



PREPARED FOR
South Central Ohio Workforce Partnership



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Strategic Workforce Analysis

Ross County

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Executive Summary

The COVID-19 pandemic has impacted every industry around the globe, and workforce and economic developers are confronting new challenges and opportunities in addition to persistent economic and workforce trends. The Area 20 Workforce Development Board (“WDB”) of Fairfield, Hocking, Pickaway, Ross, and Vinton counties in Ohio works in partnership with the Chief Elected Officials of these counties to set the workforce policies for the region. This report and related reports for each of the five counties provide a comprehensive labor analysis of each locality and its labor shed. A better understanding of labor market conditions, particularly long-term trends and changes due to the COVID-19 pandemic, is needed to inform strategies and recommendations for the WDB in aligning workforce development efforts with the needs of local employers and opportunities for workers to thrive. Chmura Economics and Analytics (Chmura) and Thomas P. Miller and Associates (TPMA) were engaged to prepare this report.

This report presents the results of an analysis of labor data, interviews with key stakeholders, and a wage and benefit survey for Ross County.

Labor Shed—Regional Connectivity

Area 20 consists of the counties of Fairfield, Hocking, Pickaway, Ross, and Vinton, in Ohio. Commuting patterns indicate the workforce in each county is intertwined with other counties in the region as well as surrounding counties. When assessing a region’s workforce, it is important to consider the region’s labor shed, which reflects the geographic area from which firms attract their workers and where residents commute out of the region for work.

Ross County workers are primarily drawn from the counties of Jackson, Pike, and Vinton, as well as Lawrence further south thanks to the highways connecting the area. Workers also commute out of the county; most out-commuting is among those who live in Ross and work in Fayette, Pickaway, and Pike counties. For this analysis, the labor shed is defined at the zip code level to include these patterns.

Ross County is a net importer of talent, with nearly 8,300 workers leaving to work outside the region, compared with over 8,600 workers commuting into the region to work. Combining these two factors, the county gains a net 332 commuters on an average day.

Population and Demographics

Ross County is home to almost 77,000 people as of 2019, although over the past ten years the population has been declining while Ohio has grown. Chmura projects that the population of Ross County will experience slower growth than the rest of Ohio over the coming decade.

The population decline over the past ten years parallels declines in the labor force over the same period. Ross County’s labor force participation rate is low at just 53.1% as of 2019, compared with 63.2% in both the state and the nation.

The population of Ross County is slightly older, less diverse, and has a lower average level of education compared to the state of Ohio and the nation. Much of the recent population growth in Ross County discussed above has been from

increases in the minority population. The average educational attainment in Ross County is lower than both state and national averages. The median age in Ross County is 41, almost two years above the median in Ohio (39.4) and 3 years above the national median age of 39.4. Ross County has a greater percentage of the population with a disability (19.8%) than Area 20 (14.8%), the state (11.9%), and the nation (10.3%).

Employment – Industries and Occupations Poised for Growth

Following the Great Recession from 2007 to mid-2009 and prior to the COVID-19 pandemic and recession, employment grew at a faster rate in Ross County than in the labor shed. Employment in the area grew at an average annual rate of 0.6% from the fourth quarter of 2009 through the fourth quarter of 2019, slower than the 0.8% growth in Ohio and 1.3% rate in the nation. Unemployment in Ross County peaked at 13.2% in December 2009 during the height of the Great Recession, before declining to a low of 3.8% in November 2019. Due to the COVID-19 pandemic, the unemployment rate spiked to 12% in May 2020 and remains above pre-pandemic levels. As of December 2020, the unemployment rate in Ross County is 4.8%, compared with 5.7% in Ohio and 6.6% in the nation.

The largest industry sector in Ross County is health care and social assistance, employing 7,755 individuals with average annual wages of \$56,445. In the past five years, the sector has increased by 1,065 jobs, or an annual percentage increase of 3%. The second largest sector is manufacturing (4,067 employees with average annual wages of \$61,916), followed by retail trade (3,733 employees with average annual wages of \$29,729), accommodation and food services (2,809 employees with average annual wages of \$16,821), and Public Administration (2,242 employees with average annual wages of \$55,481). The fastest growing industries include accommodation and food services (4.5%), real estate and rental and leasing (3.6%), and administrative support and waste management and remediation services (3.0%).

Chmura identified 5 industries in Ross County that were poised for growth, including several industries within healthcare and social assistance, and manufacturing. Potential future growth industries included general medical and surgical hospitals, wired and wireless telecommunications carriers, vocational rehabilitation services, and skilled nursing facilities.

The occupation mix in a region follows the mix of industries. In Ross County, the largest occupation groups are production, office and administrative support, and healthcare practitioners and technical. Except for healthcare practitioners and technical occupations, the top five occupation groups all pay average annual wages below the regional average. Over the next five years, more than two-thirds (68%) of all openings are expected to be in occupation groups which pay below-average wages, led by food preparation and serving related (with demand of 2,575 workers total over the next five years). Total demand for production occupations, typically employed in the manufacturing sector, is expected to exceed 1,687 in Ross County and more than 6,100 in the labor shed over the next five years.

Overall, employment in Ross County is forecast to gradually decline over the next five years (-0.1% average annual growth). Sectors with the greatest expected total demand over the next five years include restaurants and other eating places, motor vehicle manufacturing, and general and medical surgical hospitals.

Training Pipeline

The number of graduates from postsecondary programs in a region defines the pipeline of future workers and the training capacity to support industry demand. In 2019, 1,239 individuals ages 18-24 (21% of the total population aged 18–24) were enrolled in college. awards requiring two years or less have been declining since 2010, while 4-year awards and higher have been growing.

In the 2019-2020 academic year, institutions in Ross County awarded 351 two-year awards. Between 2010 and 2019 the fastest growing program in Ross County over this period was allied health diagnostic, intervention, and treatment professions, which expanded 115% from 13 awards in 2010 to 28 in 2019. Other notable fast-growing programs include human development, family studies, and related services (+100.0%); allied health and medical assisting services (+93%); business administration, management and operations (+62%); and liberal arts and sciences, general studies and humanities (+17%).

The largest declines in awards from 2010 through 2019 in Ross County have occurred in those instruction programs that have been eliminated entirely, including somatic bodywork and related therapeutic services; electrical/electronics maintenance and repair technology; health and medical administrative services; communication disorders sciences and services; heavy/industrial equipment maintenance technologies; and human resources management and services. Most award gaps are driven by programs not offered within Ross County, but which may be filled by graduates from nearby institutions in the labor shed. The largest award gap in associate's degree occupations is for preschool teachers, except special education, with no awards granted but a projected demand

between 19 and 34. Computer and information systems managers top the list of potential awards gaps in occupations that typically require a bachelor's degree.

Housing—Affordability and Preference Trends and Mismatch

Housing stock that fits the community is important to retain and attract talent along with growing a community or region's economy. In Area 20, housing development is diverging down two paths. The more rural counties of Ross, Vinton, and Hocking all face declining population projections. The more rural areas also have lower incomes and market segmentation indicates residents desire different amenities and price points. Future housing development should be oriented around the composition of each group of counties, to ensure developments are at affordable price points and offer the desired amenities and feel of each community. In the income band encompassing the average regional wage (\$35,000 to \$49,999), an estimated 22% of homeowners and 12% of renters are cost-burdened in the Hocking-Ross-Vinton region, meaning they spend more than thirty percent of their income on housing.

The general trends observed in the region as a whole show affordability, aging housing stock, and a potential mismatch of preferences may indicate a gap in available housing options as certain segments of the population grow over the next five- to ten- year period.

Industry and Workforce Learning Sessions

The research team conducted five virtual "Industry and Workforce Learning Sessions" to gather information from leadership throughout the region's 5 counties. Nearly 40 employers and approximately 35 workforce, education, and community partner representatives attended.

The workforce, education, social service organizations, economic development leaders, and community partners from all five counties spoke to the strengths and weaknesses of the local workforce development system. Strengths identified were the board's strong engagement, its long-term commitment from members, different organizations strong willingness to collaborate, and the untapped resources available for training. Weakness identified were the decrease in job seeker visits due to COVID-19, limited access to technology and high-speed internet, lack of access to transportation, lack of childcare, and high turnover rates perceived to be caused by non-competitive wages.

Employers reported that their greatest needs were to fill open positions, particularly at the entry level and in light of COVID-19, to promote an understanding that college was not the only path to a good living, and to find more employers with soft skills including time management, work ethic, and interpersonal communication. Many said that they were not generally engaged with their workforce boards or Ohio Means Jobs (OMJs) and would love to learn more about them. In the future, they hope for greater coordination and better relationships with OMJs and OMJs could work with out-of-school youth and schools to foster a greater understanding of opportunities available to young people. When asked about practices for hiring underrepresented populations, the session participants were mostly quiet or struggled to answer the question.

Industry-Specific Workforce Needs Assessment

Manufacturing

Over 4,000 workers are employed in manufacturing in Ross County as of the third quarter of 2020. Half of the occupations have a declining growth forecast, reflecting an increasing trend of automation in the industry replacing demand for new workers. The largest gaps between skills employers request in job ads and what potential candidates list on their resumes relate to measurements, including tape measures, micrometers, multimeters, and gauges. There is also an indication of undersupply of computer proficiency in AS/400 database, Oracle JD Edwards, and Microsoft Office. Commuting patterns by occupation reveal residents are willing to travel outside of Ross County to earn higher wages in some occupations.

Healthcare

Nearly 7,800 workers are employed in healthcare and social assistance in Ross County as of the third quarter of 2020. All occupations have a positive growth forecast, reflecting the growing needs of an aging U.S. population. The largest gaps between skills employers request in job ads and what potential candidates list on their resumes relate to computer proficiency, including electronic medical record

systems (EMR System) and Microsoft Office. Commuting patterns by occupation reveal residents are willing to travel outside of Ross County to earn higher wages in some occupations.

Information Technology

More than 230 workers are employed in information technology industries in Ross County as of the third quarter of 2020. Most occupations have a declining growth forecast. Growth instead will be focused almost exclusively in software development and quality assurance, as well as information security. The largest gaps between skills employers request in job ads and what potential candidates list on their resumes relate to specific programming environments and languages, including Amazon Web Services (AWS), Docker, Ruby on Rails, PostgreSQL, Scrum, Agile, AngularJS, SaaS, and Microsoft Azure. Pre-pandemic, computer user support specialists were willing to commute for work in counties with an average entry-level wage of \$17.04 for that occupation, or 86 cents greater than the average entry-level wage in Ross County for that occupation.

Construction

More than 1,100 workers are employed in construction in Ross County as of the third quarter of 2020. Growth in these occupations is expected to be mixed, with some occupations projected to have positive growth while others will have negative growth. The largest gaps between skills employers request in job ads and what potential candidates list on their resumes are in reading schematics, personal computers (PCs), carpentry, and boilers. Pre-pandemic, construction laborers willing to commute outside their home counties work in counties with an average entry-level wage of \$14.26 for that occupation, or \$1.08 greater per hour than the average entry-level wage in Ross.

Transportation/Logistics

Over 1,100 workers are employed in transportation and logistics industries in Ross County as of the third quarter of 2020. The warehousing and storage industry has been expanding rapidly in the labor shed region and the industry is expected to continue to grow at an average annual rate of 0.5% in Ross County. Most of these occupations have a positive growth forecast. The largest gaps between skills employers request in job ads and what potential candidates list on their resumes relate to warehouses, including material handling, warehousing, and pallet jacks. There is also an indication of undersupply of automotive maintenance and repair, manufacturing, calculators, and computer proficiency in Oracle JD Edwards. Pre-pandemic, laborers and freight, stock, and material movers willing to commute out of their home counties work in counties with an average entry-level wage of \$11.07 for that occupation, 69 cents greater than the average entry-level wage for that occupation in Ross.

Wage and Benefit Survey

The Area 20 Workforce Development Region Wage and Benefit Survey was distributed to employers in the Area 20 region and surrounding areas to collect feedback from employers on the available job openings in their organization and their structures surrounding wages and benefits for these positions. A total of 136 individuals responded to the survey.

Employer wage differentials varied for 2nd and 3rd shifts, with wage differentials being as high as an extra \$3.50 per hour to as little as an extra \$0.15 per hour for off shifts. Of employers who offered multiple shifts, over half (68.2%, 88) reported their company did not offer wage differentials for off shifts, while 29.5% (38) reported they did. Nearly three quarters (71.4%, 95) of employers shared their company's work week schedule consisted of a five-day work week.

The most common benefits identified by employers included paid holidays (83.1%, 113), health insurance (79.4%, 108), life insurance (72.8, 99), and paid time off (71.3%, 97). Nearly half (48.1%, 63) of respondents reported their company does not currently have a policy around annual wage increases, while 41.2% (54) reported their company does have an annual wage increase. A total of 10.7% (14) of respondents were unsure if a policy existed. Nearly half (49.3%, 67) of respondents reported their company offers wage increases each year. Difficulties respondents encountered included a lack of skilled workers and attracting and/or retaining employees due to the low or inconsistent wages or salaries their company offers.

Recommendations

Develop strategies to create actions plans for implementing the recommendations in this report.

Finding New Workers: Ross County strategies to recruit new hires into entry level positions could include expanding job fairs, increasing employment of those with disabilities, and encouraging delayed retirement. By expanding the currently offered job fairs in person or virtually and including fairs for high school students only (with specific emphasis toward CTE students), employers increase the opportunity to grow their workforce. Increasing the number of individuals with disabilities participating by 1% would increase the number of available workers by 280 and therefore, Ross County should reach out to the agencies and organizations that work with these individuals to promote job opportunities. Increasing the percentage of workers who delay retirement and participate to age 65 by 1 percentage point would add more than 450 workers, allowing this population to mentor new hires or take on part-time employment.

Training for new and incumbent workers: Ross County could use funding or braid funding from other sources for pre-employment training, on-the-job training, and incumbent worker training. Business service reps need to reach out to employers in a variety of ways to contact the proper person at the business and assess their training needs for new hires and incumbent workers. The business service reps need to connect with work-based learning (WBL) coordinators in secondary and post-secondary schools to connect students and employers. This could provide pre-apprenticeships, apprenticeships, and other WBL and earn and learn opportunities. It also brings to the forefront a strategy to retain the knowledge of employees on the cusp of retirement by placing those employees with new hires as mentors.

Addressing barriers: When an individual has a barrier to employment, Ross County has an opportunity to address that barrier and provide the individual a chance to become gainfully employed. For example, Ross County can work closely with transportation providers and employers to produce solutions related to times the buses run and the routes they cover. During focus group discussions for this report, employers stressed the importance of individuals understanding that marijuana is a drug that is a barrier to employment. Informational videos and in-person sessions addressing why marijuana use is detrimental to a business could be created and used at OMJ centers, during job fairs, etc.

Utilizing collaborative relationships: Ross County can work more closely with local, regional, state, and federal funders to address the hiring, training, and retention needs of employers, as well as addressing barriers to employment. Then, act as a convener for employers and schools to address entry employment and skills gaps. Area 20, and Ross County specifically, can assist training providers in making sure the programs and certifications offered are aligned with the needs of local employers. If coordinated by county, there is a greater opportunity for education providers to be able to put cohorts together so that training classes are large enough to run.

Engagement between workforce development boards/OMJs and employers: Since business representatives from the various OMJ meet on a consistent basis to share best practices of employment engagement, the recommendation is to develop a plan for continuous improvement for ongoing outreach to employers. Improvements may include increasing bandwidth for this engagement and simplifying offerings to assist businesses in navigating the workforce system and Utilizing Sector Strategies built around key industry partnerships may provide a way forward.

1. Introduction

The Area 20 Workforce Development Board (“WDB” or “Board”) of Fairfield, Hocking, Pickaway, Ross, and Vinton counties in Ohio works in partnership with the Chief Elected Officials (CEOs) of these counties to set the workforce policies for the region. Each county has a CEO that comprises the five-person CEO Consortium. The Fairfield County Office of Economic and Workforce Development serves as the Administrative and Fiscal Agent for the Area 20 WDB.

This report and related reports for each of the five counties provide a comprehensive labor analysis of each locality, its labor shed, and the training requirements of its in-demand jobs. A better understanding of these conditions, particularly long term trends and changed due to the COVID-19 pandemic, inform strategies and recommendations for the WDB in aligning workforce development efforts with the needs of local employers and opportunities for workers to thrive. Chmura Economics and Analytics (Chmura) and Thomas P. Miller and Associates (TPMA) were engaged to prepare this report. The approach taken blends secondary data collected through government surveys and labor market databases with on-the-ground knowledge gathered from a wage and benefit survey and virtual workforce learning sessions.

The Area 20 Workforce Development Region Wage and Benefit Survey was distributed to employers in the Area 20 region and surrounding areas to collect feedback from employers on the available job openings in their organization and their structures surrounding wages and benefits for these positions. The survey was distributed via a link that was sent in mass distribution emails and newsletters to employers and workforce boards in the region. The survey was open for three weeks through March and April and collected responses from 136 individuals.

TPMA conducted five virtual Industry and Workforce Learning Sessions to gather information from leadership in Fairfield, Hocking, Pickaway, Ross, and Vinton Counties. Vinton and Hocking Counties’ sessions were combined, and one session was hosted for employers only. Nearly 40 employers and approximately 35 workforce, education, and community partner representatives attended. Some employers and several workforce, education and community partners attended multiple sessions.

The survey and learning sessions are summarized in sections 4 and 6 of the report, with additional details recorded in the appendix.

2. Commuting and Labor Shed Analysis

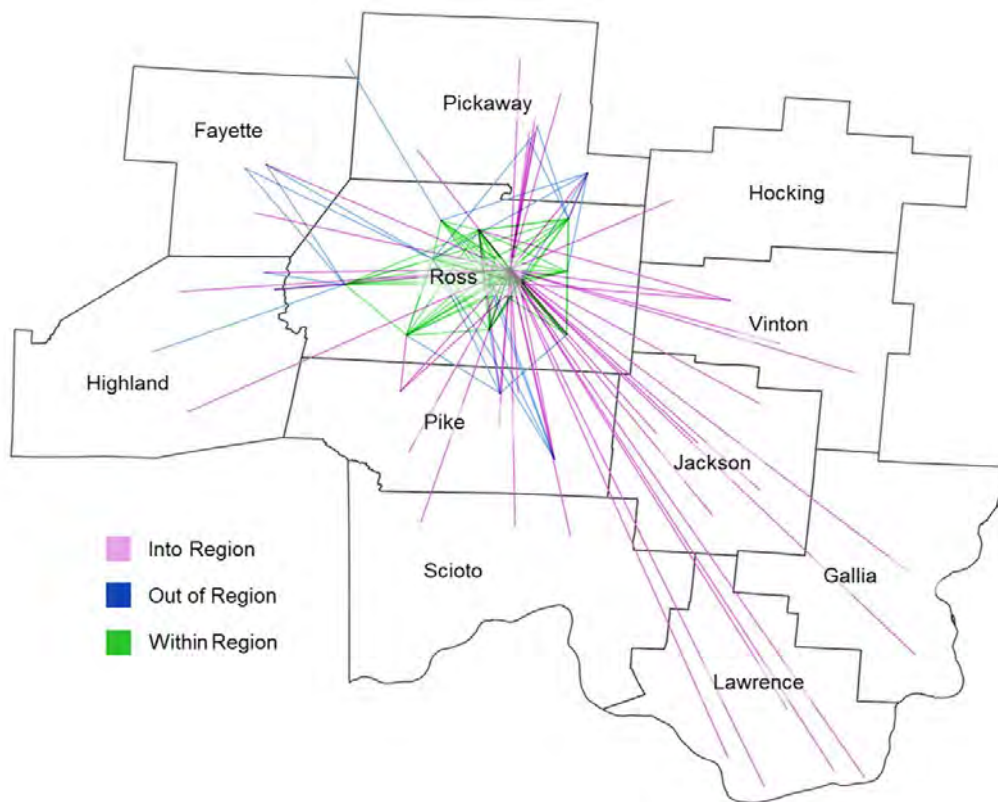
2.1 Commuting Patterns

A region's labor shed reflects the geographic area from which firms draw their workers. Consequently, when attracting firms to the region it is important to include the skills of all potential workers even if they reside outside of Ross County.

It is also important to know the skills of out-commuting residents. If citizens are commuting into neighboring regions to gain employment, then this could become an opportunity to attract the industries that would employ them in Ross County. In addition, it is important for local training providers and educators to consider the skills needed in nearby regions when developing their instructional programs.

Commuting data show Ross County region draws workers from several of the surrounding areas, particularly from counties to the south and east. Figure 2.1 shows commuting between census tracts, with lines representing at least 30 commuters between two locations and darker lines indicating more commuters. Purple lines indicate commuters coming into the county. Workers are primarily drawn from the counties of Jackson, Pike, and Vinton, as well as Lawrence further south thanks to the highways connecting the area. There is also substantial movement within the region, indicated by green lines. Finally, workers also commute out of the county; as shown by the blue lines, most out-commuting is among those who live in Ross and work in Fayette, Pickaway, and Pike counties.

Figure 2.1: Ross County Commuting Patterns



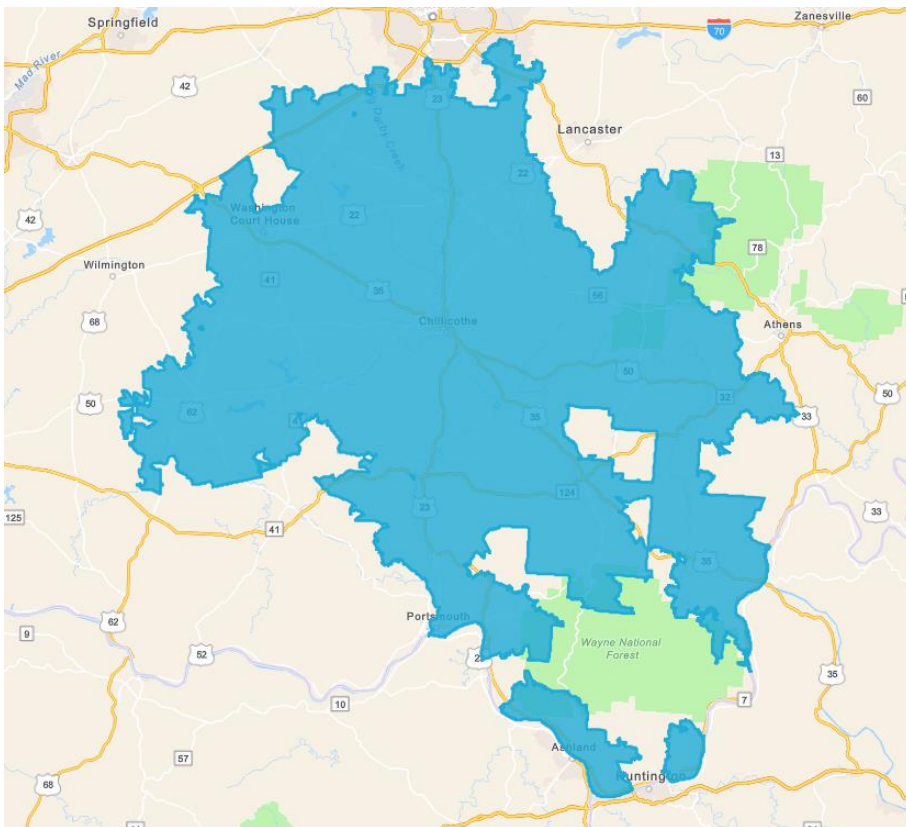
Source: U.S. Census Bureau, LEHD 2018 Chmura

The commuting data suggest the labor shed should include the county plus parts of the surrounding areas with strong commuting ties. Zip Code Tabulation Area¹ (ZCTA)-level data shown in Figure 2.2 provide a more precise measure for labor shed analysis as they are smaller geographic units than counties. The selected ZCTAs represent a thirty-minute drive-time from

¹ ZIP Code Tabulation Areas are generalized areal representations of United State Postal Service (USPS) ZIP codes. They are more precise than county-level data. For more information on ZCTA's, see <https://www.census.gov/geo/reference/zctas.html>.

the center of the county for ZCTA's included in the Area 20 labor shed. Unless otherwise specified in this report, the Ross Labor Shed (or "labor shed") refers to this ZCTA definition. A list of ZCTAs included in this definition is provided in the appendix.

Figure 2.2: Ross County Labor Shed



Source: JobsEQ by Chmura

2.2 Commuting by Occupation

Ross County is a net importer of talent, with nearly 8,300 workers leaving to work outside the region, compared with over 8,600 workers commuting into the region to work. Combining these two factors, the county gains a net 332 commuters on an average day. However, most workers (more than 21,507) live and work within the county. Figure 2.3 summarizes these commuting dynamics (note that arrows do not indicate commuting direction, only generally into or out of the region).

Commuting patterns vary by occupation, but the region has more workers commuting out than in across nine of 22 occupation groups. The largest groups commuting out are transportation and warehousing (1,081), production (943), and office and administrative (872) occupations. By occupation group, Ross County draws in healthcare practitioners and technical (908), production (769), and office and administrative support (731) occupations. As shown in Table 2.1 below, average annual wages for production occupations (primarily working in manufacturing) and transportation and material moving occupations are slightly higher in the labor shed region than in Ross County, offering an incentive for workers to commute out. Additional details on out-commuting by occupation are included in the industry-specific workforce needs assessment.

Figure 2.3: Ross County Commuting

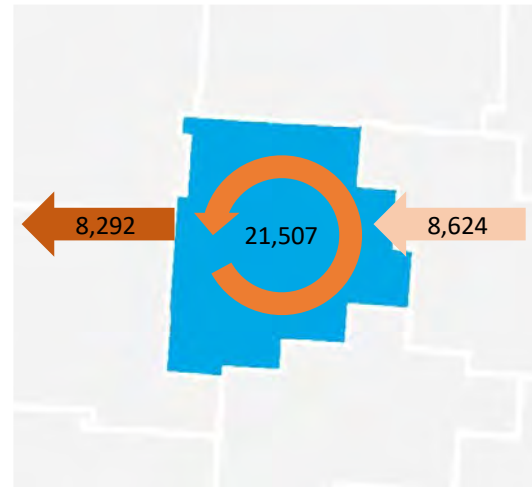


Table 2.1: Commuting by Occupation Group

Occupation Group	Commute In	Commute Out	Net	Average Annual Wages	
				Ross County	Labor Shed
Transportation and Material Moving Occupations	561	1,081	-520	\$34,600	\$35,000
Construction and Extraction Occupations	331	791	-460	\$50,100	\$48,800
Installation, Maintenance, and Repair Occupations	314	621	-307	\$46,100	\$44,500
Production Occupations	769	943	-175	\$33,900	\$36,000
Office and Administrative Support Occupations	731	872	-141	\$36,900	\$36,300
Building and Grounds Cleaning and Maintenance Occupations	148	271	-123	\$31,200	\$29,900
Food Preparation and Serving Related Occupations	393	470	-77	\$22,800	\$22,300
Sales and Related Occupations	508	548	-40	\$34,800	\$34,700
Farming, Fishing, and Forestry Occupations	20	21	-1	\$35,500	\$33,400
Personal Care and Service Occupations	114	96	18	\$26,900	\$26,800
Legal Occupations	56	27	29	\$90,800	\$86,400
Healthcare Support Occupations	405	342	63	\$29,000	\$27,200
Protective Service Occupations	290	224	67	\$47,600	\$46,700
Life, Physical, and Social Science Occupations	111	29	82	\$69,100	\$65,200
Computer and Mathematical Occupations	165	74	92	\$69,800	\$70,600
Educational Instruction and Library Occupations	368	267	100	\$52,100	\$51,700
Arts, Design, Entertainment, Sports, and Media Occupations	137	36	101	\$52,300	\$49,800
Architecture and Engineering Occupations	167	63	104	\$80,400	\$76,700
Management Occupations	447	283	164	\$90,600	\$88,000
Business and Financial Operations Occupations	395	189	206	\$64,700	\$64,200
Community and Social Service Occupations	326	109	217	\$48,200	\$44,900
Healthcare Practitioners and Technical Occupations	908	442	466	\$73,500	\$71,400

Source: JobsEQ by Chmura

3. Regional Economic Assessment

3.1 Population and Labor Force

Ross County is home to almost 77,000 people as of 2019, although over the past ten years the population has been declining while Ohio has grown. Since 2009, the population in the area has declined at an average annual rate of 0.2%, compared with a growth rate of 0.1% in Ohio; both rates trail the average annual population growth in the nation over this period (0.7%). Chmura projects that the population of Ross County will experience slower growth than the rest of Ohio over the coming decade. While population growth estimates are not available for the labor shed region, the labor shed population is estimated at more than 458,000 as of 2019.

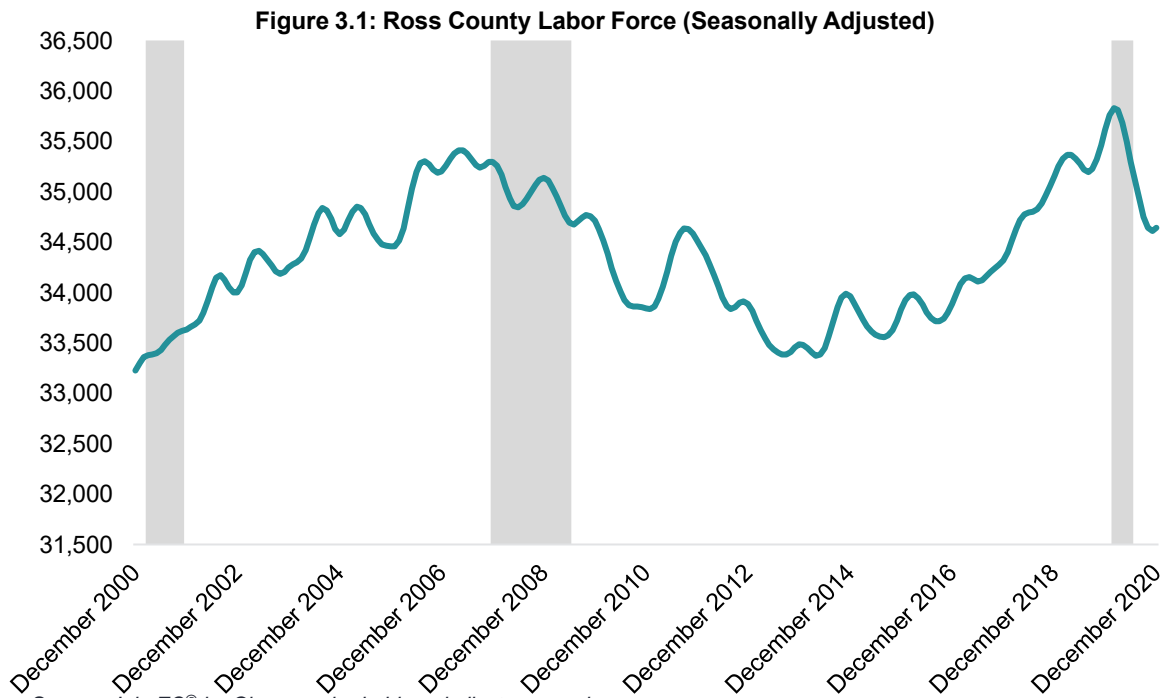
Table 3.1: Population Growth

Region	Population 2019	Population Average Annual Growth 2009-2019	Population Average Annual Growth 2020-2030
Ross County	76,666	-0.2%	0.02%
Ross County Labor Shed*	458,158	—	—
Ohio	11,689,100	0.1%	0.3%
USA	328,239,523	0.7%	0.7%

Source: JobsEQ®

*Labor shed data are from ACS 2015-2019, all other data are from Census 2019 and JobsEQ®

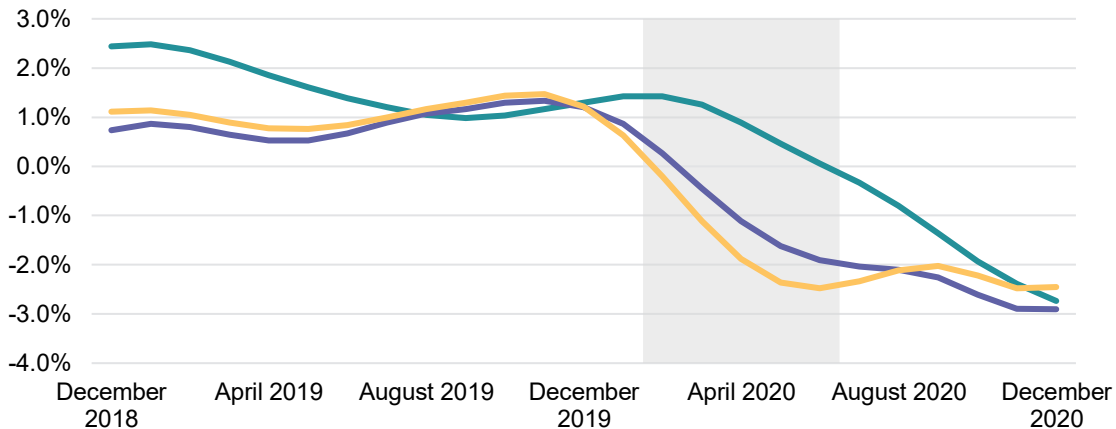
The labor force participation rate measures an economy’s active workforce, where a higher labor force participation rate indicates a greater share of the civilian population aged 16 and over is willing to work. The population decline over the past ten years parallels declines in the labor force over the same period. As the unemployment rate dropped and the labor market tightened between 2015 and 2019, Ross County’s labor force decreased, suggesting more of the population exited the workforce or were drawn to other counties for higher wages and better recruitment and matching to jobs. Ross County’s labor force participation rate is low at just 53.1% as of 2019, compared with 63.2% in both the state and the nation. The region’s labor force reached a peak of 35,829 in February 2020 before dropping due to the COVID-19 pandemic. As of December 2020, the labor force had declined to 34,641 workers, or 3% smaller than the pre-pandemic high.



