experience required	0.0%	39.3%
Experience required but less than 1 year	21.4%	26.0%
1 year or more experience required	78.6%	34.7%

Sources: *Omaha Area Survey of Hiring and Training Needs*, *Omaha Area Labor Availability Survey, IPEDS,* United States Department of Education and Labor Market Information, Nebraska Department of Labor and Labor Market Information, Iowa Workforce Development

G. Carpenters (SOC CODE 47-2031)

Carpenters construct, erect, install and repair wood structures and fixtures. Workers in this occupation play a key role in the construction industry, an expanding local industry given steady population growth in the Omaha Metropolitan Area. Carpenters is also a key occupation within the construction and extraction occupation group, which has a significant annual deficit of occupation entrants to occupation openings. The 2017 mean hourly wage for this occupation in the Omaha area is $20.17. As seen in Table 4.7, 91.0 percent of businesses report that it is difficult to hire carpenters.

Table 4.7 also shows the reasons for difficulty in hiring according to Omaha area businesses which hire carpenters. Experience, occupation-specific skills, workforce quality and work authorization are the key challenges. An elevated 75.2 percent of businesses indicate that it is difficult to hire carpenters because applicants lack occupation-specific skills. Nearly two-thirds of businesses report that it is difficult to hire because applicants lack sufficient experience. Further, 52.6 percent of employers require applicants to have at least 1 year of experience, although it is worth noting that 38.0 percent of employers require no experience. An elevated 35.8 percent of businesses report it is difficult to hire because applicants for carpenter positions cannot pass a background check. Fifteen percent of Omaha area employers who hire carpenters note that issues with citizenship and workforce authorization make hiring more difficult.

Data suggest an imbalance between annual opening and applicants for carpenter positions. As seen in Table 4.7, there are 136 projected openings in this occupation each year in the Omaha area. At the same time, each year just 3 students graduate from an area community college in a Carpentry Associate's Degree or Certificate program while 16 students graduate from a General Construction Trades Associate' Degree or Certificate program. Further, the survey of Omaha area households indicates that there are no former carpenters from the Omaha area who report an interest in re-entering the workforce.

These findings suggest a need to increase the number of carpenters in the Omaha Area. More individuals should be encouraged to study carpentry at a community college and/or to participate in an apprenticeship program. Employers might encourage reliable, but less skilled workers at their construction business to seek such training, by offering apprenticeships or by supporting their schooling, for example, through tuition assistance. The state of Nebraska or local agencies could potentially support such efforts by sharing tuition or apprenticeship program costs with employers. Business survey results also point to a need to ease and simplify work authorization for carpenters who are not U.S. citizens. While many businesses report that work experience is a challenge when hiring carpenters, a sufficient share of Omaha area employers indicate a willingness to hire trained carpenters without work experience. In other words, the occupation appears to have a good mix of openings for entry level and experienced workers. But, workers in this occupation should carefully manage their careers and avoid behaviors which make it difficult to pass a background check.

Table 4.7
Key Findings for the Carpenters Occupation

Occupation	Carpenters (SOC 47-2031)	All Occupations
Percent Indicating It is Difficult to Hire	91.0%	66.9%
Reasons for Difficulty in Hiring		
Lack of Experience	65.7%	47.4%
Poor Work History	45.9%	39.0%
Lack of Occupation-Specific Skills	75.2%	42.9%
Failed Background Check	35.8%	21.7%
Wage Demands Too High	15.1%	35.3%
Lack of Required Licenses/Certificates	9.9%	10.5%
Language Barriers	9.9%	5.2%
Not Enough Applicants	75.8%	72.7%
Availability for Shifts Required	5.0%	29.2%
Lack of Required Education	5.0%	8.2%
Overqualified	5.0%	5.5%
Citizenship/Work Authorization	15.1%	4.8%
Other	9.9%	10.1%
Average Annual Openings	136	
Graduates – Carpentry or Construction Trades		
Community College	19	
Seeking to Re-Enter the Workforce – In Occupation	0	
Minimum Experience Requirement		
No experience required	38.0%	39.3%
Experience required but less than 1 year	9.3%	26.0%
1 year or more experience required	52.6%	34.7%