Source: JobsEQ® by Chmura, shaded bars indicate recessions

The size of the labor force in Ross County dropped later and more gradually due to the pandemic than in the state and the nation, as shown in Figure 3.2 below. Prior to the pandemic, the labor force in Ross County was growing at a faster pace than the state and nation, averaging 1.5% growth year-over-year for 2019. The year-over-year change in the size of the labor force peaked at 2.5% growth in January 2019 before dropping to a decline of 2.7% in December 2020, compared with 1.8% in Ohio and 2.3% in the United States in the same month.

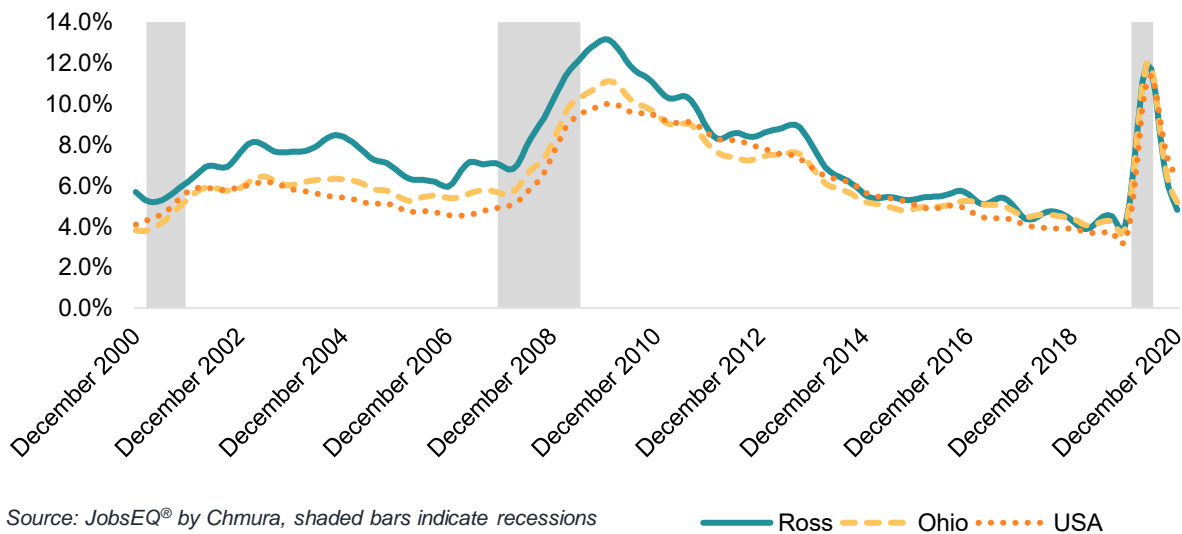
Figure 3.2: Percent Change in Labor Force, Year-Over-Year



Source: JobsEQ® by Chmura, shaded bars indicate

The unemployment rate is a measure of the health of the local labor market and economic activity, but like labor force size, does not include people who are not actively looking for work. The unemployment rate in Ross County closely follows the unemployment rate in the state and the nation. Unemployment in Ross County peaked at 13.2% in December 2009 during the height of the Great Recession, before declining to a low of 3.8% in November 2019. Due to the COVID-19 pandemic, the unemployment rate spiked to 12% in May 2020 and remains above pre-pandemic levels. As of December 2020, the unemployment rate in Ross County is 4.8%, compared with 5.7% in Ohio and 6.6% in the nation.

Figure 3.3: Unemployment Rate (Seasonally Adjusted)



Source: JobsEQ® by Chmura, shaded bars indicate recessions

— Ross — Ohio USA

3.2 Demographic Characteristics

The population of Ross County is slightly older, less diverse, and has a lower average level of education compared to the state of Ohio and the nation. Much of the recent population growth in Ross County discussed above has been from increases in the minority population. In the latest estimate from 2019, more than 90% of the population in Ross County is White, while only 5.3% is Black. In comparison, 81.5% of the population of Ohio, and 72.7% of the U.S. population, is White. Asian, and some other race account for less than 1% each, while two or more races account for 3.3% of the population in Ross County. Hispanics or Latinos, an ethnicity which crosses all races, account for 1.3% of the population. The fastest growing cohorts over the last five years have been the Hispanic or Latino population (24.9%), followed by Asian (23.7%), and Two or More Races (12.2%).

Table 3.2: Demographic Characteristics

Race	2019 Population	2019 Percentage of Population	2014-2019 Percent Growth
White	69,541	90.4%	-1.1%
Black	4,050	5.3%	4.3%
Asian	392	0.5%	23.7%
Two or More Races	2,557	3.3%	12.2%
Some Other Race	421	0.5%	-22.5%
Hispanic or Latino (of any race)	978	1.3%	24.9%

Source: JobsEQ by Chmura, ACS 5-Year Estimates

The average educational attainment in Ross County is lower than both state and national averages. The share of the population in Ross County with no high school diploma is 11.0%, greater than 8.2% in the state and the 10.9% average in the nation. A greater share of Ross County's population has a high school diploma or equivalent (42%), some college, no degree (21.2%) or an associate's degree (9.7%) compared with the state and the nation. However, only 16.1% of the population has a bachelor's degree or higher, compared with 30.2% in the state and 33.5% in the nation.

The median age in Ross County is 41, almost two years above the median in Ohio (39.4) and 3 years above the national median age of 38.1. Notably, the region has a lower share of younger age cohorts, particularly 18 to 24 years (7.7%), and 25 to 34 years (12.7%). This is consistent with national trends of younger workers leaving rural areas for cities and metro areas with potentially more work opportunities and amenities.

Table 3.3: Demographic Profile

	Percent				Value			
	Ross County	Ross Labor Shed	Ohio	USA	Ross County	Ross Labor Shed	Ohio	USA
Median Age	—	—	—	—	41.0	40.6	39.4	38.1
Under 18 Years	21.5%	22.6%	22.4%	22.6%	16,541	103,383	2,605,010	73,553,240
18 to 24 Years	7.7%	8.1%	9.2%	9.4%	5,893	36,902	1,074,610	30,903,719
25 to 34 Years	12.7%	13.0%	13.1%	13.9%	9,801	59,424	1,521,875	44,567,976
35 to 44 Years	13.2%	12.5%	11.9%	12.6%	10,169	57,260	1,391,747	40,763,210
45 to 54 Years	14.5%	13.6%	13.0%	13.0%	11,193	62,141	1,514,333	42,589,573
55 to 64 Years	14.2%	13.7%	13.8%	12.9%	10,962	62,869	1,606,528	41,286,731
65 to 74 Years	9.4%	9.6%	9.6%	9.1%	7,248	44,163	1,116,639	28,535,419
75 Years, and Over	6.7%	7.0%	7.1%	6.5%	5,141	32,016	824,655	20,703,162
Race: White	90.4%	91.1%	81.3%	72.5%	69,541	417,183	9,476,047	234,904,818
Race: Black or African American	5.3%	5.2%	12.4%	12.7%	4,050	23,889	1,446,193	40,916,113

Table 3.3: Demographic Profile

	Percent				Value			
	Ross County	Ross Labor Shed	Ohio	USA	Ross County	Ross Labor Shed	Ohio	USA
Race: American Indian and Alaska Native	0.0%	0.2%	0.2%	0.8%	10	778	22,816	2,699,073
Race: Asian	0.5%	0.7%	2.2%	5.5%	392	3,258	258,199	17,574,550
Race: Native Hawaiian and Other Pacific Islander	0.0%	0.0%	0.0%	0.2%	19	101	3,880	582,718
Race: Some Other Race	0.5%	0.4%	1.0%	4.9%	379	1,715	112,836	15,789,961
Race: Two or More Races	3.3%	2.5%	2.9%	3.3%	2,557	11,234	335,426	10,435,797
Hispanic or Latino (of any race)	1.3%	1.5%	3.8%	18.0%	978	6,866	443,415	57,517,935
Economic								
Labor Force Participation Rate and Size (civilian population 16 years and over)	53.1%	55.8%	63.2%	63.2%	33,089	204,410	5,909,927	163,555,585
Prime-Age Labor Force Participation Rate and Size (civilian population 25-54)	68.7%	74.5%	82.7%	82.1%	21,380	133,068	3,658,075	104,634,905
Median Household Income	—	—	—	—	\$51,092	\$51,400	\$56,602	\$62,843
Per Capita Income	—	—	—	—	\$24,913	\$25,739	\$31,552	\$34,103
Mean Commute Time (minutes)	—	—	—	—	25.8	26.8	23.7	26.9
Commute via Public Transportation	0.8%	0.5%	1.6%	5.0%	256	971	86,636	7,641,160
Occupied Housing Units with No Vehicle Available (% of Occupied Units)	6.2%	6.7%	7.9%	8.6%	1,779	11,768	371,575	10,395,713
Educational Attainment, Age 25-64								
No High School Diploma	11.0%	11.4%	8.2%	10.9%	4,649	27,462	495,162	18,550,150
High School Graduate	42.0%	40.0%	30.8%	25.7%	17,689	96,638	1,860,043	43,627,868
Some College, No Degree	21.2%	20.4%	21.0%	20.7%	8,915	49,351	1,268,705	35,174,790

Table 3.3: Demographic Profile

	Percent				Value			
	Ross County	Ross Labor Shed	Ohio	USA	Ross County	Ross Labor Shed	Ohio	USA
Associate's Degree	9.7%	9.8%	9.7%	9.1%	4,085	23,737	586,502	15,526,064
Bachelor's Degree	10.6%	11.8%	19.2%	21.2%	4,474	28,561	1,160,444	35,997,848
Postgraduate Degree	5.5%	6.5%	11.0%	12.3%	2,313	15,691	663,627	20,961,560
Social								
Poverty Level (of all people)	17.3%	16.9%	14.0%	13.4%	12,307	74,272	1,588,343	42,510,843
Households Receiving Food Stamps/SNAP	21.3%	19.6%	13.1%	11.7%	6,127	34,353	612,607	14,171,567
With a Disability, Age 18-64	19.8%	18.1%	11.9%	10.3%	8,492	48,306	834,506	20,187,604
With a Disability, Age 18-64, Labor Force Participation Rate and Size	36.4%	34.3%	42.1%	42.2%	3,094	16,549	351,593	8,509,463

Source: *JobsEQ by Chmura, ACS 2014-2018*

For another lens of diversity in the region, the share of employment by race reveals some minor disparities when compared with the state. Though 90.4% of the population is White, 93.4% of total employment in Ross County is held by White workers. The 3-percentage point difference is greater than the 2.6 percentage point difference in the state. Black and Hispanic or Latino (of any race) percentages of the population and the workforce experience comparable discrepancies to those in the state.

Table 3.4: Percent of Population and Employment by Race and Ethnicity

	Ross County		Ohio	
	Percent of Population	Percent of Employment	Percent of Population	Percent of Employment
White	90.4%	93.4%	81.3%	83.9%
Black	5.3%	3.7%	12.4%	11.5%
Asian	0.5%	0.8%	2.2%	2.4%
Some Other Race	0.5%	N/A	1.0%	n/a
Two or More Races	3.3%	2.0%	2.9%	1.9%
Hispanic or Latino (of any race)	1.3%	1.3%	3.8%	3.5%

Source: *Chmura, ACS 2015-2019*

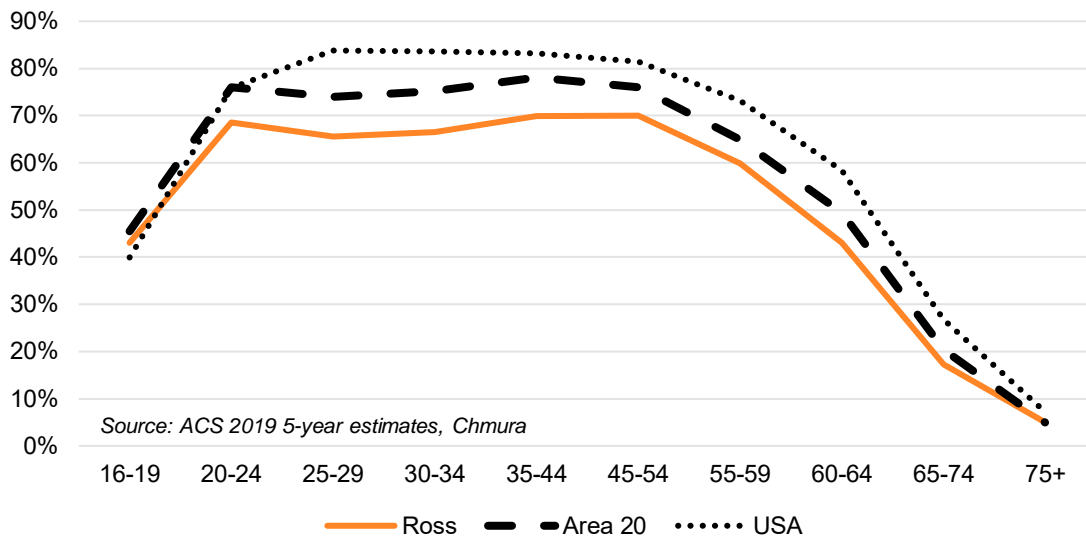
Labor Force Participation

Labor force participation in Ross County is much lower than that in the state or the nation. In the civilian population ages 16 and over, only 53.1% are working or unemployed and looking for work, compared with 63.2% in both Ohio and the nation. Similarly, for the prime-age labor force (ages 25-54), only 68.7% are participating, below the 82.4% participation rate in the state and 81.8% in the United States. Lower labor-force participation rates are common in Appalachian regions and bordering counties, and participation rates have been declining across the nation for decades for various reasons. Disabilities which make it more difficult to find work with accommodations are a contributing factor, and Ross County has a greater percentage of the population with a disability (19.8%) than Area 20 (14.8%), the state (11.9%), and the nation (10.3%). Among those with a disability, labor force participation is particularly low in Ross County, at just 36.4% compared with 37.5% in Area 20 and about 42% in the state and nation. Other contributing factors identified in Ohio include the age of the population and retirements of Baby Boomers, as

well as declining demand for workers with lower educational attainment.² Abuse of opioids and other drugs can also make it more difficult to secure and maintain a job, though national studies find conflicting evidence of the extent of an opioid epidemic on labor force participation.³

By age, labor force participation in Ross is greater than the nation between ages 16 and 19, but trails below the nation for all older age groups. Participation is particularly low for ages 25 to 54, with the lowest participation rates among those between the ages of 30 to 34. Increasing participation in the population 30 to 34 by 1 percentage point would add 48 workers in Ross. Following the national trend, participation also drops off as workers near retirement from age 55 and up. Increasing the percentage of workers who push back retirement and participate to age 65 by 1 percentage point would add 109 workers in Ross.

Figure 3.4: Participation Rates by Age and County



By sex, the male and female labor force participation rates in Ross have a 4.9 percentage point difference, with females more likely to participate. The male participation rate is 62.6%, compared with the female rate of 67.5% for the population aged 20-64. In the state, the participation rate is 82.3% for men and 75.1% for women. In other words, women in Ross are participating about 7.6 percentage points below the state average, while males in Ross are participating almost 20 percentage points lower. Increasing male participation by 1 percentage point would add 254 workers in the region.

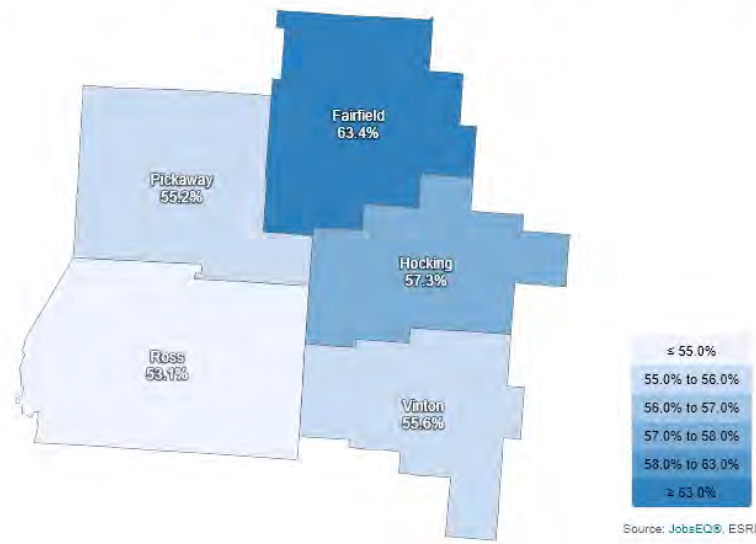
By educational attainment, Ross residents participate at lower rates across all levels, but the gaps are more pronounced at lower levels of education. Individuals with less than a high school diploma participate in the labor force the least in Ross, at only 37.4%, significantly lower than in the state (54.8%). Those with a high school diploma or equivalent participate at a rate of 59.7% in Ross, compared with 72.4% in the state. Those with some college participate at a rate of 69.8%, again below the state's rate of 81.1%. Finally, individuals with a bachelor's degree or higher participate at 84.8%, less than four percentage points below the 88.5% rate in the state. Increasing the participation among individuals with a high school diploma or equivalent by 1 percentage point would add 176 workers in Ross. If 1% of those currently without a high school diploma earned one and participated at the current rate for high school graduates, it would add 28 workers in Ross.

² Source: <https://ohiolmi.com/portals/206/researchpublications/publications/nonparticipation.pdf>

³ See for example, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6364990/> which finds retirements and trends prior to the Great Recession can account for most of the decline in the labor force participation rate, and <https://www.bls.gov/opub/mlr/2019/beyond-bls/does-increased-opioid-use-lead-to-declines-in-labor-market-participation.htm> which suggests resolving the opioid epidemic would increase labor force participation for males between 25-64 by more than 4 percentage points in counties with the highest prescription rates.

The ability to reliably travel to work is another key factor which contributes to labor force participation. Residents of Ross County have a relatively longer mean commute time of 25.8 minutes compared with 23.5 in the state and 26.6 in the nation, indicating they are willing to commute further for work, but also that commuting may be a barrier to work. Owning and operating a vehicle is expensive with typical costs including maintenance, fuel, insurance, and financing. Only 0.8% of the population commutes via public transportation, much lower than 1.6% in the state, and an estimated 1,779 households do not have a vehicle available. These factors are also reflected in the spatial distribution of labor force participation by county, with generally higher participation in counties closer to employment opportunities in Columbus.

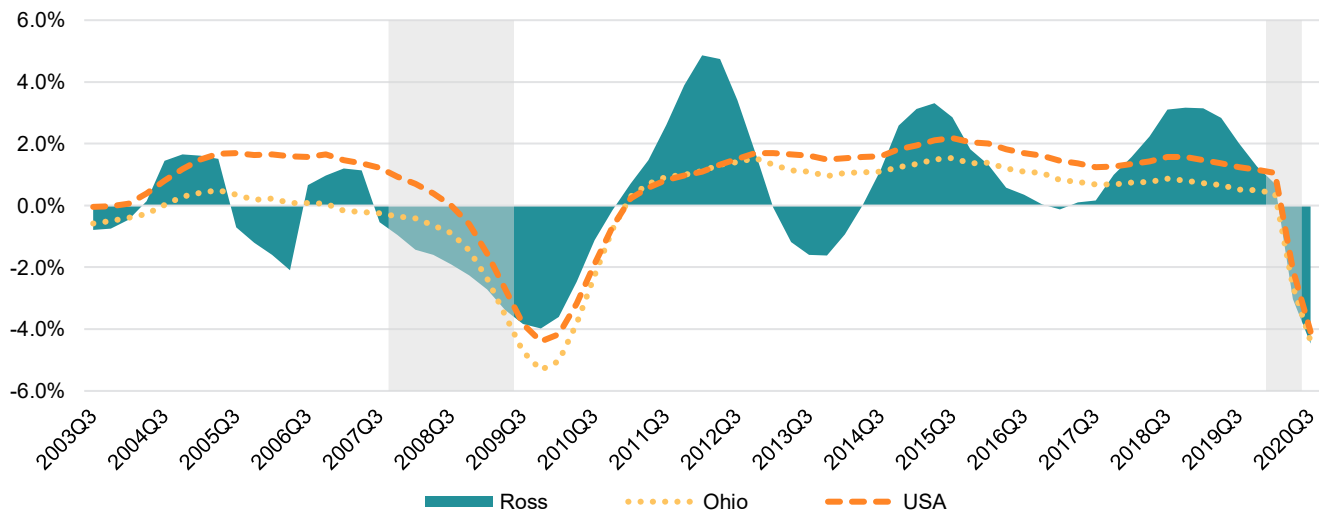
Figure 3.5: Labor Force Participation Rate (Civilian Population 16 years and Over)



3.3 Economic Trends

Employment growth is the broadest and timeliest indicator of a region’s overall economic health. Following the Great Recession from 2007 to mid-2009 and prior to the COVID-19 pandemic and recession, employment grew at a faster rate in Ross County than in the labor shed. Employment growth in Ross County was on par with growth in Ohio, but slower than national growth. Employment in the area grew at an average annual rate of 0.6% from the fourth quarter of 2009 through the fourth quarter of 2019, slower than the 0.8% growth in Ohio and 1.3% rate in the nation.

Figure 3.6: Employment Growth, Percent Change Year-Over-Year

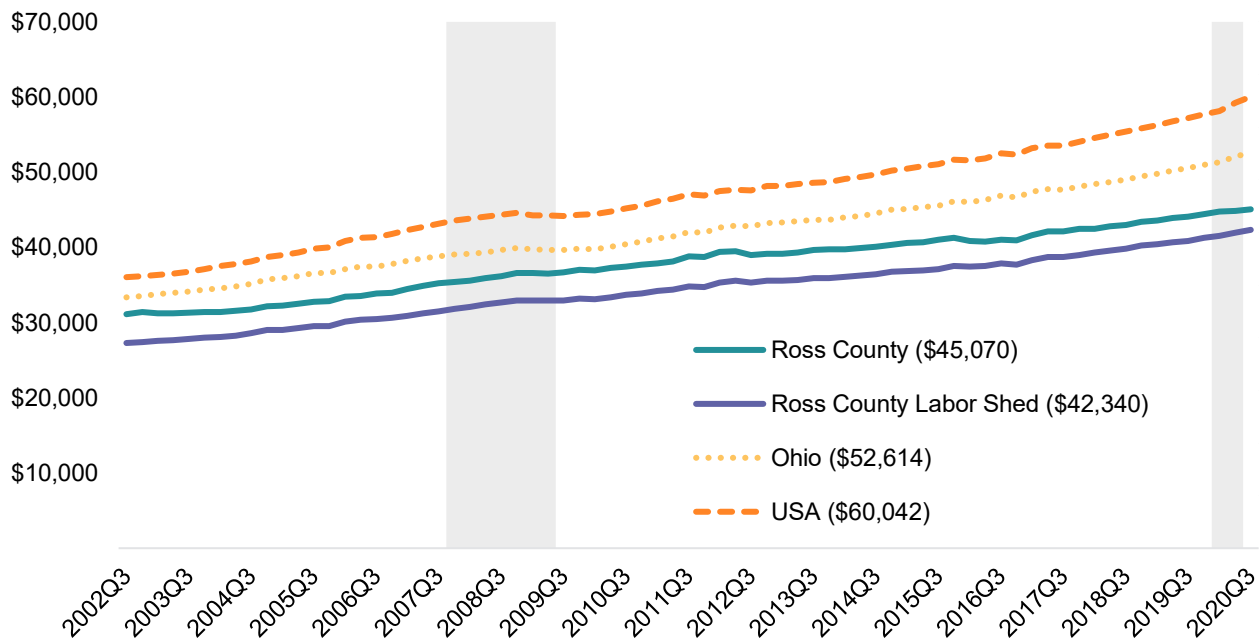


Based on preliminary data, at the peak of employment impacts due to the pandemic, employment in Ross County fell 7.5% over the year ending with the second quarter of 2020—better than the 11.5% drop in Ohio and the 11.4% drop posted in the nation over the same period. This is consistent with the pattern from the last recession in 2007 to 2009, where employment declined less in Ross County than in the state, or nation.

Average wages and wage growth indicate growing prosperity for residents of a region and greater ease of meeting living expenses. As of the third quarter of 2020, the average annual salary per worker in Ross County was \$45,070, lower than the state average salary of \$52,614 and the national average salary of \$60,042.⁴ However, the estimated cost of living in Ross County is lower than that of the state and nation, indicating relatively cheaper goods and services increase the purchasing power in Ross County, somewhat compensating for lower average wages.⁵ Ross County’s industry mix, with higher-than-average employment in low-wage sectors contributes to pulling down the region’s average wages.

Average annual wages per worker in Ross County have grown relatively slowly from 2010 to the third quarter of 2020. Over the past ten years ending with the third quarter of 2020, wages grew at an average annual rate of 1.9% in Ross County, below the 2.7% pace in Ohio and 2.9% rate for the nation. Average annual wages reached \$45,070 in the third quarter of 2020, about 6.4% lower than the average in the labor shed and almost 15% lower than the state average.

Figure 3.7: Average Annual Wages



Source: JobsEQ® by Chmura. Shaded bars indicate recessions.

The largest industry sector in Ross County is health care and social assistance, employing 7,755 individuals with average annual wages of \$56,445. In the past five years, the sector has increased by 1,065 jobs, or an annual percentage increase of 3%. The second largest sector is manufacturing (4,067 employees with average annual wages of \$61,916), followed by retail trade (3,733 employees with average annual wages of \$29,729), accommodation and food services (2,809 employees with average annual wages of \$16,821), and Public Administration (2,242 employees with average annual wages of \$55,481).

⁴ Unless otherwise stated, employment and wages are by place of work, not place of residence.

⁵ Using the U.S. cost of living as a base index of 100, the cost of living index in the Area 20 Region is 88.5, and that of Ohio is 92.8, as of the third quarter of 2020, indicating wages have greater purchasing power in Area 20, somewhat compensating for lower average wages. Cost of Living data per C2ER, imputed by Chmura where necessary.

Industry Mix

Over the five years leading up to the COVID-19 pandemic and recession, employment grew at an average annual rate of 1.5% in Ross County. The fastest growing industries were accommodation and food services (at an average annual rate of 4.5%), followed by real estate and rental and leasing (3.6%) and administrative support and waste management and remediation services (3.0%). The higher-paying professional, scientific, and technical services industry grew 0.6%. Significant decreases occurred in information (2.5%) and mining, quarrying, and oil and gas extraction (2.0%). In the labor shed, management of companies and enterprises was the fastest-growing industry, expanding at an average annual rate of 6.9%.

The impact of the pandemic shows in data for the five years ending with the third quarter of 2020. Gains in accommodation and food services were reduced, such that employment grew at an average annual rate of 1.4% and employment is actually lower in the labor shed than five years ago. Other industries impacted include arts entertainment, and recreation (-6.9% average annual decline), management of companies and enterprises (-6.9%), information (-7.4%), and manufacturing (-2.1%). Notably, healthcare and professional, scientific, and technical services expanded on pre-pandemic job gains in Ross County.

Table 3.5: Average Annual Percent Change in Employment

Industry	2014Q4-2019Q4		2015Q3-2020Q3	
	Ross	Labor Shed	Ross	Labor Shed
Accommodation and Food Services	4.5%	1.7%	1.4%	-0.3%
Real Estate and Rental and Leasing	3.6%	3.6%	1.0%	2.0%
Administrative and Support and Waste Management and Remediation Services	3.0%	0.6%	1.7%	0.0%
Health Care and Social Assistance	2.9%	1.4%	3.0%	1.1%
Wholesale Trade	2.2%	1.9%	-0.3%	1.0%
Transportation and Warehousing	1.9%	5.0%	1.7%	2.6%
Finance and Insurance	1.9%	-3.0%	1.2%	-4.2%
Construction	1.6%	0.3%	0.1%	-0.4%
Professional, Scientific, and Technical Services	0.6%	0.9%	1.0%	0.8%
Utilities	0.6%	0.6%	-0.9%	-0.2%
Public Administration	0.4%	0.4%	-0.1%	0.3%
Manufacturing	0.3%	0.4%	-2.1%	-1.1%
Educational Services	0.2%	0.1%	-0.1%	-0.3%
Retail Trade	-0.1%	0.4%	-1.8%	-0.7%
Other Services (except Public Administration)	-0.4%	-0.8%	-0.8%	-1.3%
Arts, Entertainment, and Recreation	-0.9%	1.3%	-6.9%	-2.5%
Management of Companies and Enterprises	-1.3%	6.9%	-6.9%	-0.4%
Mining, Quarrying, and Oil and Gas Extraction	-2.0%	-3.7%	-3.4%	-3.9%
Information	-2.5%	-4.7%	-7.4%	-5.9%
Agriculture, Forestry, Fishing and Hunting	0.8%	0.3%	-1.5%	-1.8%
Total - All Industries	1.5%	0.8%	0.2%	-0.1%

Source: JobsEQ[®] by Chmura

Looking ahead, the number of workers needed to fill openings in industries in Ross County include demand due to growth in the industry as well as demand to replace workers who leave the labor force (exits, including retirement) or who change occupations (transfers). Sectors with the greatest expected total demand over the next five years include health care and social assistance, manufacturing, retail trade, and accommodation and food services. Demand in the labor shed is roughly 4 times demand in Ross County, with relatively greater demand for transportation and warehousing, management of companies and enterprises, finance and insurance, and information.

Table 3.6: Industry Snapshot

NAICS	Sector	Current 2020Q3			5-Year Forecast	
		Employment	Average Annual Wages	LQ	Total Demand Ross County	Total Demand Labor Shed
62	Health Care and Social Assistance	7,755	\$56,445	1.75	3,919	16,204
31	Manufacturing	4,067	\$61,916	1.64	2,037	8,051
44	Retail Trade	3,733	\$29,729	1.21	2,314	11,553
72	Accommodation and Food Services	2,809	\$16,821	1.16	2,330	10,922
92	Public Administration	2,242	\$55,481	1.52	973	3,845
61	Educational Services	2,187	\$48,041	0.88	940	5,470
56	Administrative and Support and Waste Management and Remediation Services	1,153	\$24,164	0.61	654	4,212
48	Transportation and Warehousing	1,144	\$45,937	0.80	635	4,258
23	Construction	1,121	\$43,299	0.64	536	3,568
81	Other Services (except Public Administration)	892	\$19,896	0.68	508	3,211
42	Wholesale Trade	547	\$49,263	0.47	261	1,513
52	Finance and Insurance	508	\$51,546	0.41	225	1,301
11	Agriculture, Forestry, Fishing and Hunting	481	\$19,260	1.17	227	1,395
54	Professional, Scientific, and Technical Services	422	\$45,682	0.20	176	1,171
51	Information	253	\$48,662	0.42	101	422
22	Utilities	226	\$77,540	1.41	91	330
53	Real Estate and Rental and Leasing	209	\$39,170	0.40	97	693
71	Arts, Entertainment, and Recreation	198	\$29,811	0.38	149	667
55	Management of Companies and Enterprises	162	\$73,773	0.35	74	386
21	Mining, Quarrying, and Oil and Gas Extraction	23	\$38,540	0.19	12	131
Total - All Industries		30,131	\$45,070	1.00	16,270	79,303

Source: JobsEQ® by Chmura

The top 20 industries by total demand are shown in the table below. Overall, employment in Ross County is forecast to gradually decline over the next five years (-0.1% average annual growth), but five of these top twenty industries are expected to grow. These include individual and family services (3.3% average annual growth), outpatient care centers (2%), and psychiatric and substance abuse hospitals (0.5%). The largest number of openings is for restaurants and other eating places, with total demand over five years of more than 2,200 workers, followed by motor vehicle manufacturing (2,048), and general and medical surgical hospitals (1,018). Opportunities in industries which pay above-average wages include general medical and surgical hospitals; psychiatric and substance abuse hospitals; justice, public order, and safety activities; and pulp, paper, and paperboard mills.

Table 3.7: Top 20 Industries by Total Demand Forecast

NAICS	Industry	Current			Forecast 2020Q3 – 2025Q3				
		Empl	Avg Ann Wages	LQ	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth
6221	General Medical and Surgical Hospitals	2,712	\$67,634	2.29	1,018	500	530	-12	-0.1%
7225	Restaurants and Other Eating Places	2,574	\$15,973	1.37	2,218	964	1,205	49	0.4%

Table 3.7: Top 20 Industries by Total Demand Forecast

NAICS	Industry	Current			Forecast 2020Q3 – 2025Q3					
		Empl	Avg Ann Wages	LQ	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth	
3361	Motor Vehicle Manufacturing	2,048	\$55,570	45.99	1,113	401	700	12	0.1%	
6111	Elementary and Secondary Schools	1,684	\$47,841	1.07	693	375	385	-67	-0.8%	
9221	Justice, Public Order, and Safety Activities	1,512	\$59,311	3.96	647	289	391	-33	-0.4%	
6222	Psychiatric and Substance Abuse Hospitals	1,453	\$75,844	29.58	693	303	351	39	0.5%	
3221	Pulp, Paper, and Paperboard Mills	849	\$70,363	46.00	389	153	271	-35	-0.8%	
5613	Employment Services	764	\$23,857	1.19	425	177	260	-13	-0.3%	
4523	General Merchandise Stores, including Warehouse Clubs and Supercenters	629	\$25,293	1.55	410	197	238	-24	-0.8%	
6231	Nursing Care Facilities (Skilled Nursing Facilities)	607	\$34,140	1.93	293	156	152	-16	-0.5%	
6241	Individual and Family Services	595	\$31,846	1.06	493	200	190	103	3.3%	
4451	Grocery Stores	466	\$25,651	0.87	323	156	182	-15	-0.6%	
4441	Building Material and Supplies Dealers	417	\$31,711	1.80	258	115	154	-11	-0.5%	
4411	Automobile Dealers	360	\$59,239	1.45	200	84	123	-7	-0.4%	
6214	Outpatient Care Centers	338	\$55,390	1.65	182	65	82	35	2.0%	
4471	Gasoline Stations	337	\$18,170	1.84	261	132	142	-13	-0.8%	
2382	Building Equipment Contractors	333	\$48,779	0.71	171	59	112	-1	0.0%	
3362	Motor Vehicle Body and Trailer Manufacturing	329	\$51,341	11.13	156	60	112	-17	-1.0%	
3363	Motor Vehicle Parts Manufacturing	327	\$44,328	3.14	167	60	109	-2	-0.1%	
6243	Vocational Rehabilitation Services	311	\$29,497	4.91	159	79	96	-16	-1.0%	

Source: JobsEQ® by Chmura

Occupation Mix

The occupation mix in a region follows the mix of industries. In Ross County, the largest occupation groups are production, office and administrative support, and healthcare practitioners and technical. Except for healthcare practitioners and technical occupations, the top five occupation groups all pay average annual wages below the regional average. Ross County has a larger share of employment in production occupations (10.4%) compared with the labor shed (1.0%) and the state (8.5%). Healthcare practitioners and technical occupations (with an average wage of \$73,500) and construction occupations (\$47,200) each make up a greater share of employment in Ross County than they do in the labor shed or state. However, Ross County has a relatively lower share of employment compared with the labor shed and state in other higher-paying occupations such as management, business and financial operations, and computer and mathematical occupations.

Table 3.8: Occupation Mix

SOC	Occupation Title	Current Employment	Average Annual Wages	Percent of Total Employment		
				Ross County	Labor Shed	Ohio
51-0000	Production Occupations	3,148	\$33,900	10.4%	1.0%	8.5%
43-0000	Office and Administrative Support Occupations	2,957	\$36,900	9.8%	1.3%	12.8%
29-0000	Healthcare Practitioners and Technical Occupations	2,955	\$73,500	9.8%	3.8%	6.6%
35-0000	Food Preparation and Serving Related Occupations	2,898	\$22,800	9.6%	3.3%	8.0%
41-0000	Sales and Related Occupations	2,690	\$34,800	8.9%	2.3%	9.2%
53-0000	Transportation and Material Moving Occupations	2,322	\$34,600	7.7%	1.3%	8.8%
31-0000	Healthcare Support Occupations	2,034	\$29,000	6.8%	4.7%	4.6%
25-0000	Educational Instruction and Library Occupations	1,638	\$52,100	5.4%	6.4%	5.5%
11-0000	Management Occupations	1,510	\$90,600	5.0%	0.3%	5.7%
49-0000	Installation, Maintenance, and Repair Occupations	1,087	\$46,100	3.6%	9.6%	3.9%
13-0000	Business and Financial Operations Occupations	1,026	\$64,700	3.4%	6.1%	5.4%
21-0000	Community and Social Service Occupations	1,014	\$48,200	3.4%	4.5%	1.8%
47-0000	Construction and Extraction Occupations	985	\$50,100	3.3%	3.9%	4.0%
33-0000	Protective Service Occupations	966	\$47,600	3.2%	0.5%	2.0%
37-0000	Building and Grounds Cleaning and Maintenance Occupations	789	\$31,200	2.6%	0.5%	3.0%
39-0000	Personal Care and Service Occupations	661	\$26,900	2.2%	5.3%	2.3%
15-0000	Computer and Mathematical Occupations	366	\$69,800	1.2%	10.4%	2.8%
17-0000	Architecture and Engineering Occupations	353	\$80,400	1.2%	2.4%	1.7%
27-0000	Arts, Design, Entertainment, Sports, and Media Occupations	254	\$52,300	0.8%	7.6%	1.5%
19-0000	Life, Physical, and Social Science Occupations	227	\$69,100	0.8%	2.4%	0.8%
23-0000	Legal Occupations	159	\$90,800	0.5%	9.4%	0.7%
45-0000	Farming, Fishing, and Forestry Occupations	92	\$35,500	0.3%	10.1%	0.3%
00-0000	Total - All Occupations	30,131	\$45,100	100.0%	97.2%	100.0%

Source: JobsEQ® by Chmura

Looking ahead, demand for occupations will be driven by growth in the underlying industries as well as the need to replace workers who exit the labor force (retire, take care of a family member full time, etc.) or transfer to another occupation. Over the next five years, more than two-thirds (68%) of all openings are expected to be in occupation groups which pay below-average wages, led by food preparation and serving related (with demand of 2,575 workers total over the next five years). Total demand for production occupations, typically employed in the manufacturing sector, is expected to exceed 1,687 in Ross County and more than 6,100 in the labor shed over the next five years.

Table 3.9: Occupation Snapshot

SOC	Occupation	Empl	Current 2020Q3 Mean Ann Wages	LQ	Forecast Total Demand 2020Q3 – 2025Q3	
					Ross County	Labor Shed
51-0000	Production Occupations	3,148	\$33,900	1.78	1,687	6,148
43-0000	Office and Administrative Support Occupations	2,957	\$36,900	0.76	1,498	7,902
29-0000	Healthcare Practitioners and Technical Occupations	2,955	\$73,500	1.68	891	3,394
35-0000	Food Preparation and Serving Related Occupations	2,898	\$22,800	1.23	2,575	11,954
41-0000	Sales and Related Occupations	2,690	\$34,800	0.93	1,810	9,230
53-0000	Transportation and Material Moving Occupations	2,322	\$34,600	0.92	1,474	8,501
31-0000	Healthcare Support Occupations	2,034	\$29,000	1.52	1,411	6,786
25-0000	Educational Instruction and Library Occupations	1,638	\$52,100	0.96	672	3,852
11-0000	Management Occupations	1,510	\$90,600	0.76	625	3,405
49-0000	Installation, Maintenance, and Repair Occupations	1,087	\$46,100	0.94	521	2,533
13-0000	Business and Financial Operations Occupations	1,026	\$64,700	0.61	487	2,322
21-0000	Community and Social Service Occupations	1,014	\$48,200	1.91	582	2,470
47-0000	Construction and Extraction Occupations	985	\$50,100	0.70	535	3,647
33-0000	Protective Service Occupations	966	\$47,600	1.47	406	1,736
37-0000	Building and Grounds Cleaning and Maintenance Occupations	789	\$31,200	0.79	527	2,903
39-0000	Personal Care and Service Occupations	661	\$26,900	0.83	501	2,513
15-0000	Computer and Mathematical Occupations	366	\$69,800	0.39	134	642
17-0000	Architecture and Engineering Occupations	353	\$80,400	0.67	140	600
27-0000	Arts, Design, Entertainment, Sports, and Media Occupations	254	\$52,300	0.47	134	772
19-0000	Life, Physical, and Social Science Occupations	227	\$69,100	0.84	99	407
23-0000	Legal Occupations	159	\$90,800	0.62	46	202
45-0000	Farming, Fishing, and Forestry Occupations	92	\$35,500	0.46	68	412
00-0000	Total - All Occupations	30,131	\$45,100	1.00	16,833	82,417

Source: JobsEQ® by Chmura

At the detailed occupation level, many of the occupations with the fastest growth forecasts require higher education such as master's and bachelor's degrees. Among occupations which typically require an associate's degree or less, the fastest-growing occupations are in health care, including home health aides, personal care aides, and physical therapist assistants. Among installation, maintenance, and repair occupations, industrial machinery mechanics are expected to see average annual growth of 1.1% and pay above-average wages of \$49,600.

Table 3.10: Top 20 Fastest-Growing Detailed Occupations

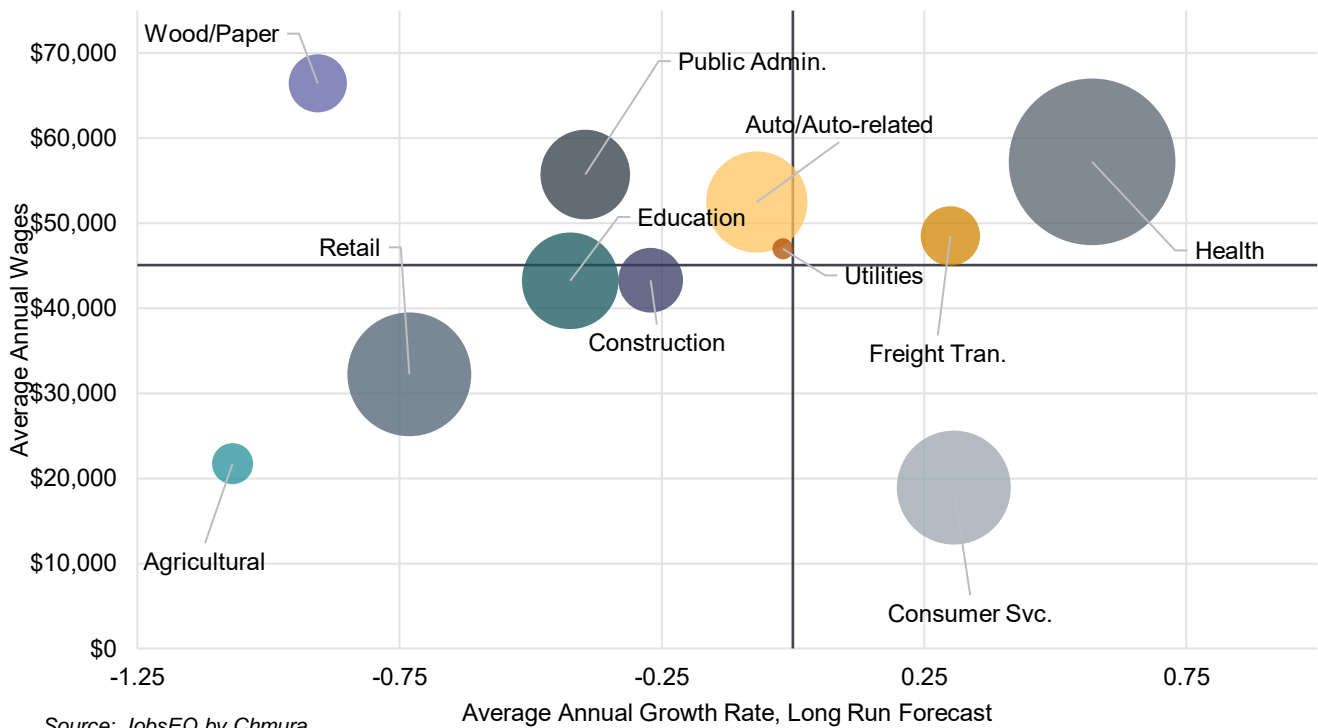
SOC	Occupation	Empl	Current 2020Q3 Mean Ann Wages	Forecast Total Demand 2020Q3 – 2025Q3		Typical Entry-Level Education Required
				Total Demand	Ann % Growth	
29-1141	Registered Nurses	1,307	\$65,600	363	0.1%	Bachelor's degree
51-2092	Team Assemblers	1,250	\$27,100	684	-0.5%	High school diploma or equivalent
35-3023	Fast Food and Counter Workers	1,052	\$21,300	1,024	0.7%	None
41-2031	Retail Salespersons	952	\$27,700	660	-0.4%	None
41-2011	Cashiers	813	\$22,600	681	-1.1%	None
31-1122	Personal Care Aides	748	\$24,600	622	1.7%	High school diploma or equivalent
31-1131	Nursing Assistants	556	\$28,700	314	0.1%	Postsecondary non-degree award
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	530	\$29,400	372	0.1%	None
43-9061	Office Clerks, General	467	\$34,000	246	-1.0%	High school diploma or equivalent
35-3031	Waiters and Waitresses	462	\$22,600	443	0.0%	None
33-3012	Correctional Officers and Jailers	450	\$47,400	164	-1.1%	High school diploma or equivalent
53-7065	Stockers and Order Fillers	432	\$29,200	278	-0.3%	High school diploma or equivalent
53-3032	Heavy and Tractor-Trailer Truck Drivers	374	\$37,400	205	-0.3%	Postsecondary non-degree award
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	349	\$32,500	229	0.0%	None
43-4051	Customer Service Representatives	339	\$33,000	198	-1.0%	High school diploma or equivalent
41-1011	First-Line Supervisors of Retail Sales Workers	311	\$44,000	149	-0.9%	High school diploma or equivalent
25-2021	Elementary School Teachers, Except Special Education	310	\$60,300	100	-0.7%	Bachelor's degree
25-9045	Teaching Assistants, Except Postsecondary	300	\$28,100	150	-0.3%	Some college, no degree
11-9013	Farmers, Ranchers, and Other Agricultural Managers	287	\$64,900	110	-1.5%	High school diploma or equivalent
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	276	\$35,400	125	-1.5%	High school diploma or equivalent

Source: JobsEQ® by Chmura

Clusters

Clusters are groups of related industries which benefit from locating in proximity to each other. Benefits from locating in the same region include greater labor availability for typically required jobs, existing supply chain relationships and transportation networks, and sharing knowledge among firms. In Chmura’s long-run growth model, Ross County has several industry clusters that are likely to expand employment over the next decade, shown to the right of the vertical line in the figure below. These clusters include—health, freight transportation, and consumer services—and generally pay average to above-average wages for the region (with the exception of consumer services). The size of the bubbles in the figure represents employment size in the region. The long-run model indicates many of the largest and higher-paying industries are projected to decline over the next decade, including wood and paper, education, and public administration. The lower-paying retail cluster is also expected to decline over this period. The auto/auto-related cluster is forecast to decline modestly at an average annual rate of 0.2%.

Figure 3.8: Ross County Industry Clusters, Average Wages, and Forecast Growth Rate (2020Q3 - 2030Q3)



3.4 Training Pipeline

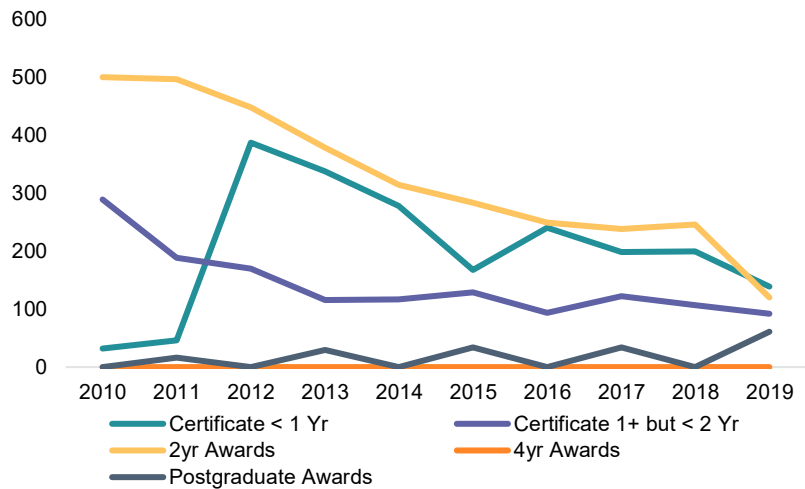
The number of graduates from postsecondary programs in a region defines the pipeline of future workers and the training capacity to support industry demand. In 2019, 1,239 individuals ages 18-24 (21% of the total population aged 18-24) were enrolled in college. College enrollment as a percentage of this population has been slowly declining in recent years, down from 22.9% in 2015.

Pickaway Ross Joint Vocational School District is the largest institution in Ross County, issuing 67% of all degrees in 2019. The largest degree programs include allied health and medical assisting services, and liberal arts and sciences, offering 2-year programs in both subjects. Within the labor shed region, Ohio Christian University awarded the most degrees, conferring 30% of all degrees in the labor shed region in 2019. The largest degree programs include business administration and management, human services, and divinity and ministry. Other 4-year institutions in the labor shed region include Shawnee State University, and Ohio University's Southern Campus. In Ross County, 2-year institutions include Daymar College Chillicothe and Ohio University's Chillicothe campus.

In Ross County, awards requiring two years or less have been declining since 2010. This is consistent with a national trend of enrollment declines in 2-year institutions during periods of economic expansions, as individuals find it easier to attain jobs without additional education. Awards in the labor shed region have followed a similar pattern of decline in 2-year awards, countered by an increase in 4-year awards. In the 2019-2020 academic year, institutions in Ross County awarded 351 two-year awards.

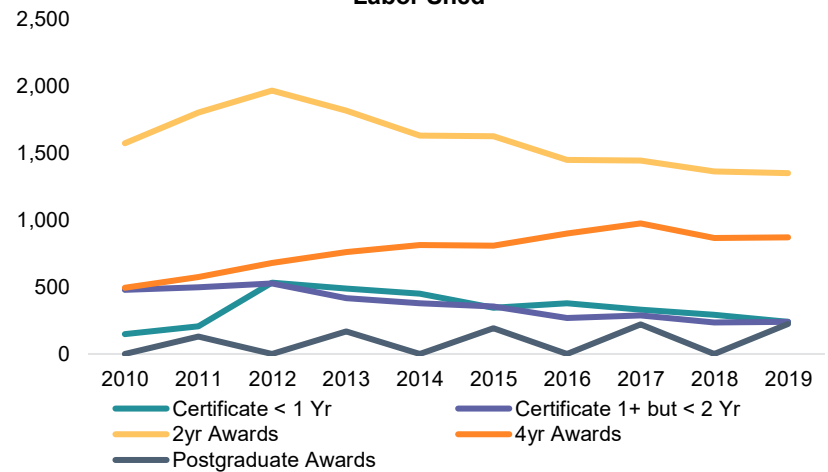
As shown in Table 3.11, between 2010 and 2019 the fastest growing program in Ross County over this period was allied health diagnostic, intervention, and treatment professions, which expanded 115% from 13 awards in 2010 to 28 in 2019. Other notable fast-growing programs include human development, family studies, and related services (+100.0%); allied health and medical assisting services (+93%); business administration, management and operations (+62%); and liberal arts and sciences, general studies and humanities (+17%).

Figure 3.9: Postsecondary Awards, Ross County



Source: JobsEQ by Chmura, NCES IPEDS

Figure 3.10: Postsecondary Awards, Ross County Labor Shed



Source: JobsEQ by Chmura, NCES IPEDS

Table 3.11: Fastest Growing Programs 2010-2019, Ross County

Instructional Program Group	Awards 2010	Awards 2019	% Growth
Allied Health Diagnostic, Intervention, and Treatment Professions	13	28	115%
Allied Health and Medical Assisting Services	29	56	93%
Business Administration, Management and Operations	13	21	62%

Table 3.11: Fastest Growing Programs 2010-2019, Ross County

Instructional Program Group	Awards 2010	Awards 2019	% Growth
Liberal Arts and Sciences, General Studies and Humanities	24	28	17%
Precision Metal Working	12	13	8%
Electrical and Power Transmission Installers	15	16	7%

Source: JobsEQ® by Chmura, NCES IPEDS

In the Ross County labor shed region, as shown in Table 3.12, between 2010 and 2019 the fastest growing program over this period was theology and religious vocations, up from 6 awards in 2010 to 113 in 2019. Other fast-growing programs include mathematics (+280.0%); industrial production technologies/technicians (+260.0%); electromechanical instrumentation and maintenance technologies/technicians (+250.0%); and legal support services (+233.3%). Related to manufacturing, industrial production technologies/technicians awards have grown from 5 to 18 as of 2019.

Table 3.12: Fastest Growing Programs 2010-2019, Ross County Labor Shed

Instructional Program Group	Awards 2010	Awards 2019	% Growth
Theology and Religious Vocations, Other	6	113	1783.3%
Mathematics	5	19	280.0%
Industrial Production Technologies/Technicians	5	18	260.0%
Electromechanical Instrumentation and Maintenance Technologies/Technicians	6	21	250.0%
Legal Support Services	3	10	233.3%
Management Information Systems and Services	13	39	200.0%
Special Education and Teaching	7	20	185.7%
Engineering Technologies/Technicians, Other	7	19	171.4%
Business Administration, Management and Operations	145	363	150.3%

Source: JobsEQ® by Chmura, NCES IPEDS

The largest declines in awards from 2010 through 2019 in Ross County have occurred in those instruction programs that have been eliminated entirely, including somatic bodywork and related therapeutic services; electrical/electronics maintenance and repair technology; health and medical administrative services; communication disorders sciences and services; heavy/industrial equipment maintenance technologies; and human resources management and services. Other notable declines include registered nursing, nursing administration, nursing research and clinical nursing (-77%); and heating, air conditioning, ventilation and refrigeration maintenance and technology/technician (HAC, HACR, HVAC, HVACR) (-72%). The largest program in 2010 to experience declines—practical nursing, vocational nursing and nursing assistants—declined from 180 awards in 2010 to 81 awards in 2019 (-55%).

Table 3.13: Fastest Declining Programs 2010-2019, Ross County

Instructional Program Group	Awards 2010	Awards 2019	% Growth
Somatic Bodywork and Related Therapeutic Services	30	0	-100%
Electrical/Electronics Maintenance and Repair Technology	14	0	-100%
Health and Medical Administrative Services	9	0	-100%
Communication Disorders Sciences and Services	7	0	-100%
Heavy/Industrial Equipment Maintenance Technologies	6	0	-100%
Human Resources Management and Services	2	0	-100%
Registered Nursing, Nursing Administration, Nursing Research and Clinical Nursing	79	18	-77%
Heating, Air Conditioning, Ventilation and Refrigeration Maintenance Technology/Technician (HAC, HACR, HVAC, HVACR)	25	7	-72%
Practical Nursing, Vocational Nursing and Nursing Assistants	180	81	-55%

Table 3.13: Fastest Declining Programs 2010-2019, Ross County

Instructional Program Group	Awards 2010	Awards 2019	% Growth
Health Professions and Related Clinical Sciences, Other	25	14	-44%

Source: JobsEQ® by Chmura, NCES IPEDS

In the labor shed region, notable declines include business/commerce, general (-91.3%); and Heating, Air Conditioning, Ventilation and Refrigeration Maintenance Technology/Technician (HAC, HACR, HVAC, HVACR) (-72.0%). The largest program in 2010 to experiences declines (business/commerce, general) declined from 46 awards in 2010 to 4 awards in 2019 (-91.3%).

Table 3.14: Fastest Declining Programs 2010-2019, Ross County Labor Shed

Instructional Program Group	Awards 2010	Awards 2019	% Growth
Business/Commerce, General	46	4	-91.3%
Heating, Air Conditioning, Ventilation and Refrigeration Maintenance Technology/Technician (HAC, HACR, HVAC, HVACR)	25	7	-72.0%
Computer Engineering Technologies/Technicians	18	6	-66.7%
Chemistry	6	2	-66.7%
Business Operations Support and Assistant Services	36	14	-61.1%
Heavy/Industrial Equipment Maintenance Technologies	17	7	-58.8%
Drafting/Design Engineering Technologies/Technicians	12	5	-58.3%
Health Professions and Related Clinical Sciences, Other	45	21	-53.3%

Source: JobsEQ® by Chmura, NCES IPEDS

3.5 Gap Analysis

To further analyze occupation training and identify potential gaps, Chmura translates awards by training program into occupation output.⁶ The target range is determined using two measures: 1) regional projected annual growth in employment for each occupation and 2) a national benchmark of average awards granted in regions with similar levels of employment. As a conservative measure of demand, the minimum of this range is used to compare with the output of awards to derive a potential award gap or surplus.

It is important to take a regional approach to assess training demand and supply. Not all graduates from regional colleges and universities remain in the area, and similarly, not all workers in the region are trained locally. To capture the regional training pipeline, awards output and demand data are presented separately for Ross County and the Ross County labor shed region.

Most award gaps are driven by programs not offered within Ross County, but which may be filled by graduates from nearby institutions in the labor shed. The largest award gap in associate’s degree occupations is for preschool teachers, except special education, with no awards granted but a projected demand between 19 and 34. In the labor shed region, there is a surplus of 40 awards granted in this occupation relative to the projected demand, indicating that the gap could be filled by graduates from institutions adjacent to Ross County. Similarly, programs at institutions in the labor shed granted 233 awards for industrial engineering technologists and technicians in 2019, some of which can fill the target annual demand of four to nine workers each year.

Table 3.15: Award Gaps, Occupations Typically Requiring an Associate’s Degree

SOC	Title	Awards		Target Range		Award Gap (Surplus)	
		Ross County	Labor Shed	Ross County	Labor Shed	Ross County	Labor Shed
25-2011	Preschool Teachers, Except Special Education	0	7	5 – 8	26 – 42	5	19
29-2034	Radiologic Technologists and Technicians	0	16	4 – 5	13 – 16	4	0
29-1126	Respiratory Therapists	0	7	3 – 4	10 – 12	3	3
29-1292	Dental Hygienists	0	21	2 – 4	8 – 13	2	(8)
29-2032	Diagnostic Medical Sonographers	0	0	2 – 2	6 – 6	2	6
31-2011	Occupational Therapy Assistants	0	24	2 – 3	11 – 14	2	(10)
31-2021	Physical Therapist Assistants	0	16	2 – 5	9 – 25	2	0

Source: JobsEQ® by Chmura

Computer and information systems managers top the list of potential awards gaps in occupations that typically require a bachelor’s degree. As shown in Table 3.16, there were only 6 awards in Ross County linked to this occupation, suggesting a potential gap between 103 and 153 workers that employers have to hire outside the region. The same occupation in the labor shed region has a surplus of almost 2,500 individuals, enough to conceivably fill the gap in Area 20, though resume data indicate only a small fraction (roughly 7%) of alumni work in Area 20. Other notable potential gaps include programs related to elementary school teachers, except special education (81); secondary school teachers, except special and career/technical education (65); middle school teachers, except special and career/technical education (40); and medical and health services managers (34).

⁶ To relate training programs to occupations, this report uses a modified version of the CIP to SOC crosswalk from the National Center for Education Statistics (NCES). While the crosswalk used very helpful for estimating occupation production from training program awards data, it is neither perfect nor comprehensive. Indeed, it is hard to imagine such a crosswalk being perfect since many training program graduates for one reason or another do not end up employed in occupations that are most related to the training program from which they graduated.

Table 3.16: Award Gaps, Occupations Typically Requiring a Bachelor's Degree

SOC	Title	Awards		Target Range		Award Gap (Surplus)	
		Ross County	Labor Shed	Ross County	Labor Shed	Ross County	Labor Shed
29-1141	Registered Nurses	18	181	74 – 101	229 – 327	56	48
25-2021	Elementary School Teachers, Except Special Education	0	26	22 – 22	133 – 134	22	108
21-1029	Social Workers, All Other	0	9	19 – 22	26 – 30	19	17
25-2031	Secondary School Teachers, Except Special and Career/Technical Education	0	109	17 – 42	100 – 254	17	0
21-1018	Substance Abuse, Behavioral Disorder, and Mental Health Counselors	0	24	15 – 19	64 – 81	15	39
11-9111	Medical and Health Services Managers	0	36	14 – 15	53 – 60	14	17
11-1021	General and Operations Managers	6	124	19 – 20	113 – 116	13	(8)

Source: JobsEQ® by Chmura

Online job postings represent short-term gaps as employers search for workers to fill vacancies. The tables below summarize ads posted in Ross County over the fourth quarter of 2020. The total number of ads is a proxy for total demand for workers (though note that some occupations are less likely to be advertised online, and some ads may be for more than one position). Median wage data is pulled from salary ranges in the text of ads, and the amount of time an ad stays online (measured by median duration) is indicative of how difficult it is for employers to fill those jobs. The greatest number of ads over this period was for heavy and tractor-trailer drivers, with over 300 ads from local employers. Occupations with longer durations include first-line supervisor of retail sales workers, fast food and counter workers, and first-line supervisors of food preparation and serving workers, indicating employers have more difficulty filling those vacancies.

Table 3.17: Top Occupations in Online Job Ads, 2020Q4

SOC	Occupation	Median Duration	Median Wage	Total Ads	
53-3032.00	Heavy and Tractor-Trailer Truck Drivers	7	\$63,926	328	
29-1141.00	Registered Nurses	27	\$78,000	290	
41-2031.00	Retail Salespersons	31	\$22,880	229	
41-1011.00	First-Line Supervisors of Retail Sales Workers	52	\$61,135	174	
53-7065.00	Stockers and Order Fillers	36	\$30,160	159	
35-1012.00	First-Line Supervisors of Food Preparation and Serving Workers	43	\$22,880	126	
35-3023.00	Fast Food and Counter Workers	30	\$22,880	122	
43-4051.00	Customer Service Representatives	28	\$29,854	63	
21-1093.00	Social and Human Service Assistants	30	\$30,160	32	
15-1252.00	Software Developers	9	\$104,200	26	

Source: JobsEQ® by Chmura

Most of the certifications listed in online job ads are for healthcare occupations, including CPR, RN, and LPN. Additionally, oncology-related certificates had a significant number of ads.