Sources: *Omaha Area Survey of Hiring and Training Needs*, *Omaha Area Labor Availability Survey, IPEDS,* United States Department of Education and Labor Market Information, Nebraska Department of Labor and Labor Market Information, Iowa Workforce Development

H. Machinists (SOC CODE 51-4041)

Machinists set up and operate computer- and mechanically-controlled machine tools to produce precision metal parts, tools and instruments. Workers in this occupation play an important role in the manufacturing industry. Machinists also are one of the primary occupations within the production occupation group, which has a significant annual deficit of entrants to job openings. The mean hourly wage for the occupation in the Omaha area in 2017 is $18.66. As seen in Table 4.8, 100.0 percent of businesses report that it is difficult to hire workers in this occupation.

Table 4.8 also shows the reasons for difficulty in hiring according to Omaha area businesses which hire machinists. Labor availability is the key challenge. One hundred percent of employers indicate that hiring is difficult because there are not enough applicants, and 33.3 percent indicate it is difficult to find applicants who can work required shifts. Work experience, occupation-specific skill and worker quality also are a challenge. One hundred percent of business indicate that it is difficult to hire because applicants lack occupation-specific skills and because applicants lack work experience. Further, all employers require applicants to have work experience, with 66.7 percent requiring at least one year of experience. Two-thirds of employers indicate that it is difficult to hire because applicants have a poor work history and 33.3 percent indicate challenges because applicants cannot pass a background check.

Data on annual openings and entrants for machinists suggest an imbalance. As seen in Table 4.8, there are 48 projected openings in this occupation each year in the Omaha area. At the same time, no students graduate each year from Machine Tool Technology/Machinist Associate's Degree or Certificate programs at an Omaha area community college, although there are 7 annual Certificate program graduates at nearby Northeast Community College. Further, the survey of Omaha area households indicates that there are no former machinists from the Omaha area who report an interest in re-entering the workforce.

These findings suggest a need to increase both the number and experience level of machinists in the Omaha area. More individuals should be encouraged to study machine tool technology at area community colleges. For example, employers might encourage reliable, but less skilled workers at their business to seek such training, perhaps through tuition assistance or allowing workers to attend class during work hours. The state of Nebraska or local agencies could potentially support such efforts by sharing tuition or other costs with employers. Employers also should be encouraged to hire less experienced workers. The state of Nebraska or local agencies could participate through temporary wage subsidies to businesses which hire new graduates. At the same time, workers in this occupation should avoid behaviors that can negatively impact their work history or make it difficult to pass a background check.

Table 4.8
Key Findings for the Machinists Occupation

Occupation	Machinists (SOC 51-4041)	All Occupations
Percent Indicating It is Difficult to Hire	100.0%	66.9%
Reasons for Difficulty in Hiring		
Lack of Experience	100.0%	47.4%
Poor Work History	66.7%	39.0%
Lack of Occupation-Specific Skills	100.0%	42.9%
Failed Background Check	33.3%	21.7%
Wage Demands Too High	33.3%	35.3%
Lack of Required Licenses/Certificates	0.0%	10.5%
Language Barriers	0.0%	5.2%
Not Enough Applicants	100.0%	72.7%
Availability for Shifts Required	33.3%	29.2%
Lack of Required Education	33.3%	8.2%
Overqualified	0.0%	5.5%
Citizenship/Work Authorization	0.0%	4.8%
Other	0.0%	10.1%
Average Annual Openings	48	
Graduates – Machine Tool Technology/Machinist		
Community College	0	
Seeking to Re-Enter the Workforce – In Occupation	0	
Minimum Experience Requirement		
No experience required	0.0%	39.3%
Experience required but less than 1 year	33.3%	26.0%
1 year or more experience required	66.7%	34.7%

Sources: *Omaha Area Survey of Hiring and Training Needs*, *Omaha Area Labor Availability Survey, IPEDS,* United States Department of Education and Labor Market Information, Nebraska Department of Labor and Labor Market Information, Iowa Workforce Development