Table 3.18: Certifications in Online Job Ads, 2020Q4

Certificate Name	Median Duration	Median Wage	Total Ads	
Certification in Cardiopulmonary Resuscitation (CPR)	41	\$31,200	223	
Registered Nurse (RN)	36	\$69,278	208	
Advanced Cardiac Life Support Certification (ACLS)	43	n/a	156	
Licensed Practical Nurse (LPN)	33	\$52,000	153	
Pediatric Advanced Life Support (PALS)	49	n/a	115	
Basic Life Support (BLS)	32	\$69,278	111	
Oncology Certified Nurse (OCN)	49	n/a	93	
Certified Medical Oncology	50	n/a	92	
Radiation Oncology	50	n/a	92	
Certified Nursing Assistant (CNA)	37	\$22,972	91	

Source: JobsEQ® by Chmura

By far, most of the ads which specified a minimum education level were for a high school diploma or equivalent, as evidenced by the number of ads for occupations such as heavy and tractor-trailer truck drivers, retail salespersons, and stockers and order fillers. Jobs requiring a bachelor's degree had the second-most postings, primarily for supervisors and managers as well as registered nurses. Though there were fewer ads requiring an associate's degree, they had a higher median wage of \$62,838 compared with \$72,800 for ads requiring bachelor's degrees. Jobs requiring an associate's degree include registered nurses, medical and health service managers, computer user support specialists, and first-line supervisors of retail sales workers. The demand for registered nurses with an associate's degree is responsible for the higher median wages, as these ads had a median wage of \$66,560.

Table 3.19: Education Levels in Online Job Ads, 2020Q4

Minimum Education Level	Median Duration	Median Wage	Total Ads	
High school diploma or equivalent	33	\$29,120	1,037	
Bachelor's degree	27	\$72,800	197	
Associate's degree	36	\$62,838	176	
Master's degree	37	\$59,154	31	
Doctoral or professional degree	54	n/a	4	
Unspecified/other	23	\$29,854	2,378	

Source: JobsEQ® by Chmura

3.6 Housing Market

With the current housing affordability crises across the US, affordable housing for communities is of paramount importance not only to ensure safety and livability of communities, but also for employers to attract and retain workers. If working people cannot afford to live where they are employed, economic and social consequences occur- attraction and retention of workers becomes increasingly difficult for employers while the cost of rent and commute times influence location choices for current and prospective employees. Accordingly, any effective plan of economic recovery features housing. Ultimately, the research conducted and data collected illustrates a baseline for the five-county region. Analysis of housing supply, demand, and cost can provide Area 20 with a high-level understanding about implications the current housing situation may be having on the region's ability to attract and retain workers.

Methodology for this analysis involved a review of past housing/real estate-related plans and studies in the five-county region. In addition, the socioeconomics of the area were evaluated in the context of existing housing and projected housing need. The current housing stock in the region has been assessed and evaluated and with the help of economic modeling, future housing demand is projected. Special focus was paid to the average cost per month for both owner-occupied and renter-occupied units in the five-county region.

For this analysis, Area 20 counties are divided into three different groups. First is the Area 20 Region comprised of the five counties. This grouping allows us to analyze trends region-wide. Second, Fairfield and Pickaway counties are grouped together. Due to their proximity to the Columbus market, Fairfield and Pickaway counties are seeing greater population growth. The remaining three counties in the Area 20 region- Hocking, Ross, and Vinton- all share rural characteristics and slower projected population growth or declines (as shown in this analysis). Because these groups have different populations and incomes, there will be different housing characteristics and therefore different projected demand across housing stock types.

Recent Research

The project team started with reviewing the current state of housing across Ohio, and then began to look at each county in the region. Various secondary sources and publications were consulted to gain an understanding of the housing market in the area. The following housing reports/studies were reviewed during this phase of the analysis:

- MORPC Regional Housing Strategy (2020)
- National Low Income Housing Coalition (NLIHC)
- Analysis of Housing Needs for Columbus, OH MSA (2018) BIA- Housing Study
- Analysis of Impediments to Fair Housing Choice, Ross County & City of Chillicothe

Across Ohio there is a shortage of rental homes affordable and available to extremely low-income households (ELI), whose incomes are at or below the poverty guideline or 30% of their area median income (AMI). Many of these ELI households are severely cost burdened, meaning they spend more than half of their income on housing. According to the National Low Income Housing Coalition, there are about 436,611 renter households in Ohio that are extremely low income, and there is a shortage of over 252,000 homes for ELI renters. (*Source: National Low Income Housing Coalition*)

An analysis of housing needs for the Columbus, OH MSA in 2018 also sheds some light on the current market, with emphasis on the two more urban counties in the Area 20 region (Fairfield and Pickaway). The report paints the picture of population growth with increased housing need resulting from the increases in employment opportunities. Current permitting activity indicates the challenge of affordability and ultimately suggests an accommodation problem. Additionally, within all regions of the study, the increases in median home sales prices have outpaced median income household growth. In the Columbus MSA, the compounded annual growth rate in home price from 2012 to 2017 (5.85%) is nearly five times the compounded annual growth rate in the median household income for the same time period (1.24%).

The Analysis of Impediment to Fair Housing in Ross County and Chillicothe, articulates issues to housing for people in the area. Importantly, these trends and accompanying implications can be extrapolated towards the other more rural counties to supplement our understanding of the housing market comprehensively. Some of the impediments identified in the study include:

- Lower-income households are paying a higher percentage of their incomes towards rent.
- There is a lack of diverse realtors in the area – many minority prospective homebuyers would feel more comfortable working with a realtor that shares life experiences.
- NIMBY-ism (Not in My Backyard) is an ever-present inhibitor to fair housing choice. Although most residents of a community understand and acknowledge the need for assisted housing units for the disabled, for victims of domestic violence, shelters for the homeless, and suitable housing for low to moderate income residents, they still do not want it next to their property.

Housing Demand

The housing demand model used by the project team forecasts and quantifies what annual demand could be in the Hocking-Ross-Vinton (three-county) region over the next five and ten years. The Hocking-Ross-Vinton model reflects ESRI Business Analyst data that includes US Census data and population forecasts. Using this data, the project team started the demand model for the area’s estimated population through 2030. When people living in group quarters are removed from the estimate, the population that will reside in households can be estimated.

Housing unit occupancy rates in the three-county area have been steadily decreasing since 2000. In 2020 (most recent data) there were approximately 6,632 vacant units. When vacant units are removed, the remaining difference is the new units built over a ten-year period. Units that would likely have been demolished or converted away from housing are removed from the new unit total. This provides a net gain in housing units. Calculations are based on household growth over the ten-year period. From now until 2025 the Hocking-Ross-Vinton three-county region will need to add an additional 839 units (with an annualized demand of approximately 168 units per year) despite population and number of households decreasing. Hocking, Ross, and Vinton counties are seeing incremental but significant population loss as a three-county region. The demand model shows that, over the next five years, 602 of needed housing units should be for those seeking ownership and 237 for renters. From 2020 to 2030 the Hocking-Ross-Vinton region needs to add 1,690 units, with 71.8% of those oriented for owners based on this model.

Table 3.20: Housing Demand in Hocking-Ross-Vinton

Demand for New Units	2010	2020	2025	2030
Based on Household Growth	2,542	417	-136	-135
Total new units needed (2020-2025) (2025-2030)	3,491	1,381	839	851
Annualized demand	349	173	168	170

Source: TPMA, ESRI

Table 3.21: Demand for Owning or Renting Housing

Annual Share Own v Rent	2020-2025		2025-2030		2020-2030
	Annual Total	5-Yr Total	Annual Total	5 Yr Total	Total
Own	120	602	122	611	1,213
Rent	47	237	48	240	477
Total Units	168	839	170	851	1,690

Source: TPMA, ESRI

Housing Preferences

The projected demand calculated by the model simply shows the number of units needed to be added to the housing supply to support population changes. The unit type is broken out between own vs. rent, but we can look more deeply into the lifestyle market segments of the population that are changing in the Hocking-Ross-Vinton region to learn more about housing preferences.

ESRI's Tapestry Segmentation Profiles are a consumer analysis tool that identifies distinctive markets in the US based on socioeconomic and demographic characteristics to provide an accurate, comprehensive profile of US consumers. In essence, each tapestry provides consumer market profiles that categorize households based on their preference for goods, leisure activities, and housing choice. These profiles estimate the average national growth, demographic characteristics, and buying power of such households. Using these household tapestry profiles; the region can identify the broad categories of households already present and gauge the types of development likely to attract target groups.

The following are the tapestries that make up most households in the counties of Hocking, Ross, and Vinton when aggregated. General descriptions of the top five segments for the region are below. Table 3.22 shows the current percentage of Hocking-Ross-Vinton Households that fall into each of the top segments.

Table 3.22: Top 5 Tapestry Segments

Household Lifestyle Market Segment	%Hock-Ross-Vin Hhlds
Southern Satellites	21.9%
Salt of the Earth	15.8%
Heartland Communities	9.2%
Rooted Rural	7.5%
Old & Newcomers	7.3%

Source: TPMA, ESRI

<p><u>Salt of the Earth</u> - residents are entrenched in their traditional, rural lifestyles. With a median age of 44, these consumers are predominantly white, work in construction, manufacturing, and other service-related jobs. Usually high school educated and their household income (\$56.3k) is just over the national median. Most people (83%) in this segment own their homes.</p>	
<p><u>Southern Satellites</u> – this market is typically nondiverse, slightly older, settled married couples who are homeowners (77%). The median household income in this segment and home value are slightly below average (\$47.8k). People in this segment are employed in various industries such as healthcare, manufacturing, retail, and construction, with a higher proportion in mining and agriculture. Median age is 40.</p>	<p><u>Green Acres</u> – typically self-described conservatives, embracing “pull yourself up by your bootstraps” culture and a DIY attitude. More than 60% are college educated and that aligns with the median household income of \$76.8k for the segment. Income comes from employment in this sector but also investments and other assets. These consumers are predominantly white, and their median age is 44, and about 86% of them own their homes.</p>
<p><u>Heartland Communities</u> - Heartland Communities are semirural and semiretired. These older householders are primarily homeowners, and many have paid off their mortgages. Consumers in this segment are from rural communities or small towns that are concentrated in the Midwest, and from older Rustbelt cities to the Great Plains. Most of these consumers are white, with a median age of 42, and a median household income of \$42.4k. More workers in the segment are white collar than blue collar.</p>	<p><u>Middleburg</u> – This segment is typically conservative and are family-oriented consumers. Traditional values are the norm – faith, country, and family. They are usually in semirural locales with metropolitan areas. This segment has young couples with children and rapidly changing neighborhoods. The median age is 36 and the median household income is \$59.8k. Most in this segment are homeowners (73%) and they predominantly white.</p>

These groups which are predominantly represented in the three-county region are older than those in both Area 20 as a whole and the Fairfield-Pickaway to-county region. They range in median age from 39.4 to 45.2. A larger percent of these lifestyle groups owns their homes (with the exception of *Old & Newcomers*) and based on their respective median incomes, they can afford a range of home prices from \$126,900-\$168,900 (owner-occupied) and rental prices from \$1,058-\$1,408 per month. However, these groups are not projected to grow as much as other groups in the three-county region in the next five- to ten-year period.

The population groups slated for the highest growth in the Area 20 region are shown in the table below.

Table 3.23: Area 20 Growing Tapestry Segments

Household Lifestyle Market Segment	% Yrly Change
<i>Middleburg</i>	1.40%
<i>Down the Road</i>	0.90%
<i>Green Acres</i>	0.90%
<i>The Great Outdoors</i>	0.80%
<i>Golden Years</i>	0.80%

Middleburg - This segment is typically conservative and are family-oriented consumers. Traditional values are the norm – faith, country, and family. They are usually in semirural locales with metropolitan areas. This segment has young couples with children and rapidly changing neighborhoods. The median age is 36 and the median household income is \$59.8k. Most in this segment are homeowners (73%) and predominantly white.

Down the Road – this segment is younger and more diverse, comprised of people who are family-oriented and who value their traditions. They typically live in mobile homes or smaller single family homes they own (65.2%) and often drive used vehicles that they maintain themselves. They participate in fishing and hunting and lean toward fast and convenience food options.

Green Acres - typically self-described conservatives, embracing “pull yourself up by your bootstraps” culture and a DIY attitude. More than 60% are college educated and that aligns with the median household income of \$76.8k for the segment. Income comes from employment in this sector but also investments and other assets. These consumers are predominantly white, and their median age is 44, and about 86% of them own their homes.

The Great Outdoors – this group is composed of educated empty nesters living an active and modest lifestyle. Their median incomes are slightly above the US level at \$56,400 and their median age is 47.4 60% have attended college and they are very cost conscious. 55% of households are married couple families; 36% are couples with no children living at home.

Golden Years – this segment is made up of independent, active seniors nearing the end of their careers or already in retirement. As such, they have a median age of 52.3 and a disproportionate share (nearly 32%) of residents aged 65 years or older. Golden Years are well-educated and have a higher median household income at \$71,700 (some still from wages, but mostly from investments, Social Security, and retirement income).

The above segments of the Hocking-Ross-Vinton projected population still tend to skew older (except for *Middleburg* and *The Great Outdoors*) but their purchasing power remains within the range of the predominant groups at present in the three-county area. As reported in the Area 20 Strategic Workforce Analysis document, the *Boomburbs* segment, which is slated to grow at the highest rate, has a median age of 36.1 and a median income of \$59,800. Based on this and a standard recommendation that housing should not cost more than 30% of annual income, the *Middleburg* segment can afford homes in the \$179,400 range (owner-occupied) and rental rates around \$1,495 per month.

Most of the growing segments listed are like those segments that currently make up the majority of Hocking-Ross-Vinton households in that they prefer to own their homes. However, as we have noticed with supply chain shortages around lumber and other building materials during the COVID-19 pandemic, building new construction single-family dwellings in the price range that is affordable to both existing and projected population segments will be difficult. Additionally, the fact that many of the population

segments (both existing and projected) are older individuals and/or couples will likely affect housing preferences if these groups choose to age in place. For example, they may prefer smaller or single-floor homes to homes with high square footage and stairs.

Our team examined how these population segments break out more completely by geography in the corresponding sections highlighting Fairfield and Pickaway County combined (a section of the region that is seeing growth due to its proximity to a growing Columbus market) and Hocking-Ross-Vinton combined (a grouping of counties seeing slower growth or decline and embodying more rural characteristics with regard to housing and amenities).

Housing Supply

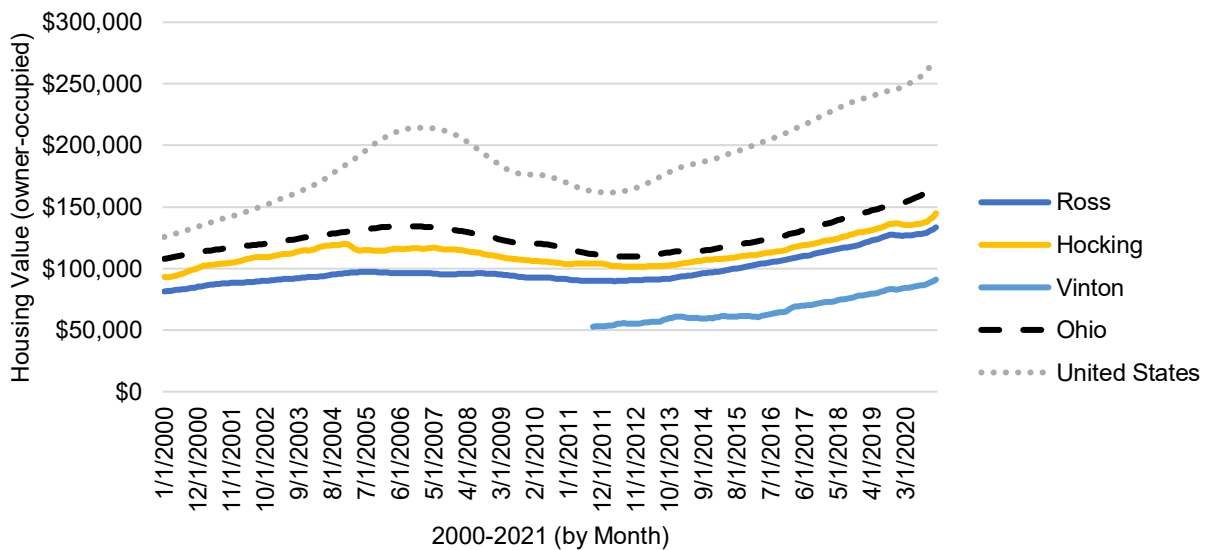
In this section we examine the housing supply in the Hocking-Ross-Vinton region (three counties combined). Our particular focus in this section is not only to overview supply numbers and characteristics, but to also examine how the current price of the current housing supply stands relative to household income. By analyzing housing values and gross rents as they relate to household income, we can determine the concentration of cost-burdened households in a region. Cost-burdened refers to spending over 30% of household income in housing and related costs.

Housing in the Hocking-Ross-Vinton region breaks down into 61.8% owner-occupied and 25.6% renter-occupied. Approximately 12.6% of housing units in the region are vacant.⁷

Conversations with local real estate professionals and mortgage lenders echoed national trends. With mortgage rates at historic lows, the distribution of federal pandemic-related stimulus payments going toward down payments, and a shift to remote work contributing to a surge in buyers. Supply, as in many areas of the country, has not kept up with demand leading to multiple above-asking price offers. Since the appraisal values of the homes in these bidding wars often do not support the higher offers, many buyers have been bringing a significant amount of cash to deals to make them work, sometimes to the tune of between \$30,000 to \$50,000. These tight market conditions will likely persist, as long as construction costs remain high (inability to cost-effectively build more product) and mortgage rates remain low.

Additionally, the three-county Hocking-Ross-Vinton area is a destination for outdoor recreation. Hocking Hills draws people of all ages from both within and outside of Ohio. Supply in Hocking County specifically has been influenced by the purchase of homes to be converted to lodging for tourists. Investor-owned vacation rentals and second homes have tightened the supply of affordable real estate in the area.

Figure 3.11: Housing Values by County Hocking-Ross-Vinton



Source: Zillow Research, TPMA. Note: data for Vinton not available before 9/30/2011

⁷ Source: ESRI Community Profile and 2018 ACS 5-year estimates, Housing Characteristics Table

Figure 3.11 depicts the median housing value over time for the three counties and compares those values across the United States and Ohio. Hocking, Vinton, and Ross county from 2000 to 2020, have trailed the statewide median for housing values. The rural group of Area 20 (Hocking-Ross-Vinton) is significantly undervalued relative to the US as well. While Hocking, Ross, and Vinton are all lower than the US and Ohio values, they all stay relatively close together, especially Ross and Hocking from 2011 to 2020.

Table 3.24 displays the median home value of each county based on sales data at a specific point in time- at the end of the first month of this year (1/31/2021).

Table 3.24: Median Housing Values by County

County	Median Home Value (1/31/2021)
Hocking	\$144,881
Ross	\$133,437
Vinton	\$91,023

Source: Zillow Research

Gross rents in the three-county region break down as seen in Table 3.25. These rates are shown by county and the median rent per county is shown in the last row of the table.

Table 3.25: Gross rental rates in Hocking-Ross-Vinton Counties

Gross Rent (Area 20- 3 County Region)	Hocking	Ross	Vinton
Less than \$500	806	1,430	255
\$500 to \$999	1,481	5,324	620
\$1,000 to \$1,499	107	845	120
\$1,500 to \$1,999	37	83	10
\$2,000 to \$2,499	0	36	0
\$2,500 to \$2,999	0	0	0
\$3,000 or more	0	0	0
Median Rent (\$)	\$606	\$727	\$623

Source: 2018 ACS 5-Year Estimates, Housing Characteristics Table

Evaluating gross rent as a percentage of household income is an insightful measure to determine those who are cost burdened, which is those who pay more than a third of their income on housing.

Table 3.26 shows a range of percentages (rent/household income) and the number of rent-paying households in the three-county area that spend that percentage on housing.

Table 3.26: Gross Rent as a Percentage of HHI in Hocking-Ross-Vinton

Rent as a Percentage of Household Income	Number of Households		
	Hocking	Ross	Vinton
Less than 15.0 percent	505	928	78
15.0 to 19.9 percent	188	1,117	86
20.0 to 24.9 percent	411	941	121
25.0 to 29.9 percent	466	794	122
30.0 to 34.9 percent	168	685	134

Rent as a Percentage of Household Income	Number of Households		
	Hocking	Ross	Vinton
35.0 percent or more	647	2,982	464

Source: 2018 ACS 5-Year Estimates, Financial Characteristics Table

The data show that of those households paying rent in the three-county region, 5,080 are spending more than 30% of their income on housing. These households are considered cost burdened.

The following table breaks down cost burden of households according to income level and by housing type.

Table 3.27: Cost Burden Owner-Occupied, Renter-Occupied Hocking-Ross-Vinton

Annual Earnings	Owner-Occupied			Renter-Occupied		
	Total HH	Cost Burdened HH	Share CB	Total HH	Cost Burdened HH	Share CB
Less than \$20,000	3,623	2,580	71%	4,016	3,192	79%
\$20,000 to \$34,999	4,868	1,905	39%	2,726	1,680	62%
\$35,000 to \$49,999	4,724	1,016	22%	1,622	197	12%
\$50,000 to \$74,999	6,914	536	8%	1,642	11	1%
\$75,000 or more	11,902	145	1%	831	0	0%

Source: 2018 ACS 5-Year Estimates, Financial Characteristics Table

Average wages per worker in the third quarter of 2020 reached \$42,880. Though higher than the entire five-county Area 20 region- \$41,978- this number still falls between the \$35,000 to \$49,999 income grouping of households within the Hocking-Ross-Vinton three-county geography. For that segment of the population, 22% of homeowners are cost-burdened, as are 12% of renters.

Of the industries listed in Table 3.7 (Hocking-Ross-Vinton) “*Top 20 Industries by Total Demand forecast*”, the industries that will experience the highest growth in the two-county region are: individual and family services (annual wages \$31,212); home health services (annual wages \$29,763); continuing care retirement communities and assisted living facilities for the elderly (annual wages \$28,217); supportive activities for mining (annual wages \$33,033); and outpatient care centers (\$53,886). These average annual earnings place occupations in four of the five highest growth industries in Hocking, Ross, and Vinton counties within the income level \$20,000-\$34,999 annually. The percentage of households within this income band in the three-county region that own their homes and are cost burdened is 39%. Of the renters within the same income band, 62% are cost burdened. (Cost burden breaks out by county in the \$20,000-\$34,999 income range as follows: Hocking County- Owner-Occupied 38%/ Renter-Occupied 38%; Ross County- Owner-Occupied 40%/ Renter-Occupied 73%; Vinton County- Owner-Occupied 35%/ Renter-Occupied 45%). Though housing prices in these three counties are comparatively lower than others in the five-county Area 20 region, affordability remains an issue.

Potential Housing Gaps

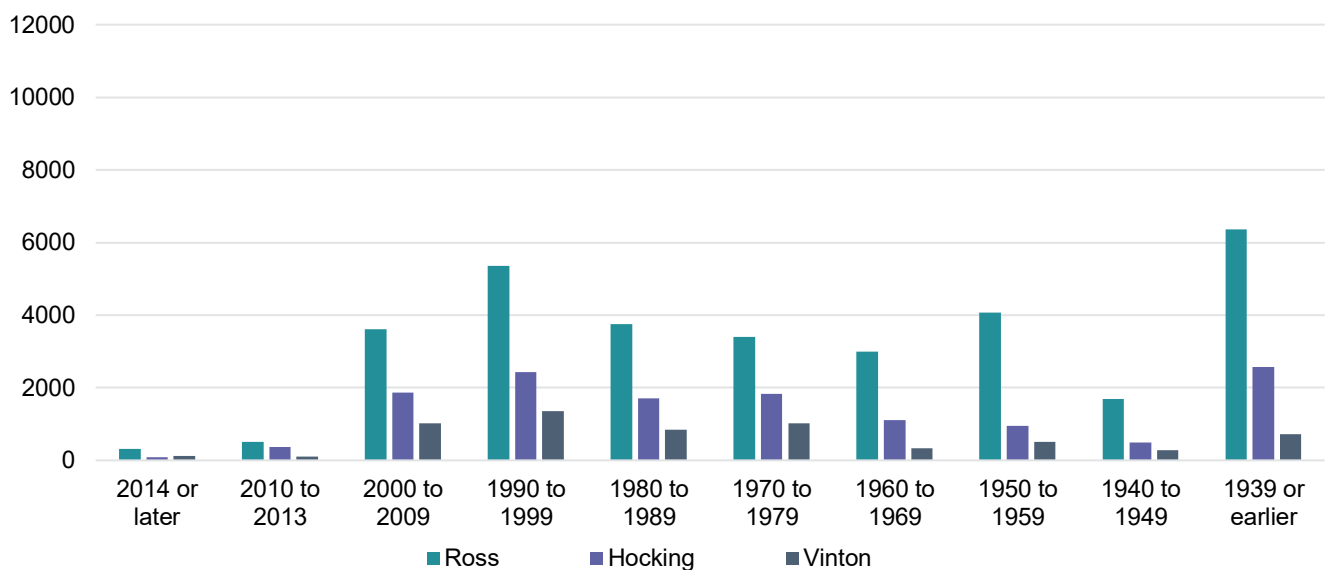
Examining the three-county grouping of Hocking, Ross, and Vinton counties allows us to examine trends in the portion of Area 20 that is seeing very slow population growth or decline. For example, as we discovered in the previous section, cost-burden and affordability present issues throughout the region at income levels associated with wages in the highest growing industries. Additionally, the transition to remote work during the pandemic has and will continue to add to demand pressures. There are several implications for the local workforce that pertain to the data we have collected and examined above.

- Affordability
- Age of Housing Stock
- Mismatch of available housing product and preferences of growing population segments

In the Hocking-Ross-Vinton region, we see a smaller yet still significant percentage of households that are cost-burdened in the average wage range that most current and projected jobs pay. This is likely because housing values in the region trail behind others in the Area 20 region but are still showing an upward swing. As housing values in Hocking, Ross, and Vinton counties continue to rise, and with added market pressure from investors capitalizing on lower prices to create lodging opportunities for tourists visiting the area, the cost of living in these three counties may move further out of reach.

Age of housing stock, depicted in Figure 3.12, shows that while Ross County has the Hocking-Ross-Vinton region’s largest share of newer housing, there is still a lack of units built during or after 2010. Older homes are generally more costly to keep up and present significant costs for the property owner and lack amenities desired by certain population segments. The young professional or up-and-coming family who has been rendered location-agnostic due to changes in remote work patterns during the pandemic will be leaving behind newer product near urban employment centers and may desire options and amenities such as energy efficiency and overall newer systems to older properties in need of updating.

Figure 3.11: Age of Housing Stock- Hocking-Ross-Vinton



Source: 2018 ACS 5 Year Estimates, Housing Characteristics Table

The lifestyle tapestry segments that comprise a majority of the Hocking-Ross-Vinton region also tend to skew older, whiter and with a preference towards home ownership and more quiet rural living. As leaders and stakeholders in the three counties move forward with planning for economic recovery and change, it is important to understand the housing preferences of the population segments they wish to attract to the region, in addition to those that are growing at the highest rates.

The pandemic has also shifted housing preferences for some households, which can be a benefit to Hocking, Ross, and Vinton counties as it potentially sees an influx of homebuyers looking to leave the Columbus market for more rural and suburban settings. Workers who can do their jobs remotely are now seeking quieter and more idyllic surroundings. However, this adds to the demand side of the equation making supply even tighter in the region.

Investors also play a role in tightening supply. In Hocking County in particular, private companies and investors are often able to snatch up limited housing supply for vacation rentals to capitalize on the outdoor recreation pull of tourists to the area.

These factors of affordability, age of housing stock, and housing preference mismatch combine with market conditions to expose gaps in available product in the Area 20 region broadly, and in the Hocking-Ross-Vinton three-county region specifically. It is important for leaders and stakeholders to be intentional with planning, including an assessment of the current makeup of the two-county region’s population characteristics and an understanding of the preferences of growing market segments.

Summary

Housing is an important pillar of comprehensive and collaborative economic development efforts. Housing stock that fits the community is important to retain and attract talent along with growing a community or region's economy. In the Hocking-Ross-Vinton three-county region, we are seeing population numbers decline and grow older. Housing affordability remains an issue for a significant portion of the population. As such, future housing development should be oriented around the composition of each group of counties, to ensure developments are at affordable price points and offer the desired amenities and feel of each community.

The general trends observed in the five-county region as a whole show affordability, aging housing stock, and a potential mismatch of preferences may indicate a gap in available housing options as certain segments of the Area 20 population grow over the next five- to ten- year period.

4. Stakeholder Engagement and SWOT Analysis

4.1 Introduction

Thomas P. Miller and Associates (TPMA) conducted five virtual Industry and Workforce Learning Sessions to gather information from leadership in Fairfield, Hocking, Pickaway, Ross, and Vinton Counties. Vinton and Hocking Counties' sessions were combined, and one session was hosted for employers only. Focus groups were attended by nearly 40 employers and approximately 35 workforce, education, and community partner representatives. Some employers and several workforce, education and community partners attended multiple sessions.

4.2 Facilitated Sessions – Workforce, Education and Community Partners

The workforce, education, social service organizations, economic development leaders, and community partners from all five counties were invited to participate in four facilitated sessions to gain insights on the following:

- what is working well within the local workforce development system
- what challenges exist
- what education and training programs have been most successful/relevant over the last 10-12 months
- how partners currently collaborate and share information
- what opportunities exist for further collaboration
- what challenges exist for partners, job seekers, clients and other program consumers
- what impact the COVID-19 pandemic has had on the workforce system
- what other potential external factors might impact the future successes of the Area 20 workforce system.

Several workforce, education and community partners attended multiple county sessions as these partners and organizations serve across several and in most cases all five counties. This resulted in a large overlap in comments, ideas, and recommendations. Comments or ideas specific to a county/group of counties are noted in parentheses after the comment. Questions were designed to explore strengths and weaknesses in the workforce system in the region, as well as external opportunities and threats through the lens of political, economic, social, and technological factors.

Strengths and Opportunities	
Region Wide	
	<ul style="list-style-type: none"> ○ The Area 20 Workforce Development Board's representation is strong and engaged: long-term commitment from the members. ○ Workforce, education, and community partners show strong willingness to partner, collaborate, and communicate. These organizations are willing to come together to build/find solutions. Many of the education institutions offer customized training solutions for employers looking for skilling, upskilling and/or reskilling incumbent workers. ○ Education partners from across the Area 20 are cooperative rather than competitive. ○ Many/diverse education program providers present in Area - K-12 schools, community colleges, regional campuses, four-year colleges and universities, and Ohio's Career Tech and Technical Centers are all represented. ○ There are untapped resources available to assist with funding for short-term job training, on the job training and other types of continuing education.
County-Specific	
	<ul style="list-style-type: none"> ○ Employer reports they can take advantage of training offered by local providers like Pickaway-Ross Career and Tech Center and the OSU South Centers.

Weaknesses/Barriers and Threats

Region Wide

- The COVID-19 pandemic has caused a drop in visits by individual job seekers to the OMJ Centers. Right now, there is a high demand in the job market but low number of job seekers.
 - Increased Unemployment Benefits appear to be incentivizing individuals not to work.
 - Access to technology and high-speed internet is limited (or non-existent) in many areas of the region. (Hocking/Vinton Counties session)
 - Workers and students have a lack of access to transportation, low attainment of driver's license among younger workers
-
- Lack of childcare/access to childcare was prevalent and has been exacerbated by the pandemic
 - There are changing demographics within the available workforce/generational differences that are causing shifts in work/employment expectations. (Fairfield and Ross County sessions)
 - High turnover rates are perceived to be caused by non-competitive wages and benefits.

County-Specific

- Partners expressed a deficit of learning experiences due to the pandemic effecting these students as they enter the workforce or next steps in their education. (Hocking/Vinton and Ross County sessions)
- One employer expressed frustration after setting up interviews for 119 individuals resulting in 54 no shows and out of the 44 who were hired, 4 did not show up for work the first day and 24 have since left.
- Employer stated that they wish there were a Ross County job board more about apprenticeships, etc.
- Employers would like a centralized meeting with the education providers. More interaction between manufacturers in schools is necessary to fill skills gaps.

4.3 Facilitated Sessions Summary – Employers

Employers from all five counties were invited to participate in five facilitated sessions. The sessions were scheduled specifically to gather employer input that would provide insights on: 1) trends in the labor force as a result of the pandemic, 2) greatest needs related to workforce development, 3) what is working well in the system to meet employer needs, 4) what training and organizations and mechanisms are being utilized, 5) what training is needed but not available and how the workforce development system can address those needs, 6) how the local workforce board and the OMJ Centers can support and improve employers' workforce efforts, 7) current diversity, equity and inclusion initiatives, and 8) challenges and significant external factors impacting workforce in the Area.

What follows are notes from the sessions categorized by greatest needs, workforce system engagement, training, collaboration, challenges, and areas for growth and development. Notes that reflect overall Area 20 employer responses are first, followed by any notes that were specific to a particular county, if any.

Employer Needs and Engagement

Greatest Needs:

- Overall need to fill open positions, mostly at the entry level. The COVID-19 pandemic has exacerbated a problem that existed prior to the pandemic. Employers say business is starting to increase but there are not enough individuals to fill open positions. Many employers believe the stimulus funds and unemployment compensation are to blame for this struggle.
- Awareness by youth and their parents that college is not the only way to earn a good living. A better understanding of credentials, licensures, and apprenticeship programs is necessary.
- Additionally, the need for employees with soft skills continues to be a top concern employers discussed. This includes not only time management, work ethic, and attitude but also good interpersonal communication and the ability to communicate such on a resume.

- Employer reports they can take advantage of training offered by local providers like Pickaway-Ross Career and Tech Center and the OSU South Centers (Piketon, OH)

Workforce System Engagement:

- Although some employers said they have engaged little with their workforce boards or OMJs, others touted the services.
 - There has been some success with hiring individuals through support from the local OMJ's OJT funds
 - Job fair participation, posting jobs on the OMJ online system has yielded some success to find candidates to screen
- Employers admitted not knowing enough about what the system can do to assist them and some said capacity to engage with the system was an issue.
- Those who use the service are typically repeat customers.

Areas for Growth and Development:

- State workforce specialist liaison to work between employers and five county OMJ offices.
- Provide Job Fairs by industry sector
- Virtual tours by employers available via Area 20 website
- Better relationship needs to be built between employers and the OMJ staff; BSRs need to truly engage with and understand local business needs – holistic approach (including ways employers can braid various funding)
- Helping employers understand that training employees leads to better retention rates; employees leave employer when they become frustrated with not knowing how to do their job. OJT funding awareness could help.
- Customized incumbent worker training to meet the needs of employers
- Adaptive training needed for (remote) incumbent workers and new employees – working with others, responding to crisis/problem solving; leaders need help with leading remote staff/working in a remote environment
- Share messages with younger generation on good, local, well-paying jobs. In other words, collectively advertised to students all the great options that exist for good careers in the community without ever leaving the area. There needs to be one spot that houses all that information for students.
- Get students OMJ accounts during their junior year and incorporate the Job Ready Seal.
- School guidance counselors could work with OMJs on virtual job fairs for students and live chats with employers could be a part of it.
- Expand the pre covid teen job fairs to include subgroups for specific sector fairs: Customer Service/Banking, Manufacturing, Healthcare, Construction. Include the pay and benefits.
- Assist individuals in building effective resumes that give the employers a full description of prior experience, including volunteer time
- Need to build connections between employers and out of school youth
- Work (or act as convenor) with employers and high schools to create internships, apprenticeships, and/or mentorships
- Better/increased collaboration between employers and training providers facilitated via the BSR (Business Service Representatives) staff
- Provide employers with data on underrepresented populations growth in the next 5-10 years to provide awareness of recruitment opportunities.
- Financial planning for long-term success of jobseeker to avoid cycle of unemployment and assistance
- Education, community-based organizations, and employers work together to pursue solutions to the childcare problem
- Advocacy for a Mobility Manager position - a person that knows every form of transportation in the County as well as the routes. This person knows which agencies, nonprofits and community-based organizations have a bus that could potentially reduce duplicity and connect community partners.

Summary

The Employer Sessions provided a broad scope of insights from a diverse group of businesses. They had many of the concerns that are familiar to all employers: the need to hire entry workers and fill skills gaps and individuals lacking both soft skills and technical skills. Naturally, the technical skill varied depending on the industry.

Although there was nothing particularly glaring about the responses to the questions asked, it was evident that there are some areas lacking attention that could assist employers in building their employee base. For instance, the OMJ relationship deficit and absence of diversity, equity, and inclusion planning. Employers expressed the need for skilled workers and help recruiting employees, yet many were not utilizing services offered by the Area 20 workforce boards. And when asked about practices for

hiring underrepresented populations, the session participants were mostly quiet or struggled to answer the question. They do not know the potential for tapping into these populations to fill their hiring needs.

Additionally, there seems to be a lack of understanding by some of the employers concerning a livable wage to support a family. This was evident when specific wages were mentioned with concern over people not applying for the positions.

Overall, those utilizing Area 20 OMJ services were mostly satisfied, and they provided information to others in the sessions who were unfamiliar with OMJ services and funding available to assist them with their needs.

The employers were able to discuss possibilities for what could be offered through collaborative efforts and honest communication. And they were able to cite collaborative efforts that are working, could be replicated, and scaled; bridge programs and a pre-apprenticeship program for example. They shared suggestions related to recruitment, hiring, training and retention of employees that could be implemented in Area 20. They had specific ideas of how to implement changes and what partners could be involved.

4.5 Climate-Capabilities Matrix

Industry Selection

Thirty-four 4-digit NAICS industries within the major sectors are analyzed in the Climate-Capabilities Matrix for Ross County based on local employment in industries within targeted clusters.

Index Methodology

An index is created for both the external climate and Ross capabilities based on data compiled at the four-digit NAICS level. Both the external climate index and Ross capability index are calculated by first rank ordering each individual component of those indexes. A weight is assigned to each component and a weighted average of the composite index is calculated.⁸ The index is standardized to be between 1 and 100, with the higher number indicating a more favorable external climate or higher Ross capabilities. The combination of those two indexes identifies industries that are in the best position to expand because of strong capabilities in Ross as well as a favorable national and international climate for future growth.

External Climate, United States

National and global trends provide a more favorable climate for some regional industries than for others and it is important to understand this context to determine the capacity for growth and diversification of Ross's industries. The external climate represents the potential environment for growth in the nation and internationally. The national outlook for growth in industrial output provides a good indicator of the future market for an industry's goods or services, while the export growth trend indicates the market potential from global markets. Data on research and development spending as a percentage of sales and venture capital investment show the innovation potential of current industries, while data on industry multipliers indicate how effective investment in those industries will be in supporting other industries in the nation.

Ross Capabilities

Ross's industries differ in their positioning to take advantage of a favorable external climate or, conversely, they differ in their ability to compensate for an unfavorable external climate. The relative strengths and weaknesses of Ross's industries are referred to as "capabilities." As with the external climate indicators, Ross's capabilities provide measures to evaluate potential industries in terms of economic performance, innovative potential, and multiplier effects.

Economic performance considers the industry's competitiveness relative to the nation and its recent growth based on the assumption that industries that already perform well in Ross are in the best position for continued growth if the external environment is positive. Industry wages are considered relative to the average wage in the region across all industries, prioritizing opportunities for higher-paying work. Innovation potential is comprised of leading indicators that point to future

⁸ Weights were selected in consultation with Area 20 based on their importance to the economy and economic development goals.

development such as federal research and development contracts and patents assigned to firms in Ross. The industry multiplier identifies the extent to which the industry will create additional income and jobs for other industries in the state.

The data collected and used in the matrix are summarized in the table below.

Table 4.1: Variables Used in the Climate-Capabilities Matrix

Indicator	External Climate Index	Ross Capabilities Index
Economic Performance	<ul style="list-style-type: none"> Projected Output Growth Export Growth 	<ul style="list-style-type: none"> Industry Concentration (LQ) and Change in LQ Employment Growth Relative Wages and Wage Growth
Innovative Potential	<ul style="list-style-type: none"> R&D Spending as a Percent of Total Sales Venture Capital Spending 	<ul style="list-style-type: none"> R&D Federal Contract Spending Patents
Investment Ripple Effects	<ul style="list-style-type: none"> Industry Output (Sales) Multiplier 	<ul style="list-style-type: none"> Industry Output (Sales) Multiplier

Source: Chmura Economics & Analytics

Results and Recommendations

Figure 4.1 below summarizes the results of the climate-capabilities matrix in a chart divided into four quadrants. The relative internal capabilities of an industry determine its position left to right, while the relative external climate of the industry determines its position top to bottom of the chart.

Five 4-digit industries are identified that enjoy both favorable external climates and high capabilities in Ross, meaning those industries are **poised for growth**. Several of the strongest industries in this quadrant are in the healthcare and social assistance sector, including offices of physicians; continuing care retirement communities and assisted living facilities for the elderly; and residential intellectual and development disability, mental health, and substance abuse facilities. Architectural, engineering, and related services shows strong internal capabilities and external climate indicators in the long run. Manufacturing industries in this quadrant include motor vehicle body and trailer manufacturing.

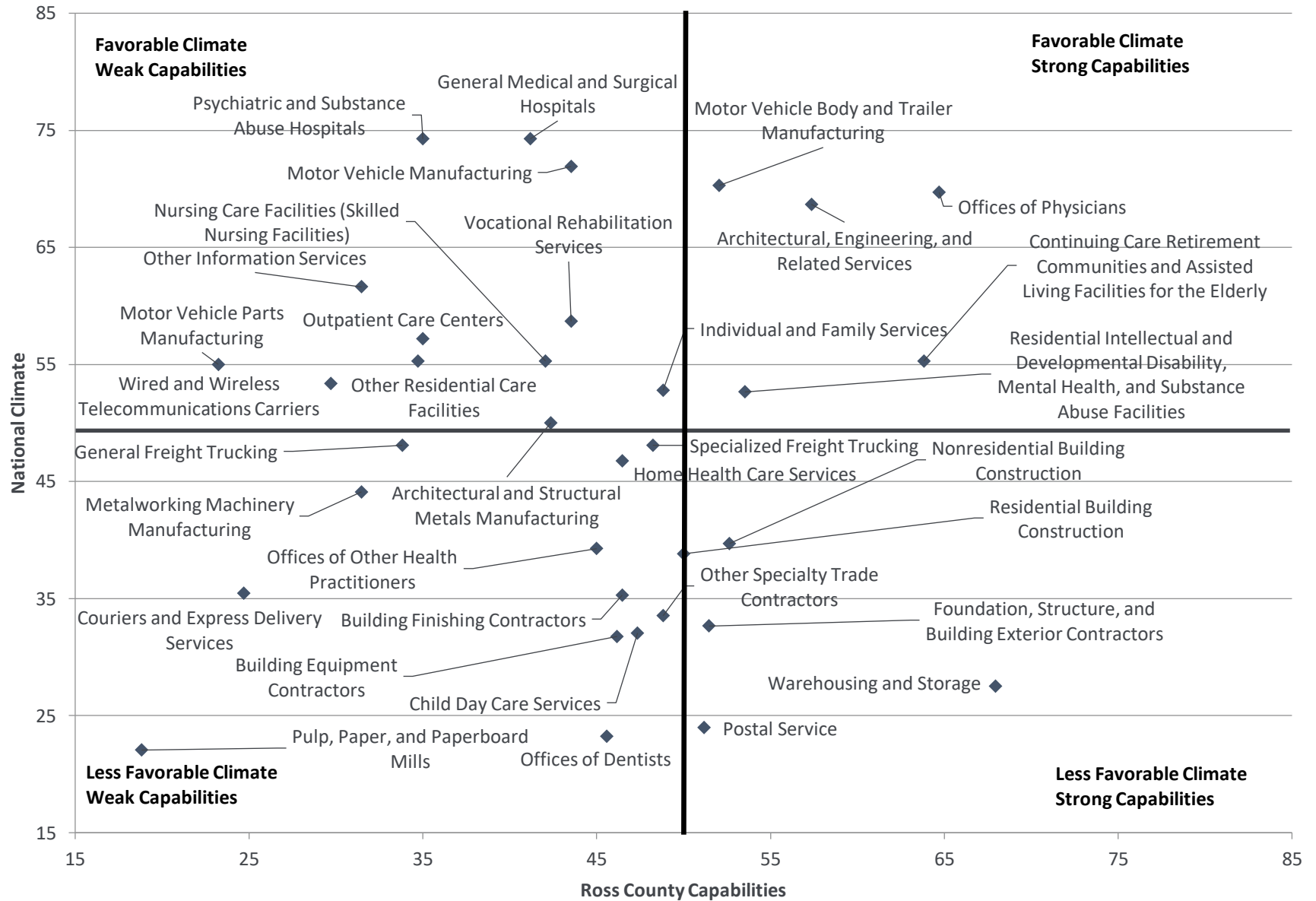
Twelve 4-digit industries are identified that have favorable external climates but lower capabilities in Ross. These represent **potential future growth industries, with an opportunity to capture the favorable external climate but also likely increased competition nationally**. General medical and surgical hospitals is at the top of the quadrant, driven by a high national climate score. Other industries include wired and wireless telecommunications carriers, vocational rehabilitation services, and skilled nursing facilities. Motor vehicle manufacturing and motor vehicle parts manufacturing, both part of the auto cluster in the region, have favorable national climate indicators but weaker internal capabilities, in part because of small or declining change in location quotient and limited indication of innovation investment to drive future long-term growth. While there is support from a favorable external climate, a risk of targeting growth in these industries is that it may not bear fruit in the short term, as Ross' companies will compete with firms in other states with potentially stronger positions. The long-term reward is also significant, however, as these industries can become future growth industries for Ross. Ross may improve its position by aligning its efforts in these areas with those in other regions and in the state.

Another Five 4-digit industries are identified that have less favorable climates but stronger capabilities in Ross, reflecting a specialization in Ross's industries compared to the nation. **Efforts in these industries may focus on increasing market share nationally and expanding current strong capabilities into innovative new areas**. Industries in this quadrant might be expected to have a stronger incentive to diversify due to the less favorable external climate. This quadrant includes several construction industries; warehousing and storage; foundation, structure, and building exterior contractors; and postal service.⁹

⁹ This analysis necessarily excludes some additional factors which may affect the outlook for some industries. For example, semiconductor and other electronic component manufacturing is impacted by federal regulations on the production of sensitive supplies for defense products. The CHIPS for America Act, though not yet law, is expected to provide more than \$22.8 billion in aid to secure supply chains by supporting semiconductor manufacturing and R&D. Source: <https://www.reuters.com/article/us-usa-semiconductors/u-s-lawmakers-propose-22-8-billion-in-aid-to-semiconductor-industry-idUSKBN23H39M>

Finally, 12 industries are identified that have both less favorable external climates and lower capabilities in Ross, suggesting a **greater potential need for innovation and diversification assistance**. Manufacturing industries in this quadrant include metalworking machine manufacturing. Several contractor industries are included in this quadrant. The relatively weak capabilities of general and specialized freight trucking also place that industry in this quadrant.

Figure 4.1: Climate-Capabilities Matrix



5. Industry-Specific Workforce Needs Assessment

5.1 Manufacturing

Over 4,000 workers are employed in manufacturing in Ross County as of the third quarter of 2020. Over the last five years, manufacturing employment declined at an average annual rate of 0.3%, faster than the average annual decline in total employment in the region of 0.1%. The decline was driven by losses in cement and concrete product manufacturing; converted paper product manufacturing; and remaining component industries. The largest manufacturing industries are detailed in the table below. The motor vehicle manufacturing cluster is evident, with high location quotients in motor vehicle manufacturing, motor vehicle body and trailer manufacturing, and motor vehicle parts manufacturing. Looking ahead, motor vehicle manufacturing is expected to grow at an average annual rate of 0.1% in the long run.

Table 5.1: Ross County Manufacturing Snapshot, 2020Q3

4-Digit Industry	Empl	Avg Ann Wages	LQ	5yr History	Annual Demand	Forecast Ann Growth
Motor Vehicle Manufacturing	2,048	\$55,570	45.99		222	0.1%
Pulp, Paper, and Paperboard Mills	849	\$70,363	46.00		79	-0.8%
Motor Vehicle Body and Trailer Manufacturing	329	\$51,341	11.13		32	-1.0%
Motor Vehicle Parts Manufacturing	327	\$44,328	3.14		34	-0.1%
Architectural and Structural Metals Manufacturing	78	\$41,775	1.01		8	-0.3%
Metalworking Machinery Manufacturing	70	\$61,937	2.08		7	-0.5%
Cement and Concrete Product Manufacturing	49	\$43,573	1.26		4	-2.4%
Other Food Manufacturing	38	\$45,739	0.81		5	0.8%
Other Miscellaneous Manufacturing	37	\$36,181	0.59		3	-0.8%
Converted Paper Product Manufacturing	30	\$36,899	0.58		3	-1.2%
Remaining Component Industries	205	\$31,549	0.55		17	-1.1%
Manufacturing	4,067	\$61,916	1.64		410	-0.3%

There are over 800 defined occupations at the detailed level. Among those occupations that support a living wage in manufacturing, maintenance and repair workers, general; paper goods machine setters, operators, and tenders; and first-line supervisors of production and operating workers are expected to have the most job openings over the next five years in Ross County. Note that half of the occupations have a declining growth forecast, reflecting an increasing trend of automation in the industry replacing demand for new workers. However, there is still annual demand (shown in the “total demand column”) due to workers retiring or otherwise leaving the workforce, as well as due to workers changing occupations.

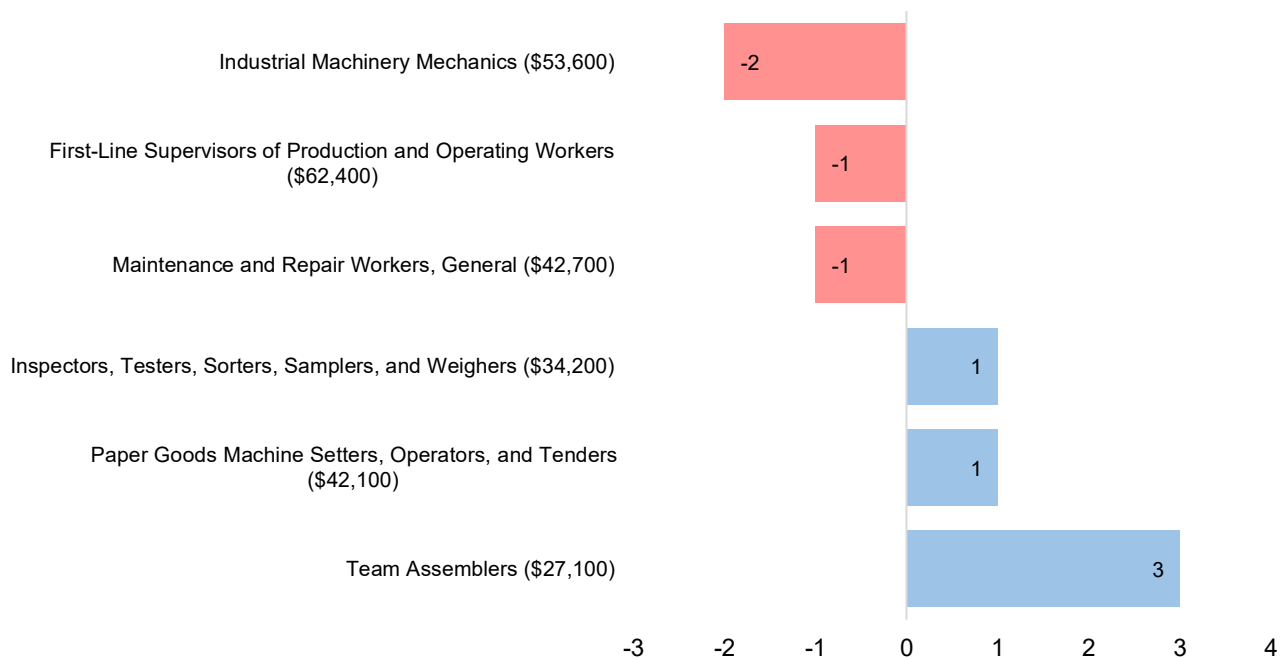
Table 5.2: Top In-Demand Occupations Paying a Living Wage

SOC	Occupation	Empl	Mean Ann Wages	Total Demand	Ann % Growth
49-9071	Maintenance and Repair Workers, General	253	\$42,700	122	0.0%
51-9196	Paper Goods Machine Setters, Operators, and Tenders	219	\$42,100	104	-0.9%
51-1011	First-Line Supervisors of Production and Operating Workers	157	\$62,400	80	0.0%
49-9041	Industrial Machinery Mechanics	121	\$53,600	66	1.3%
51-4121	Welders, Cutters, Solderers, and Brazers	101	\$41,700	56	0.0%
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	89	\$69,800	39	-0.2%
43-5061	Production, Planning, and Expediting Clerks	74	\$51,400	38	0.0%
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	47	\$63,800	21	-1.2%
51-4111	Tool and Die Makers	31	\$43,900	14	-0.6%
49-9099	Installation, Maintenance, and Repair Workers, All Other	27	\$53,900	14	-0.2%

Source: JobsEQ® by Chmura

Chmura’s long-run growth model of population growth, mobility, and educational attainment indicates several potential occupation gaps between supply of workers and demand by employers. As shown in the chart below, there is a potential undersupply of 2 industrial machinery mechanics each year in the region over the next decade. Other occupations with potential supply gaps include first-line supervisors of production and operating workers (1); and maintenance and repair workers, general (1). The region also has a potential surplus of more workers available than demanded by employers in some occupations, including team assemblers (3 each year); paper goods machine settlers, operators, and tenders (1); and inspectors, sorters, samplers, and weighers (1). Despite a potential surplus, employers may still face difficulty finding some workers due to short-term gaps in wages and specific skills.

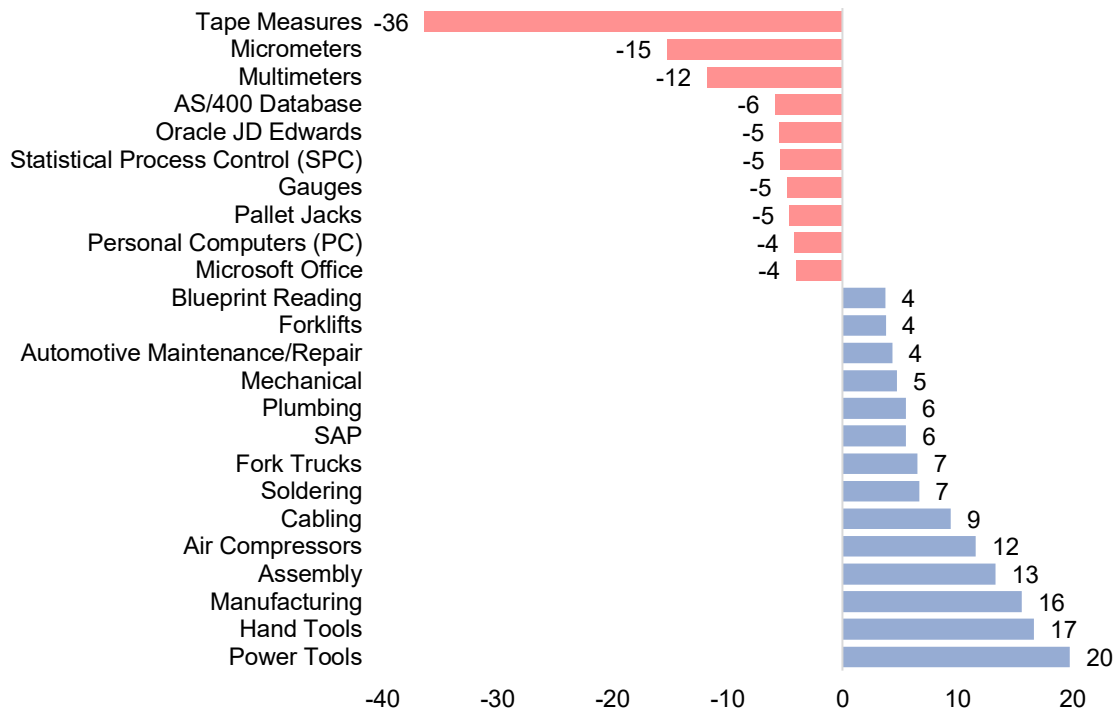
Figure 5.1: Occupation Gaps Manufacturing, Ross County



Source: JobsEQ, wages as of 2019

Skill gaps data are based on online resumes and job ads that reflect local supply and demand. The largest gaps between skills employers request in job ads and what potential candidates list on their resumes relate to measurements, including tape measures, micrometers, multimeters, and gauges. There is also an indication of undersupply of computer proficiency in AS/400 database, Oracle JD Edwards, and Microsoft Office. These databases also indicate a potential surplus of skills with power and hand tools, manufacturing, assembly, and other skills.

Figure 5.2: Skill Gaps, Manufacturing, Ross County



Source: JobsEQ, wages as of 2019

Commuting patterns by occupation reveal residents are willing to travel outside of Ross County to earn higher wages in some occupations. This analysis expands beyond the labor shed region to include any areas where Ross County residents work. Pre-pandemic, maintenance and repair workers willing to commute out work in counties with an average entry-level wage of \$13.38 for that occupation, 28 cents greater than the average entry-level wage in Ross. Team assemblers could earn 90 cents more hourly outside the region. The table below details the top 15 manufacturing occupations by number of commuters out of the area and the potential entry-level wage difference.

Table 5.3: Average Entry-Level Wages Earned by Commuters, Ross County

SOC	Occupation Title	Commute out of Ross County	Live and work in Ross County	Average entry-level wage difference	Total Commuters
49-9071	Maintenance and Repair Workers, General	\$13.38	\$13.10	\$0.28	111
51-2092	Team Assemblers	\$11.31	\$10.41	\$0.90	75
51-1011	First-Line Supervisors of Production and Operating Workers	\$20.27	\$18.43	\$1.84	47
49-9041	Industrial Machinery Mechanics	\$18.20	\$17.37	\$0.83	43
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	\$12.53	\$11.07	\$1.47	42
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	\$21.20	\$20.83	\$0.37	38
51-4041	Machinists	\$14.88	\$12.89	\$1.99	34

Table 5.3: Average Entry-Level Wages Earned by Commuters, Ross County

SOC	Occupation Title	Commute out of Ross County	Live and work in Ross County	Average entry-level wage difference	Total Commuters
51-4121	Welders, Cutters, Solderers, and Brazers	\$14.67	\$14.40	\$0.27	30
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	\$12.34	\$11.46	\$0.88	23
51-9111	Packaging and Filling Machine Operators and Tenders	\$11.98	\$13.14	-\$1.15	23
51-4072	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	\$11.89	\$10.30	\$1.59	21
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	\$13.17	\$11.73	\$1.44	19
51-9199	Production Workers, All Other	\$11.15	\$9.87	\$1.29	16
49-9099	Installation, Maintenance, and Repair Workers, All Other	\$13.58	\$13.51	\$0.08	16
51-2099	Assemblers and Fabricators, All Other	\$11.30	\$10.44	\$0.87	14

Source: JobsEQ® by Chmura, Occupation wage data as of 2019

5.2 Healthcare

Nearly 7,800 workers are employed in healthcare and social assistance in Ross County as of the third quarter of 2020. The largest healthcare industries are detailed in the table below. General medical and surgical hospitals is the largest sector by employment and is expected to have annual demand for 204 workers. The fastest-growing industries include individual and family services (3.3%), home health care services (2.4%), and outpatient care centers (2.0%). Overall, the industry is expected to grow at an average annual rate of 0.6% with demand for 775 workers each year.

Table 5.4: Ross County Healthcare Snapshot, 2020Q3

4-Digit Industry	Empl	Avg Ann Wages	LQ	5yr History	Annual Demand	Forecast Ann Growth
General Medical and Surgical Hospitals	2,712	\$67,634	2.29		204	-0.1%
Psychiatric and Substance Abuse Hospitals	1,453	\$75,844	29.58		137	0.5%
Nursing Care Facilities (Skilled Nursing Facilities)	607	\$34,140	1.93		59	-0.5%
Individual and Family Services	595	\$31,846	1.06		92	3.3%
Outpatient Care Centers	338	\$55,390	1.65		35	2.0%
Vocational Rehabilitation Services	311	\$29,497	4.91		32	-1.0%
Home Health Care Services	304	\$29,806	0.94		39	2.4%
Offices of Dentists	254	\$40,392	1.41		22	0.1%
Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities	243	\$30,443	1.66		32	1.1%
Offices of Physicians	217	\$128,244	0.40		18	0.6%
Remaining Component Industries	721	\$32,071	1.03		79	0.5%
Health Care and Social Assistance	7,755	\$56,445	1.75		775	0.6%

Among those occupations that support a living wage in healthcare, registered nurses; licensed practical and licensed vocational nurses; and medical and health services managers are expected to have the most job openings over the next five years in Ross. Note that all occupations have a positive growth forecast, reflecting the growing needs of an aging U.S. population. Healthcare is one of the industries Ross County can expect to see the most growth in the coming years, with an expanding number of jobs.

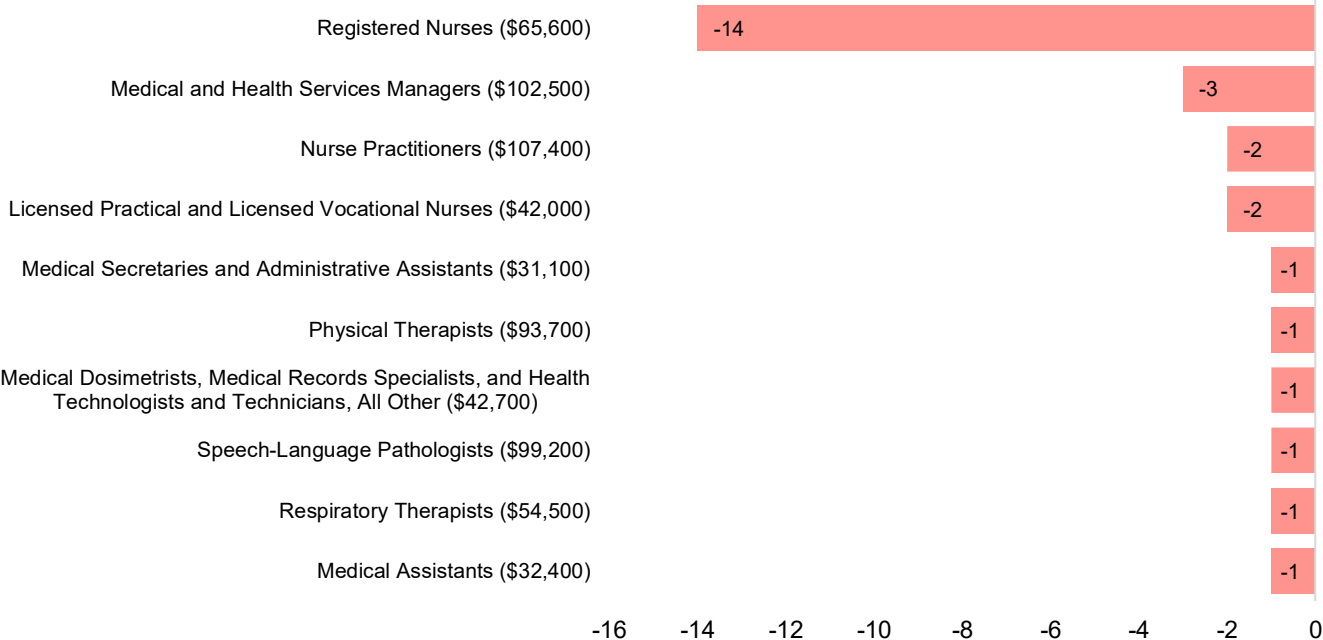
Table 5.5: Top In-Demand Occupations Paying a Living Wage

SOC	Occupation	Empl	Mean Ann Wages	Total Demand	Ann % Growth
29-1141	Registered Nurses	1,338	\$65,600	371	0.1%
29-2061	Licensed Practical and Licensed Vocational Nurses	233	\$42,000	90	0.2%
11-9111	Medical and Health Services Managers	128	\$102,500	71	2.1%
31-9091	Dental Assistants	80	\$39,900	46	0.3%
29-2098	Medical Dosimetrists, Medical Records Specialists, and Health Technologists and Technicians, All Other	103	\$42,700	35	0.2%
29-1171	Nurse Practitioners	56	\$107,400	26	3.0%
31-2021	Physical Therapist Assistants	33	\$67,400	24	1.6%
29-1292	Dental Hygienists	61	\$69,000	21	0.2%
29-2034	Radiologic Technologists and Technicians	73	\$55,600	20	0.0%
29-1126	Respiratory Therapists	57	\$54,500	19	1.3%
29-1141	Registered Nurses	1,338	\$65,600	371	0.1%
29-2061	Licensed Practical and Licensed Vocational Nurses	233	\$42,000	90	0.2%

Source: JobsEQ® by Chmura

Chmura’s long-run growth model of population growth, mobility, and educational attainment indicates several potential occupation gaps between supply of workers and demand by employers. As shown in the chart below, there is a potential undersupply of 14 registered nurses each year in the region over the next decade. Other potential supply gaps include medical and health services managers (3), nurse practitioners (2), and licensed practical and licensed vocational nurses (2).

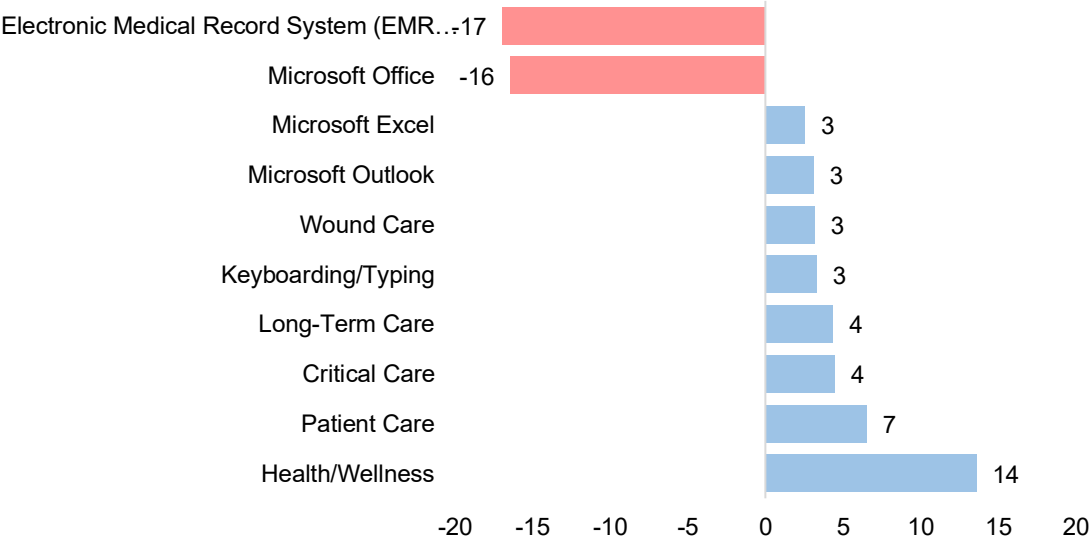
Figure 5.3: Occupation Gaps Healthcare, Ross County



Source: JobsEQ, wages as of 2019

Skill gaps data are based on online resumes and job ads that reflect local supply and demand. The largest gaps between skills employers request in job ads and what potential candidates list on their resumes relate to computer proficiency, including electronic medical record systems (EMR System) and Microsoft Office. There is also an indication of oversupply of health and wellness and many personal care skills, such as patient care, critical care, long-term care, and wound care.

Figure 5.4: Skill Gaps, Healthcare, Ross County



Source: JobsEQ, wages as of

Commuting patterns by occupation reveal residents are willing to travel outside of Ross County to earn higher wages in some occupations. Pre-pandemic, nursing assistants willing to commute out of the region work in counties with an average entry-level wage of \$11.07 for that occupation, an estimated 31 cents greater than the average entry-level wage in Ross. Licensed practical and licensed vocational nurses could earn 57 cents more hourly outside the region. The table below details the top 15 healthcare occupations which typically require an associate’s degree or less by number of commuters out of the area and the potential entry-level wage difference.

Table 5.6: Average Entry-Level Wages Earned by Commuters, Ross County

SOC	Occupation Title	Commute out of Ross County	Live and work in Ross County	Average entry-level wage difference	Total Commuters
31-1131	Nursing Assistants	\$11.07	\$10.76	\$0.31	65
29-2061	Licensed Practical and Licensed Vocational Nurses	\$16.97	\$16.40	\$0.57	36
31-1121	Home Health Aides	\$9.88	\$9.86	\$0.03	30
31-9092	Medical Assistants	\$12.96	\$12.74	\$0.22	20
29-2052	Pharmacy Technicians	\$11.49	\$11.70	-\$0.21	19
43-6013	Medical Secretaries and Administrative Assistants	\$12.61	\$11.42	\$1.19	17
29-1292	Dental Hygienists	\$29.12	\$27.48	\$1.64	15
29-2034	Radiologic Technologists and Technicians	\$21.65	\$21.41	\$0.24	14
31-2021	Physical Therapist Assistants	\$21.67	\$25.10	-\$3.43	12
29-1126	Respiratory Therapists	\$21.90	\$21.03	\$0.88	12
29-2098	Medical Dosimetrists, Medical Records Specialists, and Health Technologists and Technicians, All Other	\$14.26	\$14.55	-\$0.29	10
29-2055	Surgical Technologists	\$17.66	\$16.66	\$0.99	8
29-2056	Veterinary Technologists and Technicians	\$11.78	\$9.21	\$2.57	7
31-9091	Dental Assistants	\$13.74	\$13.60	\$0.14	5
29-2057	Ophthalmic Medical Technicians	\$14.18	\$11.84	\$2.34	5

Source: JobsEQ® by Chmura, Occupation wage data as of 2019

5.3 Information Technology

Nearly 250 workers are employed in information technology industries in Ross County as of the third quarter of 2020. The largest tech industries are detailed in the table below. Overall, the location quotient of 0.15 indicates employment in this industry accounts for a much smaller share of employment locally as in the nation. Wired telecommunications carriers employs the most workers, followed by engineering services, and both are forecast to decline. Faster-growing industries include computer systems design services and data processing, hosting, and related services. Overall, information technology is expected to decline at an average annual rate of 1.4% in the long run in Ross County.

Table 5.7: Ross County Information Technology Snapshot, 2020Q3




6-Digit Industry	Empl	Avg Ann Wages	LQ	5yr History	Annual Demand	Forecast Ann Growth
Wired Telecommunications Carriers	116	\$42,592	1.15		9	-2.1%
Engineering Services	41	\$54,766	0.19		3	-0.4%
Other Communications Equipment Manufacturing	23	\$78,294	6.36		1	-4.1%

Table 5.7: Ross County Information Technology Snapshot, 2020Q3

6-Digit Industry	Empl	Avg Ann Wages	LQ	5yr History	Annual Demand	Forecast Ann Growth
Computer Systems Design Services	19	\$142,663	0.09		2	1.2%
Data Processing, Hosting, and Related Services	12	\$57,546	0.16		1	0.2%
Custom Computer Programming Services	8	\$53,688	0.04		1	-0.1%
Wireless Telecommunications Carriers (except Satellite)	4	\$46,277	0.19		0	-2.1%
Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	3	\$61,475	0.03		0	0.0%
Internet Publishing and Broadcasting and Web Search Portals	2	\$18,332	0.03		0	-1.5%
Software Publishers	1	\$19,298	0.01		0	-1.9%
Remaining Component Industries	2	\$12,916	0.03		0	-1.6%
Information Technology	235	\$57,007	0.15		18	-1.4%

Source: JobsEQ® by Chmura

Among those occupations that support a living wage in information technology, software developers and software quality assurance analysts and testers; computer user support specialists; and computer systems analysts are expected to have the most job openings over the next five years in Ross County. Note that most occupations have a declining growth forecast. Growth instead will be focused almost exclusively in software development and quality assurance, as well as information security.

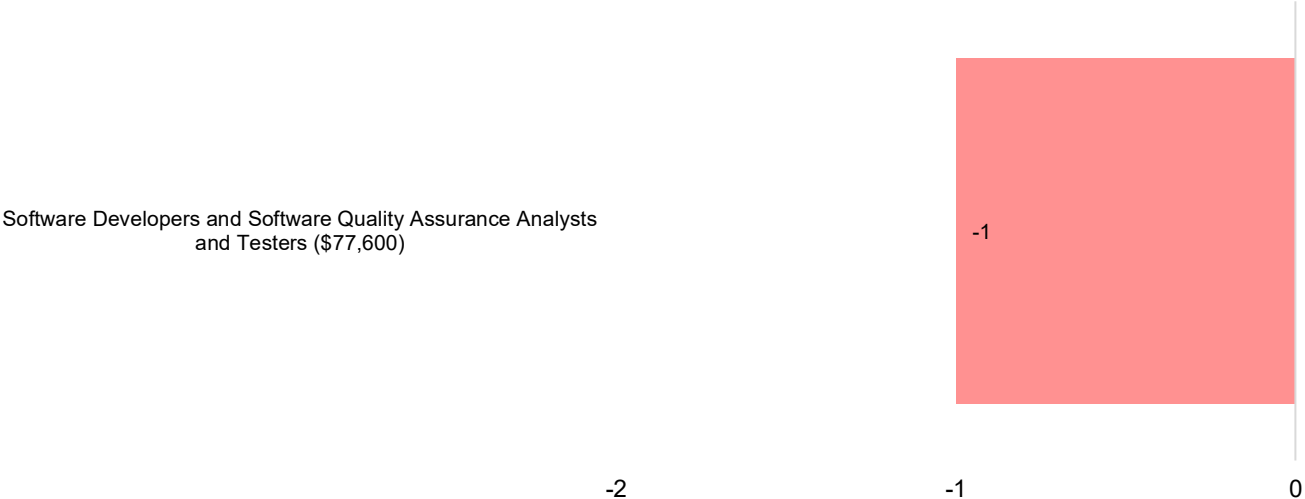
Table 5.8: Top In-Demand Occupations Paying a Living Wage

SOC	Occupation	Empl	Mean Ann Wages	Total Demand	Ann % Growth
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	74	\$77,600	30	0.8%
15-1232	Computer User Support Specialists	63	\$46,300	24	-0.4%
15-1211	Computer Systems Analysts	63	\$76,600	21	-0.4%
15-1244	Network and Computer Systems Administrators	37	\$73,800	12	-0.4%
15-1299	Computer Occupations, All Other	27	\$63,900	10	-0.3%
15-1231	Computer Network Support Specialists	24	\$64,500	9	-0.3%
15-1257	Web Developers and Digital Interface Designers	11	\$61,700	4	-0.3%
15-1245	Database Administrators and Architects	10	\$79,100	4	0.1%
15-1212	Information Security Analysts	8	\$85,500	4	1.5%
15-1251	Computer Programmers	12	\$76,900	3	-2.1%
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	74	\$77,600	30	0.8%

Source: JobsEQ® by Chmura

Chmura’s long-run growth model of population growth, mobility, and educational attainment indicates a potential occupation gap between supply of workers and demand by employers. As shown in the chart below, there is a potential undersupply of 1 software developer and software quality assurance analyst and tester each year in the region over the next decade.

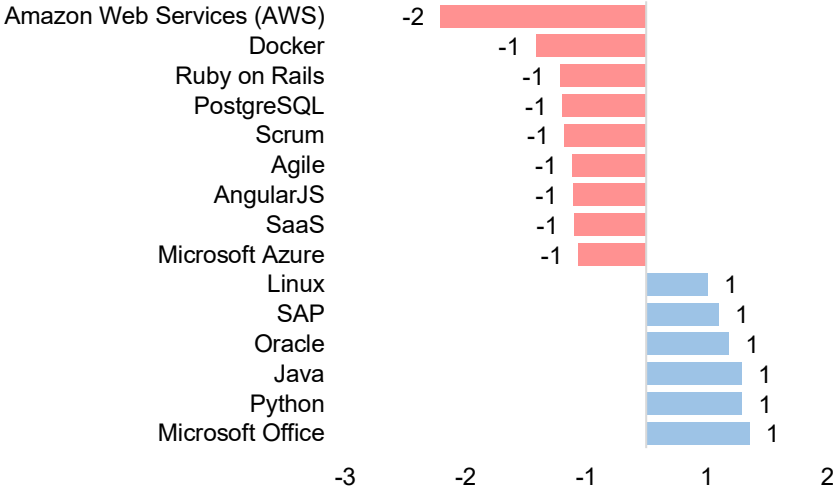
Figure 5.5: Occupation Gaps Information Technology, Ross County



Source: JobsEQ, wages as of 2019

Skill gaps data are based on online resumes and job ads that reflect local supply and demand. The largest gaps between skills employers request in job ads and what potential candidates list on their resumes relate to specific programming environments and languages, including Amazon Web Services (AWS), Docker, Ruby on Rails, PostgreSQL, Scrum, Agile, AngularJS, SaaS, and Microsoft Azure. These databases also indicate a potential surplus of skills with Microsoft Office, Python, Java, Oracle, SAP, and Linux for the type of work needed locally.

Figure 5.6: Skill Gaps, Information Technology, Ross County



Source: JobsEQ, wages as

Commuting patterns by occupation reveal residents are willing to travel outside of Ross County to earn higher wages in some occupations. Pre-pandemic, computer user support specialists willing to commute worked in counties with an average entry-level wage of \$17.04 for that occupation, or 86 cents greater than the average entry-level wage in Ross County for that occupation. Computer network support specialists could earn 79 cents less hourly outside the region, while web developers and

digital interface designers earned 67 cents on average less an hour. The table below details the top Information Technology occupations which require an associate’s degree or less by number of commuters out of the area and the potential entry-level wage difference.

Table 5.9: Average Entry-Level Wages Earned by Commuters, Ross County

SOC	Occupation Title	Commute out of Ross County	Live and work in Ross County	Average entry-level wage difference	Total Commuters
15-1232	Computer User Support Specialists	\$17.04	\$16.19	\$0.86	12
15-1231	Computer Network Support Specialists	\$19.17	\$19.97	-\$0.79	1
15-1257	Web Developers and Digital Interface Designers	\$15.89	\$16.56	-\$0.67	1

Source: JobsEQ® by Chmura, Occupation wage data as of 2019

5.4 Construction

More than 1,100 workers are employed in construction in Ross County as of the third quarter of 2020. The largest construction industries are detailed in the table below. Building equipment contractors employs the most individuals, followed by residential building construction and nonresidential building construction. Looking ahead, the building equipment contractors industry is expected to need 34 workers each year, and residential and nonresidential building construction are expected to need 19 and 17 each year respectively. Overall, employment in construction is forecast to decline at an average annual rate of 0.2%, but land subdivision (0.2%) and highway, street, and bridge construction (0.1%) are expected to expand.

Table 5.10: Ross County Construction Snapshot, 2020Q3

4-Digit Industry	Empl	Avg Ann Wages	LQ	5yr History	Annual Demand	Forecast Ann Growth
Building Equipment Contractors	333	\$48,779	0.71		34	0.0%
Residential Building Construction	213	\$34,921	0.93		19	-0.3%
Nonresidential Building Construction	180	\$59,317	1.06		17	0.0%
Other Specialty Trade Contractors	169	\$32,726	0.87		17	-0.2%
Building Finishing Contractors	93	\$31,765	0.39		8	-0.6%
Foundation, Structure, and Building Exterior Contractors	90	\$33,147	0.42		9	-0.4%
Highway, Street, and Bridge Construction	24	\$67,386	0.24		2	0.1%
Utility System Construction	16	\$57,734	0.15		2	0.0%
Other Heavy and Civil Engineering Construction	2	\$57,229	0.08		0	-0.5%
Land Subdivision	1	\$13,637	0.07		0	0.2%
Construction	1,121	\$43,299	0.64		108	-0.2%

Among those occupations that support a living wage in construction, construction laborers; electricians; and carpenters are expected to have the most job openings over the next five years in Ross County. Growth in these occupations is expected to be mixed, with some occupations to projected to have positive growth while others will have negative growth. However, the annual

demand for workers (shown in the “total demand column”) due to workers retiring, changing occupations, or otherwise leaving the workforce is still high. Construction will remain a steady source of jobs for Ross County into the future.

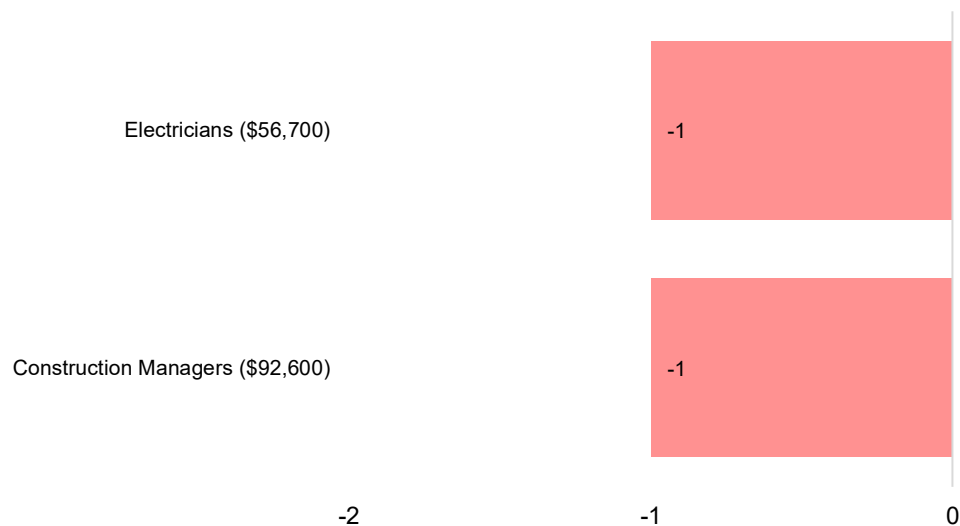
Table 5.11: Top In-Demand Occupations Paying a Living Wage

SOC	Occupation	Empl	Mean Ann Wages	Total Demand	Ann % Growth
47-2061	Construction Laborers	199	\$43,300	110	0.0%
47-2111	Electricians	129	\$56,700	78	0.3%
47-2031	Carpenters	137	\$52,800	65	-0.5%
47-2152	Plumbers, Pipefitters, and Steamfitters	100	\$46,300	56	0.1%
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	78	\$43,400	38	0.0%
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	69	\$70,400	36	-0.1%
11-9021	Construction Managers	79	\$92,600	29	0.1%
47-2073	Operating Engineers and Other Construction Equipment Operators	50	\$60,300	28	-0.1%
47-2141	Painters, Construction and Maintenance	43	\$50,000	21	-0.3%
37-1012	First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers	27	\$60,800	17	1.0%

Source: JobsEQ® by Chmura

Chmura’s long-run growth model of population growth, mobility, and educational attainment indicates two potential occupation gaps between supply of workers and demand by employers. As shown in the chart below, there is a potential undersupply of 1 electrician each year in the region over the next decade. In addition, there is a potential undersupply of 1 construction manager each year over the same period.

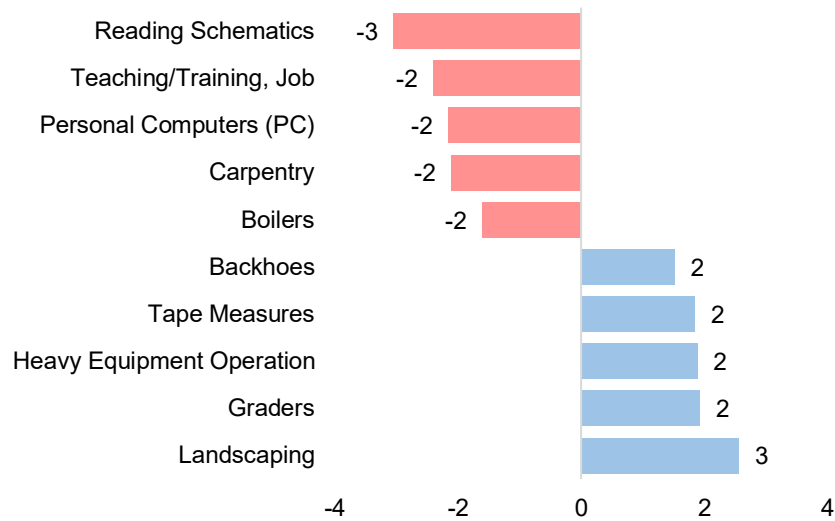
Figure 5.7: Occupation Gaps Construction, Ross County



Source: JobsEQ, wages as of 2019

Skill gaps data are based on online resumes and job ads that reflect local supply and demand. The largest gaps between skills employers request in job ads and what potential candidates list on their resumes are in reading schematics, personal computers (PCs), carpentry, and boilers. There is also an indication of undersupply of more experienced workers to provide job teaching and training. There is a potential oversupply of workers skilled in landscaping, graders, heavy equipment operation, tape measures, and backhoes.

Figure 5.8: Skill Gaps, Construction, Ross County



Source: JobsEQ, wages as

Commuting patterns by occupation reveal residents are willing to travel outside of Ross County to earn higher wages in some occupations. Pre-pandemic, construction laborer willing to commute outside their home counties work in counties with an average entry-level wage of \$14.26 for that occupation, or \$1.08 greater per hour than the average entry-level wage in Ross. Carpenters could earn \$1.15 more hourly outside the region, while electricians earn \$1.72 less. The table below details the top 15 construction occupations by number of commuters out of the area and the potential entry-level wage difference.

Table 5.12: Average Entry-Level Wages Earned by Commuters, Ross County

SOC	Occupation Title	Commute out of Ross County	Live and work in Ross County	Average entry-level wage difference	Total Commuters
47-2061	Construction Laborers	\$14.26	\$13.18	\$1.08	115
47-2031	Carpenters	\$16.67	\$15.52	\$1.15	73
47-2111	Electricians	\$16.18	\$17.90	-\$1.72	59
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	\$23.66	\$22.52	\$1.14	56
47-2152	Plumbers, Pipefitters, and Steamfitters	\$16.53	\$14.64	\$1.90	47
47-2073	Operating Engineers and Other Construction Equipment Operators	\$19.28	\$21.11	-\$1.83	44
37-3011	Landscaping and Groundskeeping Workers	\$11.05	\$9.79	\$1.26	40
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	\$15.29	\$14.77	\$0.52	29
47-2141	Painters, Construction and Maintenance	\$14.90	\$16.13	-\$1.23	22
47-4051	Highway Maintenance Workers	\$15.57	\$11.57	\$4.00	18
47-2211	Sheet Metal Workers	\$17.59	\$13.27	\$4.31	12
47-4071	Septic Tank Servicers and Sewer Pipe Cleaners	\$13.94	\$13.66	\$0.28	11
47-2051	Cement Masons and Concrete Finishers	\$15.71	\$13.62	\$2.09	10
47-2181	Roofers	\$16.11	\$10.61	\$5.50	7
47-2221	Structural Iron and Steel Workers	\$22.32	\$31.19	-\$8.87	6

Source: JobsEQ® by Chmura, Occupation wage data as of 2019

5.5 Transportation/Logistics

Over 1,100 workers are employed in transportation and logistics industries in Ross County as of the third quarter of 2020. The largest industries in this sector are detailed in the table below. As shown in Section 3, the warehousing and storage industry has been expanding rapidly in the labor shed region and the industry is expected to continue to grow at an average annual rate of 0.5% in Ross County. General freight trucking and couriers and express delivery services account for the greatest share of employment in transportation/logistics at over 500 workers combined, but general freight trucking is expected to decline. However, due to demand from retirements and transfers to other jobs, general freight trucking is expected to need 26 workers each year, and couriers and express delivery services, expected to grow over the same period, is expected to need 31. Overall, transportation/logistics is expected to grow at an average annual rate of 0.4% with annual demand for 126 workers.

Table 5.13: Ross County Transportation/Logistics Snapshot, 2020Q3

4-Digit Industry	Empl	Avg Ann Wages	LQ	5yr History	Annual Demand	Forecast Ann Growth
General Freight Trucking	259	\$53,155	1.10		26	-0.5%
Couriers and Express Delivery Services	255	\$41,903	1.58		31	0.6%
Specialized Freight Trucking	167	\$73,351	1.82		17	-0.2%
Local Messengers and Local Delivery	130	\$27,529	4.04		18	3.6%
Postal Service	121	\$55,587	1.00		6	-2.0%
Warehousing and Storage	98	\$34,116	0.36		12	0.5%
Other Transit and Ground Passenger Transportation	36	\$15,680	1.36		5	1.9%
Rail Transportation	24	\$82,964	0.78		2	-0.9%
Support Activities for Road Transportation	15	\$41,688	0.57		2	0.4%
Urban Transit Systems	14	\$49,725	0.29		2	0.2%
Remaining Component Industries	24	\$32,001	0.20		3	-0.2%
Transportation and Warehousing	1,144	\$45,937	0.80		126	0.4%

Among those occupations that support a living wage in transportation and logistics, light truck drivers; passenger vehicle drivers, except bus drivers, transit and intercity; and industrial truck and tractor operators are expected to have the most job openings over the next five years in Ross. Most of these occupations have a positive growth forecast. There is still annual demand (shown in the “total demand column”) due to workers retiring, changing occupations or otherwise leaving the workforce.

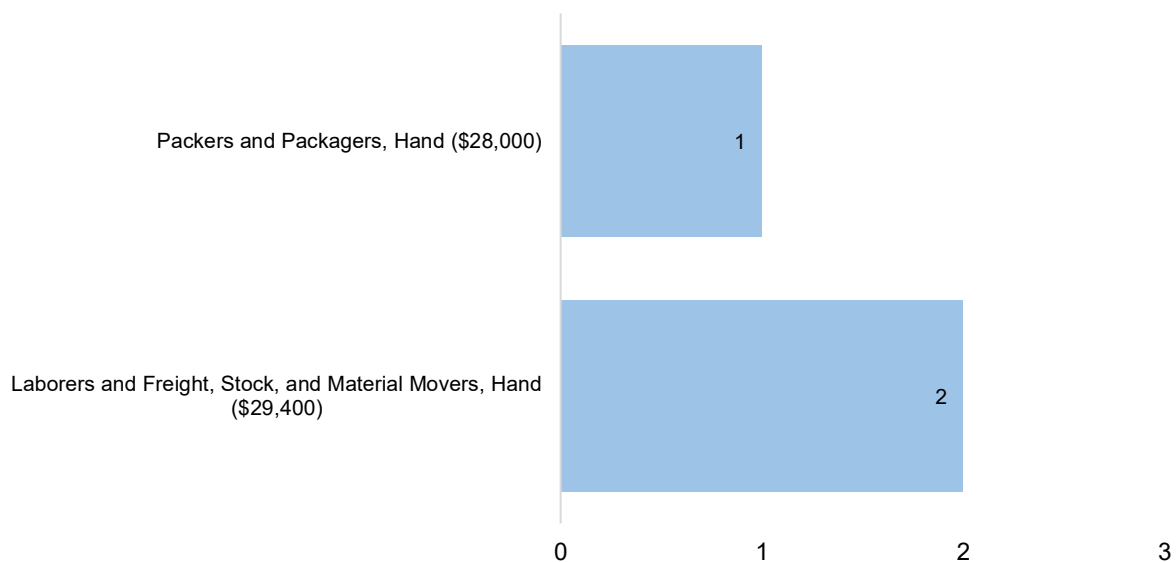
Table 5.14: Top In-Demand Occupations Paying a Living Wage

SOC	Occupation	Empl	Mean Ann Wages	Total Demand	Ann % Growth
53-3033	Light Truck Drivers	324	\$41,900	231	1.8%
53-3058	Passenger Vehicle Drivers, Except Bus Drivers, Transit and Intercity	99	\$46,200	63	0.4%
53-7051	Industrial Truck and Tractor Operators	105	\$45,000	58	-0.2%
53-1047	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	78	\$52,400	44	0.4%
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	49	\$41,600	23	0.0%
53-3052	Bus Drivers, Transit and Intercity	21	\$49,600	14	0.7%
13-1081	Logisticians	22	\$75,800	11	0.1%
11-3071	Transportation, Storage, and Distribution Managers	19	\$91,800	8	0.1%
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	18	\$53,300	8	-0.6%
43-5011	Cargo and Freight Agents	6	\$39,200	3	0.3%

Source: JobsEQ® by Chmura

Chmura’s long-run growth model of population growth, mobility, and educational attainment indicates there are no potential occupation gaps between supply of workers and demand by employers. As shown in the chart below, there is only a potential surplus of more workers available than demanded by employers in some occupations each year over the next decade, including hand laborers and freight, stock, and material movers (2) and hand packers and packagers (1).

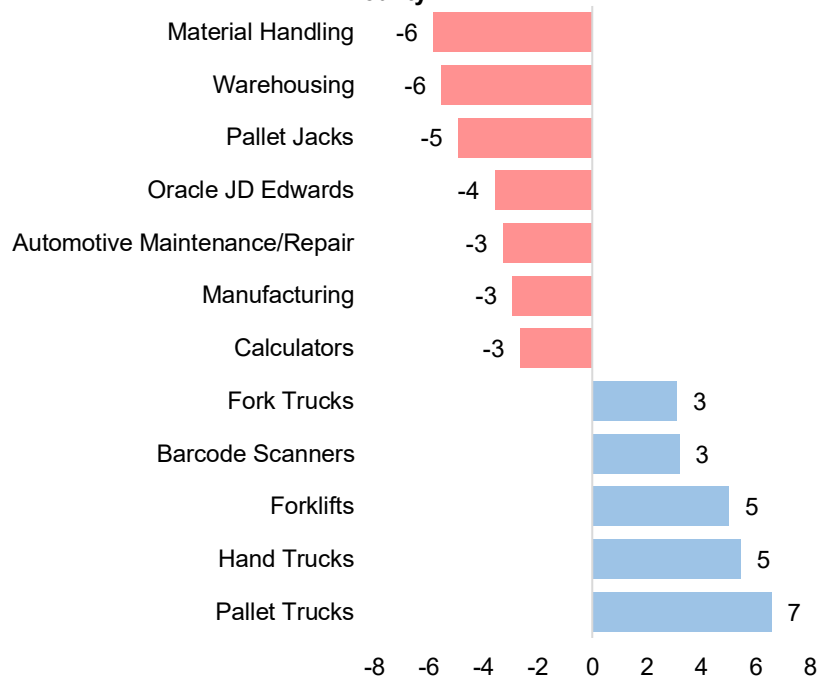
Figure 5.9: Occupation Gaps Transportation and Warehousing, Ross County



Source: JobsEQ, wages as of 2019

Skill gaps data are based on online resumes and job ads that reflect local supply and demand. The largest gaps between skills employers request in job ads and what potential candidates list on their resumes relate to warehouses, including material handling, warehousing, and pallet jacks. There is also an indication of undersupply of automotive maintenance and repair, manufacturing, calculators, and computer proficiency in Oracle JD Edwards. These databases also indicate a potential surplus of operational skills, including pallet trucks, hand trucks, forklifts, and fork trucks, as well as barcode scanners.

Figure 5.10: Skill Gaps, Transportation/Logistics, Ross County



Source: JobsEQ, wages

Commuting patterns by occupation reveal residents are willing to travel outside of Ross County to earn higher wages in some occupations. Pre-pandemic, laborers and freight, stock, and material movers willing to commute out of their home counties work in counties with an average entry-level wage of \$11.07 for that occupation, 69 cents greater than the average entry-level wage for that occupation in Ross. Heavy and tractor-trailer drivers could earn \$2.59 more hourly outside the region. The table below details the top 15 transportation/logistics occupations by number of commuters out of the area and the potential entry-level wage difference.

Table 5.15: Average Entry-Level Wages Earned by Commuters, Ross County

SOC	Occupation Title	Commute out of Ross County	Live and work in Ross County	Average entry-level wage difference	Total Commuters
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	\$11.07	\$10.38	\$0.69	189
53-3032	Heavy and Tractor-Trailer Truck Drivers	\$14.37	\$11.78	\$2.59	169
53-3033	Light Truck Drivers	\$11.04	\$11.07	-\$0.03	80
53-7051	Industrial Truck and Tractor Operators	\$13.88	\$15.28	-\$1.39	65
49-3023	Automotive Service Technicians and Mechanics	\$11.92	\$10.89	\$1.03	53
53-1047	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	\$16.88	\$15.67	\$1.21	31
53-7064	Packers and Packagers, Hand	\$10.80	\$11.04	-\$0.24	31
53-3058	Passenger Vehicle Drivers, Except Bus Drivers, Transit and Intercity	\$10.30	\$10.07	\$0.23	29
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	\$16.16	\$12.02	\$4.14	25
53-7061	Cleaners of Vehicles and Equipment	\$10.21	\$11.02	-\$0.81	12
49-3021	Automotive Body and Related Repairers	\$14.05	\$12.88	\$1.17	11
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	\$18.61	\$17.31	\$1.30	11
53-3052	Bus Drivers, Transit and Intercity	\$15.31	\$16.14	-\$0.83	10

Table 5.15: Average Entry-Level Wages Earned by Commuters, Ross County

SOC	Occupation Title	Commute out of Ross County	Live and work in Ross County	Average entry-level wage difference	Total Commuters
53-6021	Parking Attendants	\$9.35	\$9.25	\$0.10	7
49-3093	Tire Repairers and Changers	\$10.76	\$9.98	\$0.78	7

Source: JobsEQ® by Chmura, Occupation wage data as of 2019

6. Wage and Benefit Survey

6.1 Methodology

The Area 20 Workforce Development Region Wage and Benefit Survey was distributed to employers in the Area 20 region and surrounding areas to collect feedback from employers on the available job openings in their organization and their structures surrounding wages and benefits for these positions. The survey was distributed via a link that was sent in mass distribution emails and newsletters to employers and workforce boards in the region. The survey was open for three weeks through March and April and collected responses from 136 individuals.

6.2 Respondent Location

Respondents identified the county in which their company is located. Half of respondents' companies (50.0%, 67) are located in Fairfield, followed by 18.7% (25) located in Pickaway County. Other counties identified included Athens, Franklin, Licking, and Madison.

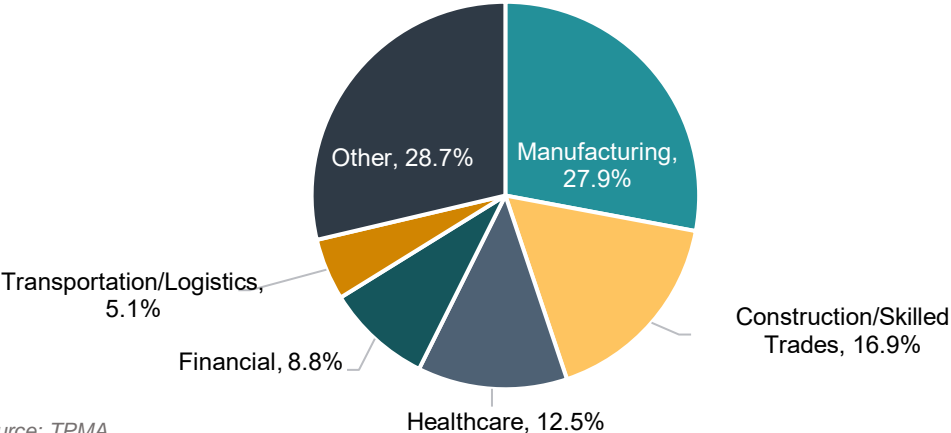
Table 6.1: Survey Respondent Locations

County	Count	Percent
Fairfield	67	50.0%
Pickaway	25	18.7%
Ross	16	11.9%
Hocking	7	5.2%
Vinton	5	3.7%
Other	13	9.7%

6.3 Organization Background and Work Structure

Employers most often identified their company as being inside the five industries provided, which included manufacturing, construction/skilled trades, healthcare, financial, and transportation/logistics. In total, 28.7% (39) of employers identified their company as a part of additional industries which included social/human services, government, utility, legal/criminal justice, nonprofit, educational/information services, real estate, and economic development. Of the industries provided, manufacturing was most often selected, as 27.9% (38) of employers identified their company as part of that industry. Construction and skilled trades made up 16.9% (23) of responses.

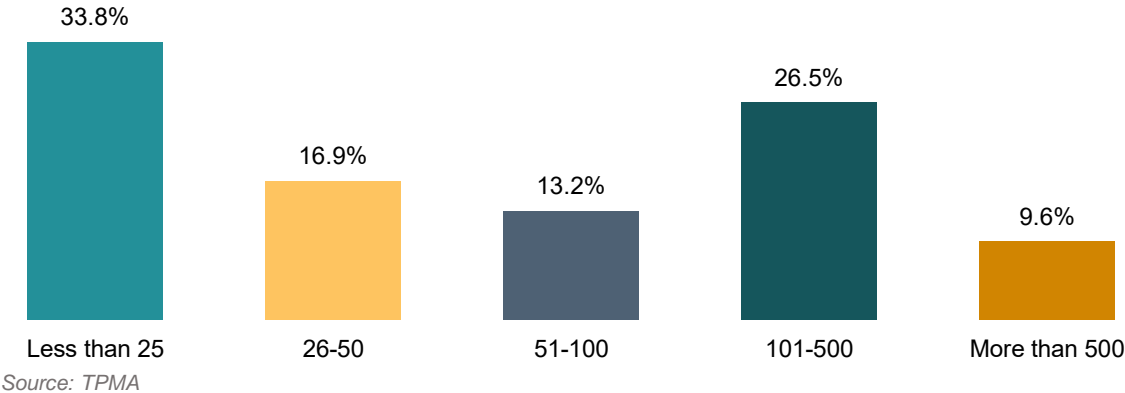
Figure 6.1: Respondent Company Industry



Source: TPMA

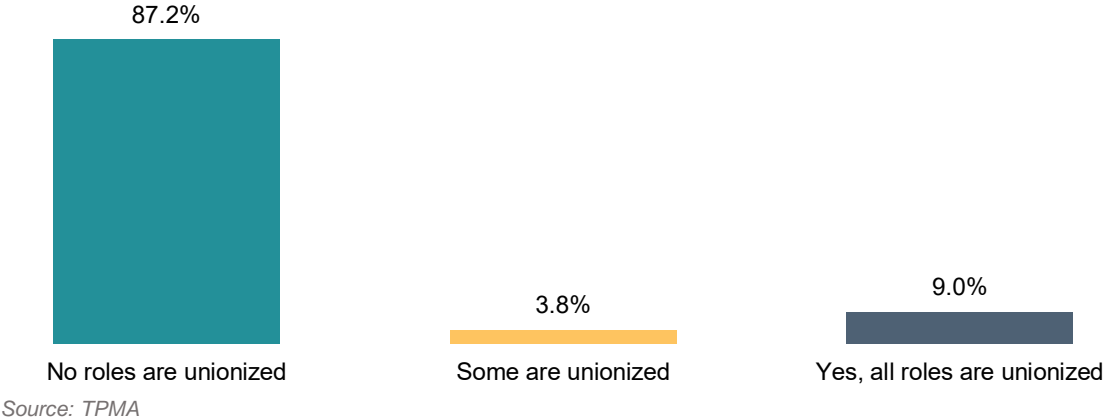
A third of respondents (33.8%, 46) reported their company had less than 25 employees, while a quarter (26.5%, 36) reported having between 101 and 500 employees.

Figure 6.2: Number of Employees



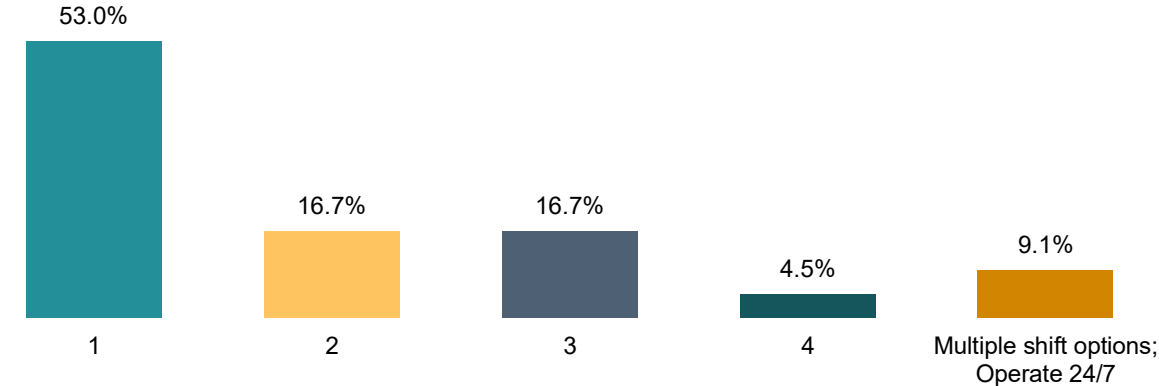
For the majority of employers (87.2%, 116), no roles in their company are unionized. A total of 9.0% (12) of employers reported all roles in their company are unionized, while 3.8% (5) reported only some positions are unionized. The manufacturing industry had the largest percentage of unionized roles, with 22.9% of respondents reporting all their roles were unionized and 5.7% reported some roles were unionized.

Figure 6.3: Unionization of Roles



Over half (53.0%, 70) of respondents reported their company currently has a single shift. This was followed by 16.7% (22) who reported their company has two shifts, and 16.7% (22) have three shifts total. In total, 9.1% (12) of respondents reported “other,” stating they had multiple overlapping shifts or simply “operate 24/7.”

Figure 6.4: Number of Shifts

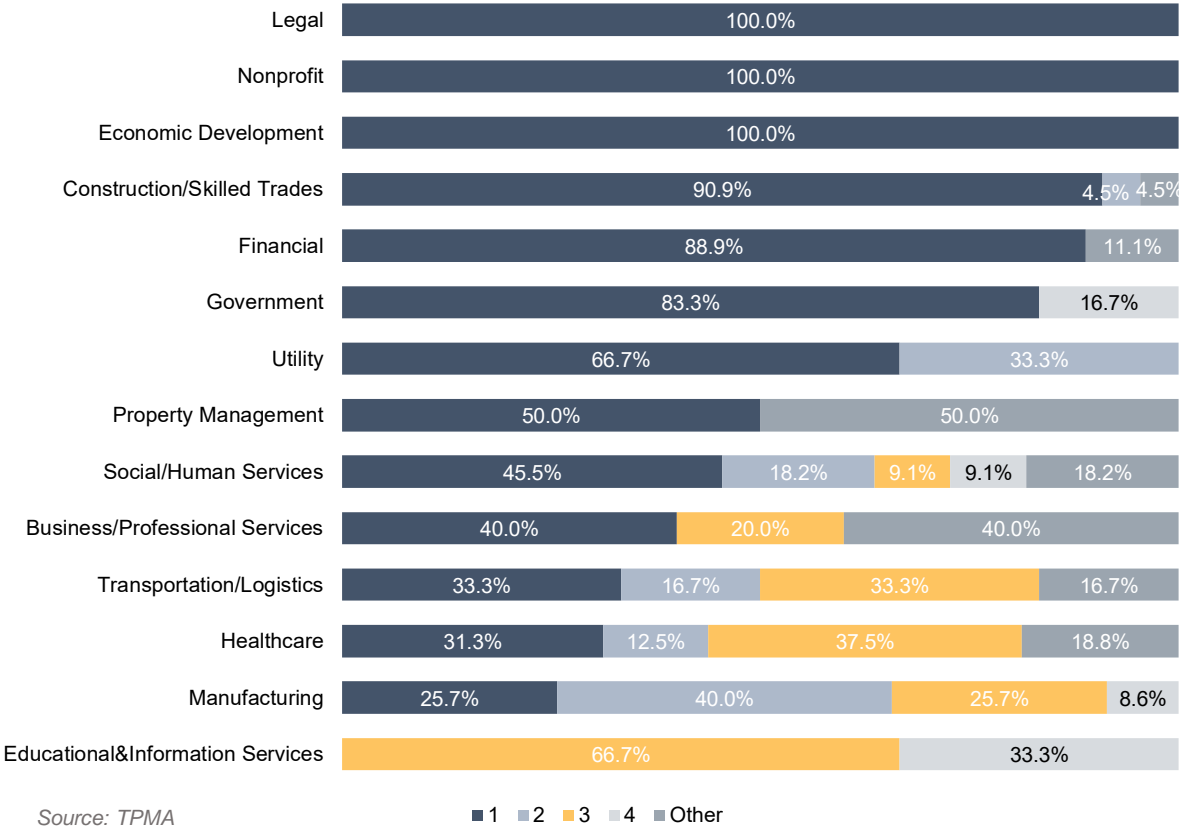


Source: TPMA

Employer wage differentials varied for 2nd and 3rd shifts, with wage differentials being as high as an extra \$3.50 per hour to as little as an extra \$0.15 per hour for off shifts. Among responses, the most common wage differentials included \$0.50 an hour, followed by \$1 an hour extra.

Broken down by industry, at least half of employers in the legal, nonprofit, economic development, construction/skilled trades, financial, government, utility, and property management industries reported their companies operated in one shift.

Figure 6.5: Number of Shifts by Industry

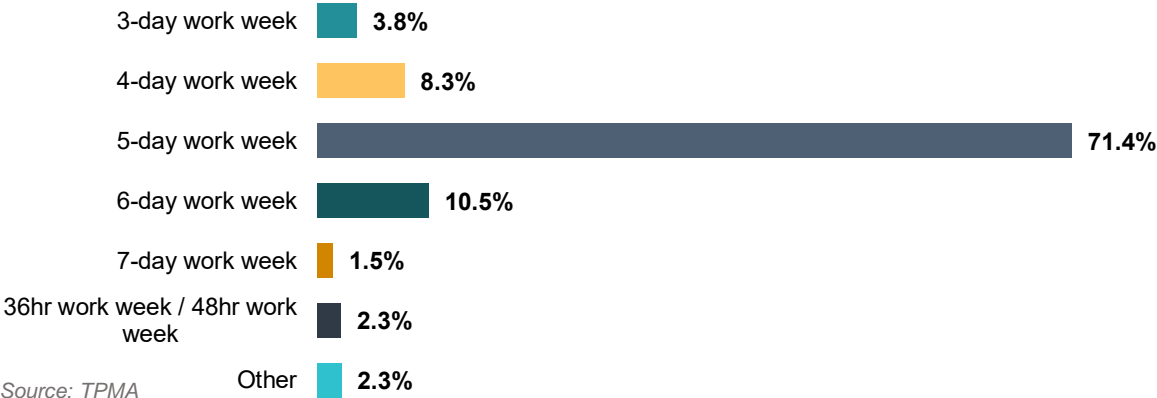


Source: TPMA

Over half (68.2%, 88) of employers reported their company did not offer wage differentials for off shifts, while 29.5% (38) reported they did. A total of 2.3% (3) of respondents were unsure if their company offered shift differentials. Considering employer industry, manufacturing companies were split, with 45.7% (16) of respondents reporting they did not offer wage differentials, with 54.3% (19) reporting they did. For construction, over three-quarters (77.3%, 17) of employers reported not offering wage differentials. This was similar for the healthcare industry, with 60.0% (9) of employers reporting they did not offer wage differentials for off shifts. Of those who did offer wage differentials, those varied for 2nd and 3rd shifts, with wage differentials being as high as an extra \$3.50 per hour to as little as an extra \$0.15 per hour for off shifts. Among responses, the most common wage differentials included \$0.50 an hour, followed by \$1 an hour extra.

Nearly three quarters (71.4%, 95) of employers shared their company’s work week schedule consisted of a five-day work week. This was followed by 10.5% (14) of employers reporting their company operated on a six-day work schedule. Beyond three- to seven-day work weeks, employers identified a rotating schedule of 36 - 48-hour work weeks, which accounted for 2.3% (3) of respondent companies. “Other” schedules, which made up 2.3% (3) of responses, included “flexible” schedules, “swing shifts,” and five-day work weeks with additional half days on weekends.

Figure 6.6: Work Week Structure

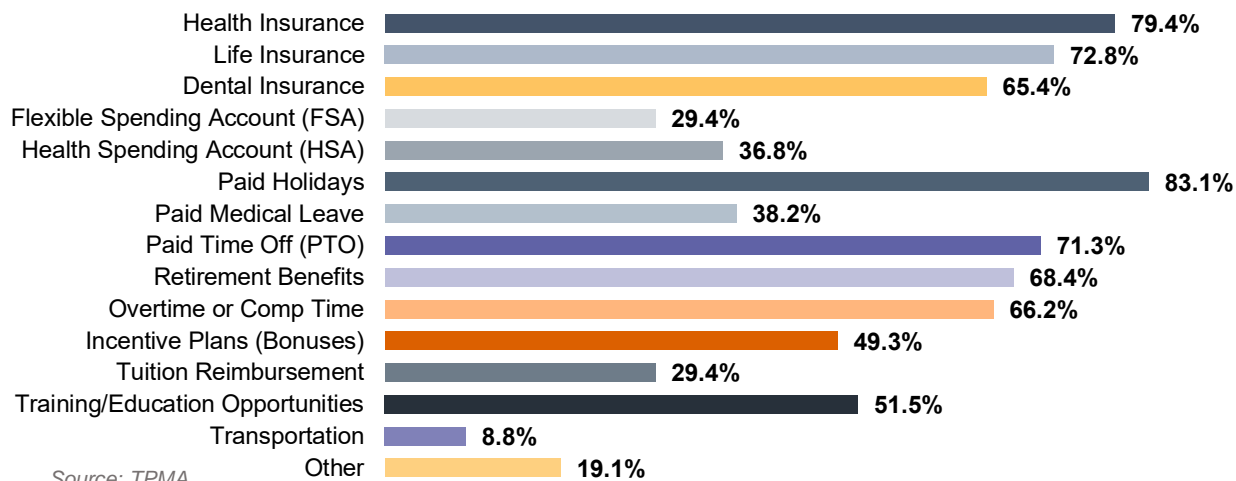


Working hours, as identified by respondents, most commonly consisted of eight to nine hour shifts between the hours of 7 am and 5:30 pm. In addition, employers commonly reported 10-12 hours shifts, as well as eight to nine hour off shifts, occurring outside of the typical 7 am – 5:30 pm shifts.

6.4 Benefits

The most common benefits identified by employers included paid holidays (83.1%, 113), health insurance (79.4%, 108), life insurance (72.8, 99), and paid time off (71.3%, 97). For the manufacturing industry, employers were least likely to offer flexible spending accounts (31.6%), health spending accounts (39.5%), tuition reimbursement (31.6%), training/education opportunities (39.5%), and transportation (2.6%). Employers in the construction industry were least likely to offer health spending accounts (17.4%), paid medical leave (17.4%), tuition reimbursement (8.7%), and transportation (8.7%).

Figure 6.7: Benefits



6.5 Wages and Pay Policies

Respondents of the survey were asked to provide up to three positions in their company in which they have the most openings. For each position identified, respondents were asked to provide starting hourly wages at entry-level, mid-level, and advanced.

Business and Professional Services

In the industry of business and professional services, respondents listed positions including sales, managers, legal assistants, fitness instructors, and childcare workers. For entry level, wages ranged from \$8.80/hour for “member service associate” to as much as \$20.00/hour for entry level paralegals. At mid-level, wage ranged from \$9.00/hour to \$22/hour. Advanced level wages ranged from \$10.00/hour to \$26/hour.

Construction/Skilled Trades

Positions listed in the construction/skilled trades industry included field technicians, insulation journeymen, carpet installer, HVAC tech, construction generalists, mechanics, truck drivers, and more. For entry level, wages ranged from \$10.00/hour for mechanics and technicians to up to \$30/hour construction generalists. For mid-level positions, wages ranged from \$12/hour for various positions including auto refinish technician, student partner, construction wireman/apprentice, and general laborer to as much as \$31.00/hour for construction superintendent and installation technician. Advanced level wages ranged from \$14.00/hour for positions including auto body tech and auto refinish tech to \$45.00/hour for installation technicians.

The table below provides positions identified by employer respondents as their most needed positions with corresponding entry level, mid-level, and advanced level wages.

Table 6.2: Most Needed Positions Identified by Employers, and Wage Ranges

Position	Entry level	Mid-level	Advanced level
Administrative Assistance	\$13.00	\$15.00	\$17.00
Auto Body Tech	\$11.00	\$12.50	\$14.50
Auto Refinish Tech	\$11.00	\$12.50	\$14.50
Carpenter	\$15.00	\$21.00	\$28.00
Carpentry	\$12.00	\$15.00	\$18.00
Clerical	\$9.00	\$11.00	\$13.00

Table 6.2: Most Needed Positions Identified by Employers, and Wage Ranges

Position	Entry level	Mid-level	Advanced level
Commercial HVAC installer	\$15.00	\$20.00	\$30.00
Concrete Labor	\$14.00	\$16.00	\$18.00
Construction Wireman/Apprentice Entry Level	\$12.00	\$12.00	\$15.00
Driver Service Tech / CDL Class A driver/Service Tech	\$13.50	\$15.00	\$16.00
Drywall Finisher	\$15.00	\$21.00	\$25.00
Drywall Hanger	\$15.00	\$21.00	\$25.00
Field Technician	\$15.00	\$18.00	\$22.00
Foresters	\$15.00	\$20.00	\$25.00
General Labor	\$14.00	\$16.00	\$18.00
General Labor	\$9.00	\$12.00	\$15.00
HVAC Service Technician	\$15.00	\$20.00	\$30.00
HVAC Tech	\$12.00	\$15.00	\$18.00
Industrial Painter	\$17.00	\$19.00	\$22.00
Installation Apprentice	\$15.00	\$18.00	\$25.00
Installation Technician	\$22.00	\$31.00	\$45.00
Installation Technician	\$12.00	\$15.00	\$18.00
Insulator Mechanic	\$18.00	\$23.00	\$27.00
Journeyman Electrician	\$25.00	\$28.00	\$36.00
Labor	\$10.00	\$12.00	\$14.00
Mechanics	\$10.00	\$11.00	\$12.00
Mechanics	\$10.00	\$11.00	\$12.00
Mechanics	\$22.50	\$25.00	\$30.00
Mechanics	\$10.00	\$11.00	\$12.00
MHR/ Technician	\$10.25	\$10.75	\$11.25
Office Employee	\$14.00	\$18.00	\$22.00
Office Personnel	\$15.00	\$18.00	\$23.00
Operators	\$18.00	\$22.00	\$25.00
Part Assistant	\$10.00	\$12.00	\$13.59
Restoration Worker (Requires Travel)	\$20.00	\$23.00	\$26.00
Sales	\$7.80	\$7.80	\$10.00
Service Technician	\$13.00	\$16.00	\$19.00
Student Partner	\$12.00	\$12.00	\$12.00
Superintendent	\$25.00	\$30.00	\$35.00
Truck Drivers with CDLs	\$22.50	\$25.00	\$27.50
Warehouse associate	\$15.00	\$18.00	\$22.00
Welding	\$15.00	\$18.00	\$20.00

Source: TPMA

Financial

For the financial industry, respondents identified various banking positions, including tellers, account specialists, insurance agents, and accountants. Entry level wages ranged from \$9.00-\$10.00/hour for tellers to \$35.00 for management positions. Mid-level wages ranged from \$12.00/hour for tellers to \$40.00/hour for managers. At the advanced level, wages ranged from \$16.00/hour for tellers to \$45.00/hour for managers.

Government

Government positions identified included case workers, executive directors, district administrators, and education/outreach coordinators. Wages for entry-level positions began at \$11.00/hour for educational aides and went as high as \$38.00/hour for director positions. Mid-level wages started at \$14.00/hour for educational aids up to \$45.00/hour for directors. Advanced-level wages began at \$16.00/hour for referral specialists and went up to \$50.00/hour, again for director positions.

Healthcare

For the healthcare industry, respondents provided positions that included registered nurse, caregiver, mental health worker, nursing assistant, receptionist, and direct support professional. Among these, wages at entry level ranged from \$11.00/hour to \$28.00/hour. At mid-level, wages ranged from \$11.00/hour to \$30.00/hour. Advanced level wages for positions in the healthcare industry ranged from \$13.00/hour to \$40.00/hour.

Legal/Criminal Justice

The positions of attorney, paralegal, senior policy analyst, and legal assistant were provided by respondents working in law and criminal justice. Wage ranges at entry-level started at \$15.00 and went up to \$33.00/hour. Mid-level wages ranged from \$17.00/hour to \$38.00/hour. Advanced level wages ranged from \$26.00/hour to \$57.00/hour.

Manufacturing

Positions identified by respondents representing the manufacturing industry included assembly and production workers, operators, maintenance, welder, machinist, CNC machinists and mill operators, and production technicians. Entry level wages ranged from \$10.00/hour to \$28.00/hour. Mid-level wages ranged from \$12.00/hour to \$32.00/hour. Advanced level wages ranged from \$14.00/hour to \$36.00/hour.

The table below provides positions identified by employer respondents as their most needed positions with corresponding entry level, mid-level, and advanced level wages.

Table 6.3: Wage Responses for In-Demand Occupations, Manufacturing

Position	Entry level	Mid-level	Advanced Level
Assembly	\$11.00	\$12.00	\$16.00
Assembly Technician	\$11.50	\$12.50	\$13.00
Assembly Technician	\$16.60	\$17.00	\$22.00
Auditor	\$12.00	\$14.00	\$15.00
Builder/ Assembler	\$12.00	\$14.00	\$16.00
CNC Lathe Operator	\$19.00	\$24.00	\$36.00
CNC Machinist	\$15.00	\$18.00	\$20.00
CNC Machinist	\$12.00	\$16.00	\$23.00
CNC Mill Operator	\$19.00	\$24.00	\$36.00
Controls Mechanic	\$31.11	\$32.45	\$33.89
Converting Machine Operator	\$17.00	\$23.00	\$29.00
Customer Sales & Service Representative	\$17.50	\$20.00	\$22.50
Die Setters	\$16.00	\$18.00	\$25.00

Table 6.3: Wage Responses for In-Demand Occupations, Manufacturing

Position	Entry level	Mid-level	Advanced Level
Distribution	\$11.00	\$14.50	\$16.00
Fabricators	\$18.00	\$20.00	\$24.00
Forklift	\$17.00	\$17.00	\$17.00
General Labor	\$17.00	\$18.94	\$20.19
General Laborer	\$12.00	\$14.00	\$18.00
General Mechanic	\$31.11	\$32.45	\$33.89
General Operator	\$14.00	\$15.50	\$16.00
General Operator	\$21.37	\$28.21	\$31.11
Lab QC/QA	\$15.00	\$15.50	\$17.00
Laborer	\$15.00	\$20.00	\$25.00
Machine Operator	\$12.20	\$14.45	\$16.86
Machine Operator	\$14.45	\$17.36	\$22.50
Machine Operator	\$15.00	\$18.00	\$20.00
Machine Operator	\$16.00	\$16.40	\$16.90
Machine Operator/CNC	\$15.00	\$16.00	\$17.50
Machinist	\$18.00	\$22.00	\$25.00
Machinist	\$20.00	\$24.00	\$28.00
Machinist	\$18.00	\$20.00	\$24.00
Maintenance	\$15.00	\$17.00	\$28.00
Maintenance	\$21.63	\$28.45	\$33.01
Maintenance	\$25.54	\$27.74	\$30.86
Maintenance Technicians	\$24.00	\$26.00	\$28.00
Maintenance Techs	\$22.78	\$27.20	\$30.16
Manual Machinist	\$12.00	\$16.00	\$28.00
Manufacturing	\$10.00	\$15.00	\$20.00
Manufacturing	\$18.00	\$20.00	\$24.00
Manufacturing Entry level	\$13.00	\$15.07	\$16.47
Material Handler	\$12.00	\$14.00	\$16.00
Material Handler	\$14.50	\$15.81	\$16.81
Material Handlers	\$19.79	\$19.79	\$19.79
Mechanical and Electrical Maintenance	\$28.50	\$30.00	\$30.00
Operator	\$18.00	\$18.00	\$18.00
Operators	\$20.28	\$20.28	\$20.28
Packer	\$14.00	\$14.70	\$15.70
Packing Operator	\$17.00	\$23.00	\$28.07
Pad Cutter	\$14.00	\$14.00	\$14.00
Painter / Blaster	\$15.50	\$17.00	\$22.00
Paper Machine Technician	\$19.00	\$24.00	\$30.00
Product Finesser	\$13.00	\$13.75	\$15.00
Production	\$10.00	\$15.00	\$20.00
Production	\$14.00	\$14.00	\$14.00
Production Associate	\$13.00	\$13.00	\$13.00

Table 6.3: Wage Responses for In-Demand Occupations, Manufacturing

Position	Entry level	Mid-level	Advanced Level
Production Operator	\$17.00	\$23.00	\$28.07
Production Operator	\$14.79	\$15.30	\$15.81
Production Tech	\$14.00	\$16.00	\$18.00
Quality Inspector	\$13.00	\$13.50	\$14.00
Sales	\$18.00	\$20.00	\$24.00
Selector - Packer	\$16.06	\$16.06	\$16.06
Tool and Die Maker	\$19.00	\$24.00	\$36.00
Tool Room/CNC Machinist	\$16.00	\$20.00	\$30.00
Warehouse	\$10.00	\$15.00	\$20.00
Warehouse Associate	\$13.50	\$15.00	\$17.00
Welder	\$15.50	\$17.00	\$22.00
Welder	\$18.00	\$20.00	\$24.00

Source: TPMA

Nonprofit

Only two respondents provided salary information as a part of the nonprofit sector. For the position of receptionist, salaries began at \$26,000 at entry level, increased to \$30,000 at mid-level, and went up to \$33,000 for advanced. For a case worker position, salaries began at \$33,000. Mid-level pay for case workers was reported as \$38,000 per year, with advanced level salaries going up to \$42,000. An administrative assistant could earn \$15.00/hour at entry level and \$18.00/hour at mid-level. Advanced level wages were not provided for this position.

Property Management/Realty

For positions in the property management industry including community service technician and community manager, wages for entry level were \$17.30/hour. Mid-level wages were \$18.00/hour and advanced level wages were \$20.00/hour.

Social/Human Services

Positions listed by respondents in the social/human services sector included managers, service and support administrators, salesclerk, caseworkers, and case managers. Entry level wages ranged from \$8.80/hour to \$18.00/hour. Mid-level wages ranged from \$9.25/hour to \$20.00/hour and advanced level wages ranged from \$15.00/hour to \$23.91/hour.

Transportation/Logistics

Positions listed for the transportation/logistics industry included warehouse associate, production, service technician, forklift operator, sales administrator, and dispatcher. Entry level wages ranged from \$10.00 to \$18.00/hour. Mid-level wages ranged from \$11.00/hour to \$26.00/hour. Advanced level wages ranged from \$17.00/hour to \$36.00/hour.

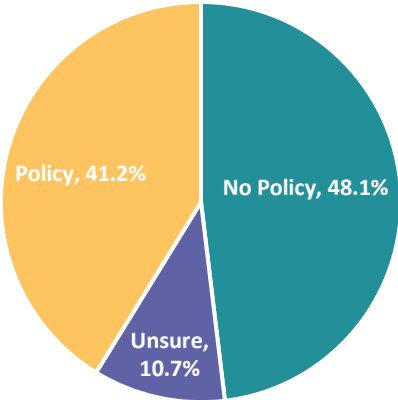
Utility

Respondents listed several positions such as CDL drivers, maintenance, line workers, and oil and gas helpers for jobs in the utility sector. Wages for entry-level ranged from \$13.00/hour to \$23.00/hour. Mid-level wages ranged from \$15.00/hour to \$31.00/hour. Advanced level wages ranged from \$16.00/hour to \$23.00/hour.

Wage Increase Policy

Nearly half (48.1%, 63) of respondents reported their company does not currently have a policy around annual wage increases, while 41.2% (54) reported their company does have an annual wage increase. A total of 10.7% (14) of respondents were unsure if a policy existed.

Figure 6.8: Wage Increase Policies



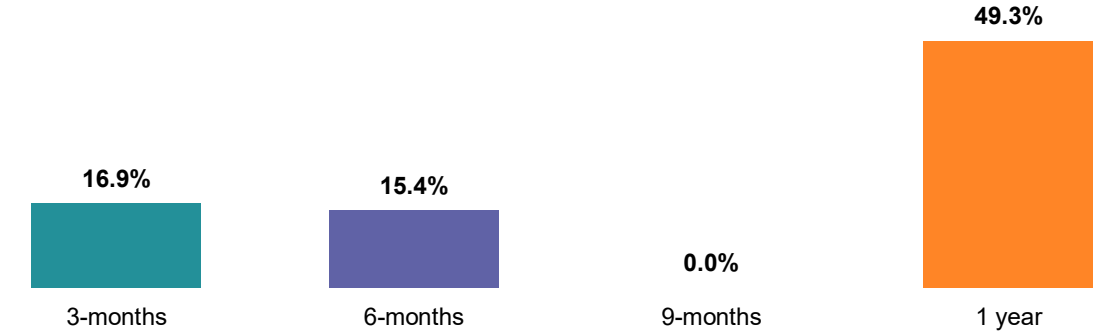
Source: TPMA

For the manufacturing industry, over half (57.1%, 20) of employers reported they do have a policy around annual wage increases, with 34.3% (12) reporting they did not and 8.6% (3) were unsure.

Employers whose company currently has an annual wage increase policy also shared details on the policy concerning the percentage wages increase each year. The most common annual wage increase noted was up to 3% of an employee’s current wage, followed by “merit based” or evaluation based each year. For unionized roles, annual wage increases are determined by contract. Others also noted cost of living wage increases each year, while others’ annual wage policies were reported as being under 3%, with some being up to 5% each year.

Of additional wage increases reported, nearly half (49.3%, 67) of respondents reported their company offers wage increases each year. Behind that, 16.9% (23) of respondents reported their company offers wage increases every 3-months, while 15.4% of employers offer them every 6-months. No employers implemented wages on a 9-month schedule.

Figure 6.9: Wage Increase Schedule



Source: TPMA

Wage increases after hiring, as reported by employers, most commonly tended to occur “as needed” based on merit or performance. Others reported wage increases to occur yearly. Employers with unionized roles also reported wage increases occur as “per union contract.”

6.6 Employer Feedback

Employers shared the difficulties they encounter in attracting and/or retaining employees based on available wage and benefit offerings at their company. The most common difficulty encountered by respondents included a lack of skilled workers for their positions, with some noting they “have seen a major shortage in qualified, skilled workers for quite some time now.” In addition, employers commonly faced difficulties in attracting and or retaining employees due to the low or inconsistent wages or salaries their company offers. One respondent noted, “inconsistencies with regard to wages offered to new employees” was a difficulty they faced, further sharing, “lack of processes in place for wage increases, promotions, and other pay structures,” were also difficulties. Other employers also shared issues of not having consistent or motivated employees, with one respondent sharing they “receive numerous resumes for [their] job openings but get 20% who actually show up for interviews” and another reporting they “struggle to find people who are reliable.” For employers outside of Columbus, competition in the job market creates difficulties in attaining and retaining employees. Employers often noted Columbus, sharing that “other organizations [closer to or in Columbus] are able to pay more.”

Other common themes presented regarding the difficulties employers face in attracting and/or retaining employees included workers getting better compensation through unemployment than working, geographical location as workers were unable to secure transportation to more rural areas, lack of incentives such as benefits, lack of interested candidates, and the physical/demanding nature of some positions.

7. Strategic Recommendations

Recommendations are based on those which could be implemented most quickly and effectively based on results of the analysis above, knowledge of Area 20 and Ross County, and best practices based on work by Chmura and TPMA on workforce development strategic planning across the nation.

Recruitment of youth, unemployed, underemployed, and underrepresented populations - The plan to recruit new hires into entry level positions can be accomplished by expanding the currently offered job fairs in person or virtually. Employers and education providers (including career/guidance counselors) should be invited to work directly with the OMJ on this effort. As stated earlier in this report, both secondary and post-secondary education providers should have a Ross County business rep contact assigned to assist with work-based learning (earn and learn) opportunities that would connect the school and employer. Considering the number of CTE programs available, a broad base of openings could be filled. The fairs should provide specific information about the jobs available, including sector, the pay, and benefits, required education (certificate, licensure, etc.) and active involvement by the employers. The activities for involvement could include videos of the workplace, in-person or Zoom chats with the employer, and the opportunity to tour the business if possible. The youth, unemployed, underemployed, and underrepresented populations should not only be registered with OMJ before participating in the fair but should have professional resumes created with the assistance of OMJ staff and/or partners and be versed in professional etiquette. Business reps should connect with community-based organizations (CBOs), education providers, and sector-based partnerships that are offering career readiness, preemployment training, and/or training leading to industry credentials to all the aforementioned populations. Recruiting and referrals would assist the initiatives so that employers have a pool of potential hires with experience who have demonstrated good time management and commitment to completion, and successfully earned a credential. Individuals with disabilities have low participation in the labor force in Ross County. Increasing the number participating by 1% would increase the number of available workers by 280.¹⁰ Reach out to CBOs that specialize working with these populations; for example, the Ohio Rehabilitation Services Commission and Vocational Rehabilitation Services. In outreach to employers, develop the business case for hiring people with disabilities, including an expanded talent pool, varied perspectives, and benefits of accessibility for all workers. Inclusive practices should also assist older workers in continuing to work and extending retirement. Increasing the percentage of workers who delay retirement and participate to age 65 by 1 percentage point would add more than 450 workers. This demographic of workers could act as mentors for new hires, reduce to part-time employment with current employers to ease a transition to new workers, and/or take on a new part-time position where advancement is not warranted.

Training for new and incumbent workers – Ross County could use funding or braid funding from other sources for pre-employment training, on-the-job training, and incumbent worker training. Business service reps need to reach out to employers in a variety of ways to contact the proper person at the business and assess their training needs for new hires and incumbent workers. If coordinated by county, there is a greater opportunity for education providers to be able to put cohorts together so that training classes can run. Pre-employment training programs would allow employers with similar entry level requirements to interview candidates who complete programs. If employers agree upon a credential for the training, those individuals who earn the credential could be placed in advanced training in the future and that could eventually lead to an apprenticeship program with prior credit earned. A program such as WorkAdvance is a good example of this model and it's being used in Ohio Areas 3, 17, and 18. A program like this could be replicated in Area 20, and specifically in Ross County. Employers with similar incumbent worker training needs could be brought together with education providers to put together cohorts. Additionally, customized training may be put together to address specific needs for a specific company; most post-secondary providers in Area 20 offer this service but employers may not be aware. The key here is to bring awareness to the employers that Area 20 can provide many services or act as a convener to help employers invest in their workplace.

Coordinate with education providers to close gaps in programs and skills training offered – In addition to making employers aware of training opportunities, Ross County and Area 20 can assist training providers in making sure the programs and certifications offered are aligned with the needs of local employers. Current gaps consistent between secondary data

¹⁰ See additional resources and best practices for increasing labor force participation among individuals with disabilities at <https://www.dol.gov/sites/dolgov/files/ofccp/Section503-FocusedReviews/files/Section503BestPracticesUpdated-FEDQA508c.pdf> and https://worksupport.com/documents/jvr_employer_recommended_strategies.pdf

modeling and feedback from local employers include mechanical maintenance workers and electrical engineers. Meeting demand for many of these occupations currently relies on attracting workers from outside Area 20 as programs are not available from local educational institutions, indicating an opportunity for local institutions to offer or expand certificates and 2-year programs.

Addressing barriers such as transportation, housing, and drug abuse - When an individual has a barrier to employment, Ross County, working regionally in Area 20, has an opportunity to address that barrier and provide the individual a chance to become gainfully employed. Most of the employers that TPMA spoke with recognize that transportation is an issue that affects their ability to hire and retain workers. Ross can address this issue by working closely with transportation providers and employers to produce solutions related to times the buses run and the routes they cover.¹¹ Advocating for a mobility manager who can track transportation availability and routes, and address eliminating duplicative efforts is a possibility if there is support. Additionally, individuals who have lost their driver's license need to be informed of the possibilities for gaining their license back.

Affordability, age of housing stock, mismatched housing preferences, and market conditions reveal gaps in available housing in the Area 20 region. It is important for leaders and stakeholders to be intentional with planning, including the population characteristics, preferences of growing market segments, and affordability. Area 20 and Ross County should coordinate with local developers and planners to consider cost-burden when developing new product to meet the projections of the housing demand model. An increased focus on questions around housing as part of Area 20's ongoing business retention and expansion (BR&E) efforts can bring these issues into greater focus for employers and help develop action steps for housing, transportations, and commuting.

Concerning drug abuse, employers stressed the importance of individuals understanding that marijuana is a drug that is a barrier to employment. There needs to be an active awareness campaign built around the fact that marijuana is illegal and presents a safety concern for employers. Employers stated that most drug screenings that come back positive are due to marijuana. Area 20 and Ross County can build a campaign around this concern through social media and a program coordinated through OMJ Centers.

Utilizing collaborative relationships – Ross County can work more closely with local, regional, state, and federal funders to address the hiring, training, and retention needs of employers, as well as addressing barriers to employment. State funding such as Ohio TechCred, SharedWork Ohio, and the Manufacturing Extension Partnership (MEP) High School Internship Program are all funds that could potentially braid with Ross and Area 20 funds to address employer needs.

In relation to barriers such as transportation and drug abuse, there are partnership possibilities to collaboratively address these concerns. Convening transportation providers and area employers to actively study what can be done to combat transportation as a barrier to employment would open the doors to better understand the problem. Under Area 20's leadership, a new collaborative could evolve that may effectively address a hiring challenge faced by employers and gainful employment for job seekers. And Ross and Area 20 could partner with the drug aversion programs located in secondary and postsecondary schools to get the word out on drug free workplaces and safety in the workplace.

Engagement between workforce development boards/OMJs and employers - TPMA heard from employers that there was not consistency between the various OMJ offices, with some better at responding to employer needs than others. Our recommendation is that the business reps meet on a consistent basis and develop a and implement a plan of strategies to review bandwidth for employer services across the Area and simplify the offerings to businesses so they better understand how Area 20 can help. Have informational webinars for employers where the OMJ highlights a service available, and an employer shares their success using that service. Create an informational campaign to share services Area 20 offers and use social media to distribute the information. Another, but more costly recommendation is to hire an additional state workforce specialist liaison to work between employers and the five county OMJ offices to provide consistency and increase bandwidth.

¹¹ As one example, the TriCounty Link System in South Carolina combines transport for Medicaid, adult daycare, and contracts with private companies. Routes include a deviation option to pick up customers up to ¼ mile off the fixed route who cannot meet at designated stations. See <https://connectourfuture.org/tools/rural-transportation/>

Sector Strategies built around key industry partnerships are widely recognized and supported under the Workforce Innovation and Opportunity Act of 2014 (WIOA) as best practices in coordinating employer outreach, generating buy-in from employers into workforce development efforts, verifying common in-demand skills and occupations shared between several employers, and encouraging labor force participation among workers with a clear pathway of entry-level jobs and subsequent opportunities to grow their career.¹² Given the existing clusters and growth outlook, manufacturing and healthcare are potential sectors to consider for employing and expanding such a strategy.¹³

Consistent communication to gain employer feedback/input to best understand needs is necessary. Therefore, strategies addressing meaningful and productive engagement between employers and business reps through one-to-one meetings is recommended. A checkoff list should be developed and utilized by each business rep when meeting with an employer.

¹² For resources on sector strategies and industry engagement, see

<https://businessengagement.workforcegaps.org/resources/2016/08/16/15/22/Sector-Strategies-Resources>

¹³ The Central Ohio Manufacturing Partnership was incorporated in 2019, and its service area includes the counties of Fairfield and Pickaway in Area 20. <https://www.centralohiomanufacturingpartnership.org/>

8. Appendix

Labor Shed Definition

Table A1: Commuters in Ross County Shed by Zip Code Tabulation Area

Region (ZCTA)	County	Commute Into Ross County	Commute Out of Ross County	Total Commuters
45628	Ross	1,648	683	2,332
45690	Pike	491	335	826
45647	Ross	516	45	562
43160	Fayette	211	324	535
45661	Pike	193	236	429
43113	Fairfield	409	4	413
45681	Ross	355	58	413
45651	Vinton	296	38	335
45133	Brown	150	150	300
45662	Scioto	104	174	278
45640	Jackson	141	128	268
43138	Hocking	108	31	140
43103	Pickaway	100	37	137
43135	Hocking	87	19	106
45631	Gallia	51	42	93
45648	Pike	37	48	85
43143	Fayette	3	80	83
43101	Ross	64	11	75
45694	Scioto	45	23	67
45673	Ross	58	9	67
43115	Pickaway	2	63	66
45638	Lawrence	43	21	65
45634	Jackson	46	10	56
43164	Pickaway	41	13	54
45644	Pickaway	46	7	54
45680	Lawrence	25	28	54
45656	Gallia	42	7	49
43137	Franklin	8	25	33
45614	Gallia	21	6	27
45669	Lawrence	22	5	27
43110	Fairfield	18	9	26
43102	Fairfield	16	10	26
45710	Athens	11	8	19
45617	Ross	18	1	19
43152	Hocking	14	1	16
43116	Pickaway	11	2	13
43154	Fairfield	11	2	13
45698	Vinton	12	0	12

Table A1: Commuters in Ross County Shed by Zip Code Tabulation Area

Region (ZCTA)	County	Commute Into Ross County	Commute Out of Ross County	Total Commuters
45686	Gallia	11	0	11
43156	Pickaway	6	3	10
45695	Vinton	7	0	7
45123	Fayette	7	1	7
45612	Highland	6	1	7
45135	Clinton	5	1	6
45672	Jackson	4	1	5
43145	Fayette	4	1	5
45654	Hocking	3	1	4
45622	Hocking	4	0	4
45601	Jackson	2	2	4
45766	Athens	3	0	3
45613	Jackson	2	1	2
43146	Franklin	1	1	2

Stakeholder Engagement Sessions Additional Notes

Recommendations from Stakeholders

- Partnerships among workforce, education, and community organizations to build an 'In-demand Careers Roadshow'
 - Could be virtual for now
 - Demonstrate career pathways from HS to job; HS to short term training/credential; adults to work; begin outreach earlier for primary and middle school-aged students
 - Myth-busting around manufacturing jobs and “no jobs in this area”
 - Engagement with the manufacturing sector partnerships that service this Area – Central Ohio Manufacturing Partnership (Fairfield and Pickaway County sessions) and the business/industry partnership supporting implementation of the Ohio Manufacturing Workforce Partnership’s Scaling Apprenticeship Through Sector Based Strategies grant project.
 - Demonstrate success stories through the Roadshow, social media, etc., host career opportunities events
- Development opportunities for experiential learning/on-the-job training for in-demand jobs, including pre-apprenticeship-type job readiness training; investigate and catalog resources for supporting these programs – the Scaling Apprenticeship grant, WIOA funding for individual training accounts, OJT, etc., Perkins and Pell funding, etc.
- Expansion of outreach via the OMJ business services team – early and active engagement with employers; training for business services staff in selling value of services, acting as single-point of contact for Area, communicating, and serving employers as primary customer. (Pickaway County and Hocking/Vinton Counties sessions)
- Collaboration with the Fairfield 33 Development Alliance (Fairfield County session)
- Expansion of nonprofit and community-based organizations involvement in building workforce solutions for the Area
- More work can be done to educate employers on the benefits and support available for hiring a diverse workforce, particularly those with disabilities. (Ross County session)
- Inventory and provide access to all workforce development related newsletters in the area, subscribe to chamber newsletters, and engage in chamber meetings. (Hocking/Vinton Counties session)
- Need to be more intentional in outreach to census tract areas that have high poverty rates, promoting opportunities for jobs and training. (Hocking/Vinton Counties session)
- Provide additional training on how to be a remote worker and how to supervise remote workers; soft and technical skills, and problem-solving skills.

Workforce Center:

- Focus on short-term training programs and credentialing programs for in-demand jobs
- Partnership for funding with state initiatives like TechCred; strengthen partnerships with state agencies like the local Manufacturing Extension Partnerships (MEP), JobsOhio, One Columbus and Ohio Southeast Economic Development
- Programming should include tele-work training (how to work from home) and changing technologies like automation
- Training that allows fast turnaround time, OJT and work and learn programs. (get individuals trained and back/into the workforce faster)
- Monitor State and Federal Legislation:
 - IWT allowance
 - CARES Funding
 - Apprenticeship, pre-apprenticeship, and work-based learning
 - Maintain some focus on the supply side: youth, females returning to work, high-school students graduating and entering the job market, those needing upskilled/reskilled due to job loss during pandemic

In-Demand Jobs

In demand jobs:

Hocking & Vinton: CDL (Commercial Driver s License), dental assisting¹⁴, HVAC, trades/construction, advanced manufacturing

Pickaway: medical assisting, power lineman, HVAC, welding

¹⁴ Education providers report demand for this training, but it is not clear as to what the job market is for individuals with this training.

Ross: mechanical maintenance, electrical engineers (skilled)

Fairfield: healthcare, skilled trades (HVAC), CDL drivers

County Specific Comments

Fairfield County - OMJ has provided what one employer called an “eye-opening experience” in relation to responsiveness and open communication with them.

OMJ representative talked an employer through training reimbursement related to underrepresented and/or diverse populations.

Career pathway programming was mentioned as a newer initiative developed under the Area 20 directorship.

Employers appreciate the Center coming online.

Training:

- Since the pandemic, those employers that can provide training are doing so either in-house or through online providers.
- Employers want individuals trained to earn credentials, certificates, and licensures. Construction and industrial trades, healthcare, banking/financial, and services were all discussed as career options that do not necessarily require a degree.

Training Needs by County/Specific:

Fairfield County - Currently partnering with career development in schools – mock interviews, resume prep, soft skills, etc.

The CPT certification for high schoolers, that includes partners such as the workforce board and schools, is trending in the right direction to rid the negative stigma of manufacturing jobs.

Employers say that pairing new employees with more experienced workers and then using an education provider for classroom training works well. One employer espoused the use of 180 Skills for online classes and utilizing it as a prerequisite before pairing an employee with a mentor.

Employer stated that they believe there will be an increase in automation over the next three to five years resulting in a skills gap and therefore high school students need to be trained for these types of positions. There also needs to be the connection between experienced incumbent workers so that they can pass along tried and true skills for problem solving. Transferring skills from old to new and vice versa.

Financial Planning - One manufacturer is encouraging its employees to manage their money via financial planning. They have their employees go through a financial literacy course online with 180 Skills, which could qualify the employee for a 0% interest loan from their paychecks

Ross County - Employer reports they can take advantage of training offered by local providers like Pickaway-Ross Career and Tech Center and the OSU South Centers (Piketon, OH)

Hocking and Vinton Counties - Need people with QuickBooks skills or welding credentials. Even physical ability such as having the ability to stand for extended periods of time is helpful for some employers.

Collaboration:

Employers mentioned the following collaborations that are working well and that could be enhanced with Area 20 partnership (if one does not currently exist) or advocacy:

- Success seen when Ohio Manufacturing Enterprise Partnership (MEP) and other partners come together to build and offer programs.
- Bridging or braiding funding with Ohio TechCred for new hires or incumbent workers.
- Governor and LT Governor working with area workforce boards to change the stigma of the “unemployment office” to the employment agency.

- The Ohio Manufacturers Association's Making Ohio and Mentorship initiatives
- A transportation network of such services that works together with OMJ
- SharedWork Ohio (voluntary aversion layoff) program has been helpful in retaining employees.
- Building Futures program brings partners together to assist those with barriers and placing them in a pre-apprenticeship

Collaboration by County/Specific:

Pickaway County - Pickaway Works

Fairfield County - Fairfield 33 Development Alliance

Challenges:

- Still adjusting to pandemic – resiliency of staff, need for health care-related occupations; emotional toll on staff; burnout and change fatigue; increased absence – people are key to our businesses. Also seeing a heightened administrative burden because of COVID, such as more cleaning, tracking who has been exposed, etc.
- Lack of childcare and eldercare options; this was a problem before COVID and has been worsened by the pandemic
- Employers are unable to fill open positions and to get people to return to work due to the unemployment compensation related to the pandemic; some people are making more money than they did when they were working or that they would if they were employed.
- Employer said it was having more difficulty meeting customer demand with a higher number of people out due to COVID or COVID exposure and with more inexperienced people on the floor.
- Employers are struggling to find employees to fill the number of open positions due to expansion; some employers report that they cannot expand their businesses because they do not have employees to take on new business, accounts, etc.
- Difficult to provide 1:1 training due to capacity constraints
- There are few students getting into skilled trades, including construction, auto maintenance, heavy scenery operation, etc.
- Change in ODE (Ohio Department of Education) alternative graduation requirements to registered apprenticeship has left some employers frustrated as they see the change as too restrictive.
- The shift from face-to-face learning to virtual will probably remain so there needs to be an opportunity to address the challenges that occur with online learning.
- Virtual learning has made it more difficult for people to have interpersonal relationships which could be detrimental because those relationships are so important between coworkers and without them people are less likely to stay.
- Finding licensed professionals, i.e., home health care, counselors/social workers, trades
- No pipeline for skilled trades (construction, automotive, maintenance, etc.) occupations; need to expose kids to jobs earlier. Knowledge and skills need to be passed down to close the skills gap. An entire generation of workers will retire within the next 3-5 years.
- Employers report that soft skills, such as interpersonal communications and customer service skills, are lacking.
- Marijuana use is a larger problem than drug use in recruitment efforts. Individuals do not understand the importance of a drug free workplace in relation to safety and quality.
- No reliable transportation: no driver's license or sharing a single car in multi-person households. Transportation system has rigid hours and limited routes. Awareness lacking by individuals whose license was revoked due to non-payment of child support that employment verification will allow reinstatement of driver's license.
- Most employers do not have plans for recruiting/hiring under-represented and vulnerable populations. OMJ staff say some employers will not hire those in underrepresented populations.
- Inconsistency in the way that OMJ offices operate across the region. Some require onsite paperwork and others are harder to partner with because they are less communicative and do not respond. This leads employers to turn to staffing agencies.
- While some employers report some success with the OMJ online system, many reports little to no success with the OMJ job posting system or finding candidate pools from the OMJ online system. They say people are "in the system" but not really looking for jobs/work.
- Some employers reported that they do not have the capacity to participate in workforce system activities nor to get assistance.

Challenges by County/Specific:

Fairfield County - Increased wages by \$2.00 an hour and was able to attract good workers but retention remains an issue. The financial institution grew their workforce at the height of the pandemic and could not keep up with applicants. Currently they cannot get enough people to fill open positions. Internal training has become an issue for at least one of the employers because one-to-one training is difficult due to COVID.

Transportation issues due to location. Prior to COVID there was consideration of setting up a shuttle to bring people to and from work.

There are limited (unrefined) pockets of activities that may serve underrepresented populations such as the electrical contractors' website which includes a community groups page and the use of its activity room by underrepresented populations and non-profit groups, as well as offering free CPR courses; a manufacturing company that houses trainees from Nepal for up to a year; and a supply company that hires individuals in a substance abuse halfway house.

Pickaway County - Employer says that people will not work for less than \$15 per hour. A recruiter says one employer with assembly line work has 109 open positions at \$13 per hour wages. There are manufacturing maintenance positions paying \$22-\$27 per hour that need filled.

Hocking/Vinton Counties - There is little construction taking place, so Hocking residents drive to Columbus for employment and Vinton residents tend to stay within their county to avoid a 30+ minute drive.

Difficult to get transportation systems to go to rural areas of county.

Ross County - One employer expressed frustration after setting up interviews for 119, which resulted in 54 no shows. Out of the 44 who were hired, 4 did not show up for work the first day and 24 have since left.

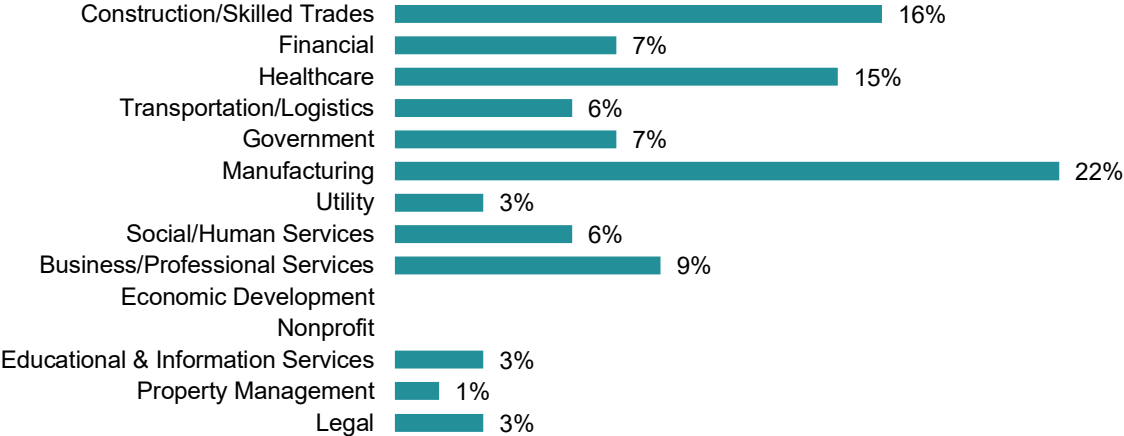
Employer stated that they wished there were a Ross County job board aimed toward apprenticeships, etc.

Employers would like a centralized meeting with the education providers. More interaction between manufacturers in schools is necessary to fill skills gaps.

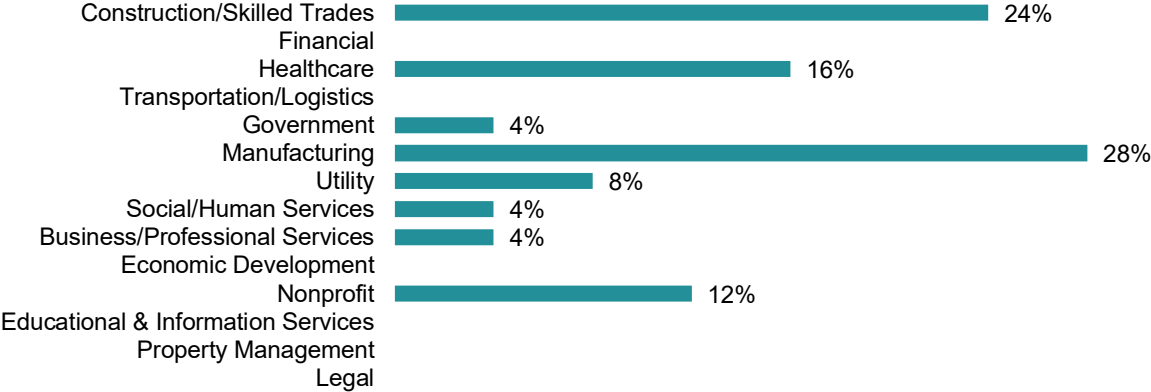
Wage and Benefit Survey Appendix

Industries broken down by each of the five counties in the Area 20 region are included below. Responses may not be disclosed to avoid identifying specific employers.

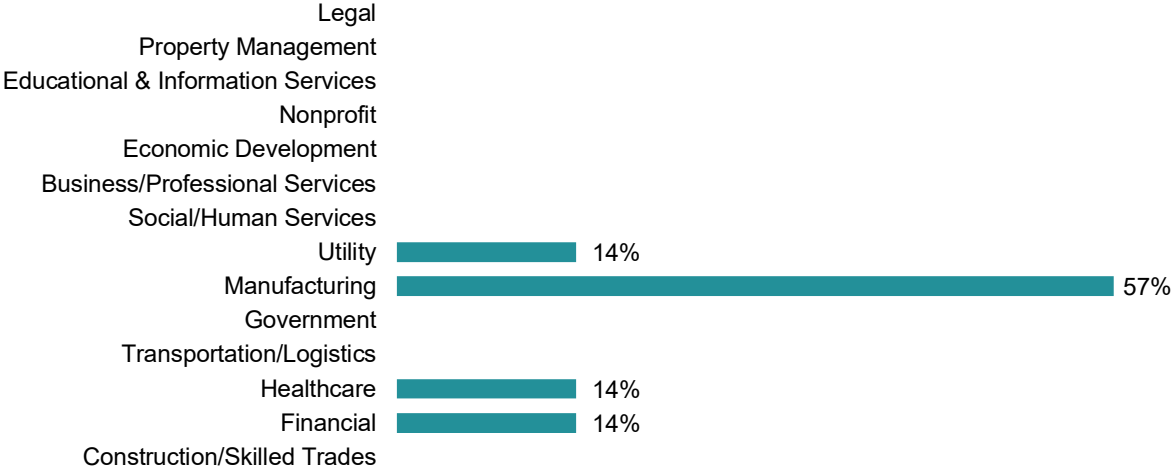
Industries from Fairfield County



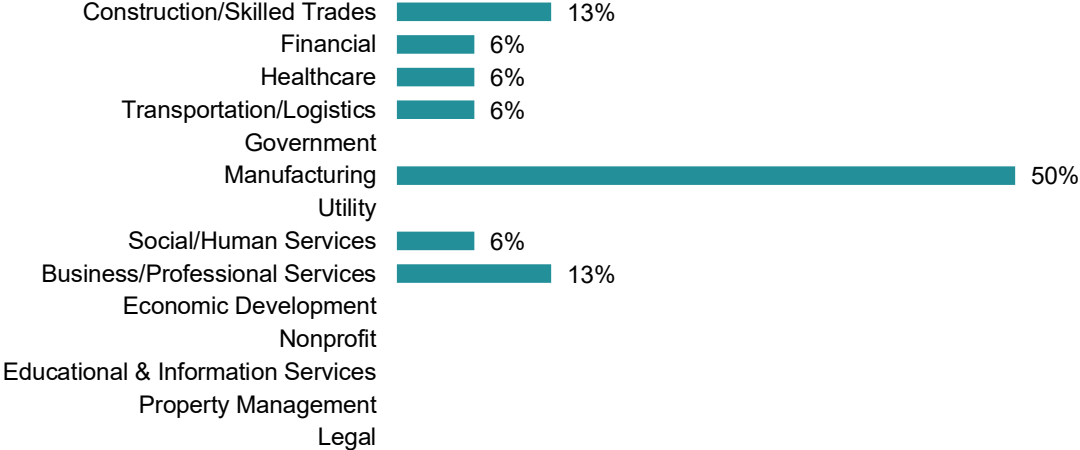
Industries from Pickaway County



Industries from Hocking County



Industries from Ross County



Industries from Vinton County

