



Department of
Job and Family Services

TO STRENGTHEN OHIO'S FAMILIES WITH SOLUTIONS TO TEMPORARY CHALLENGES

2026 Ohio Job Outlook Employment Projections



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Ohio Job Outlook to 2026

Overview

Employment projections are a key product of the Bureau of Labor Market Information. The bureau completes 10-year employment projections every two years and two-year employment projections annually. The projections are based on the most current data available at the time they are made; they are estimates of future employment assuming there are no changes in the current situation. People who use this information include individuals planning their education, training and careers; educational program planners developing training courses and curricula; administrators and legislators responsible for government policies; and business executives planning marketing and personnel strategies.

One key use of the long-term employment projections is the identification of Ohio's in-demand occupations. Statistical thresholds for wage, growth and annual openings determine the baseline list of occupations used.¹ The list of in-demand jobs is for operational and implementation purposes, specifically to foster cross-agency alignment and to better target job-matching and career-planning services through **OhioMeansJobs.com**.

This report presents Ohio employment projections from 2016 to 2026. It is divided into three sections. The "Ohio Population Trends" section presents population projections and historical labor force participation rates. The "Ohio Industry Employment" section presents employment projections for Ohio's goods-producing and service-providing industries. The "Ohio Occupational Employment" section presents employment projections for occupations and occupational groups.

Overall, the Ohio economy is expected to add 253,000 additional jobs between 2016 and 2026, with an expected 664,000 job openings annually.² The health care and social assistance services industries are expected to add the most jobs, and a large portion of job growth will come from health care occupations. Read more to learn about the growth expectations for Ohio's industries and occupations.

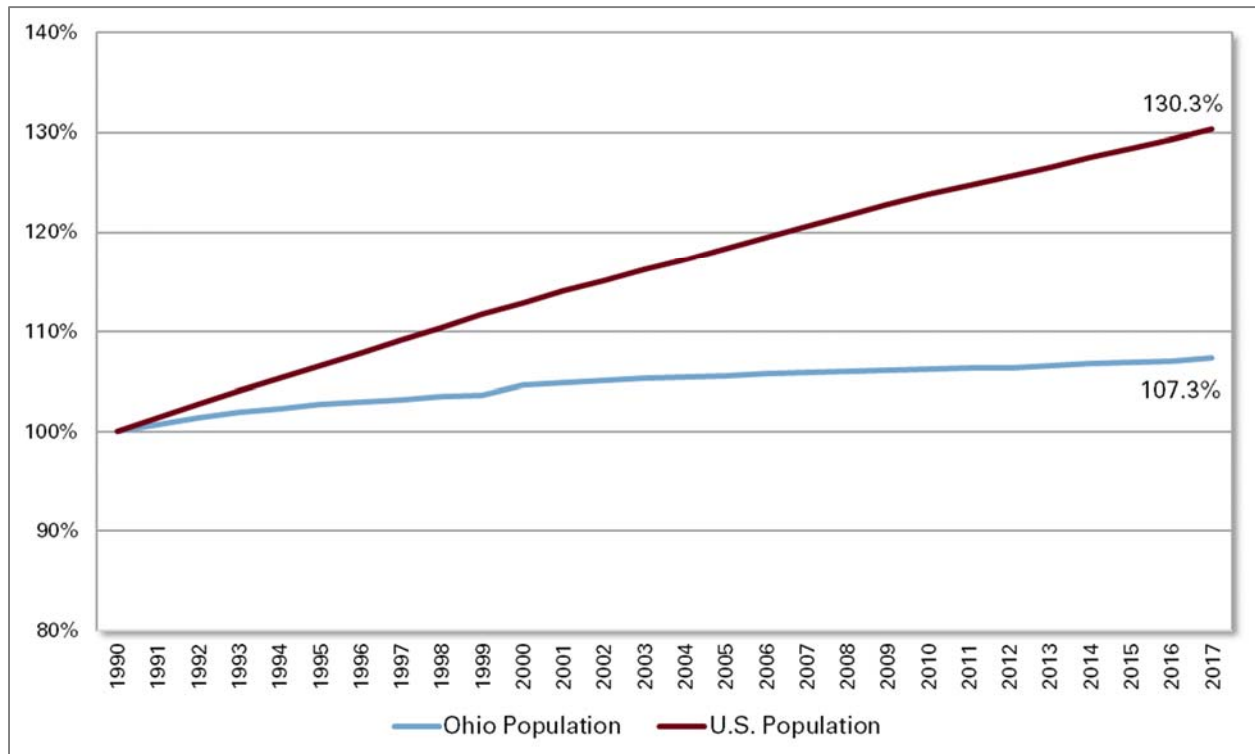
¹ Additional factors included are employment patterns for key industry clusters, employer job-forecasting survey data, and assessments by a review committee.

² Read the New Annual Openings Methodology on page 12 to learn about how a newly adopted method of calculating separation rates has impacted the number of job openings.

Ohio Population Trends

Ohio's population has been growing more slowly than the national average. While the U.S. population grew 30.3 percent from 1990 to 2017, Ohio's population grew only 7.3 percent (see Figure 1). Nationally, population growth has been trending slower. U.S. population grew 23.8 percent from 1990 to 2000, but only 15.4 percent since 2000. This trend is more pronounced in Ohio, where the state population grew 6.2 percent from 1990 to 2000, but only 2.6 percent since 2000.

Figure 1. Population Growth as a Percentage from 1990



Source: U.S. Census Bureau and U.S. Bureau of Economic Analysis

Ohio's slower-than-average growth is likely to continue, as growth rates are expected to nearly flatten in the coming decade (Figure 2). The projected 10-year population growth rate for the U.S. is 8.1 percent, with the working-age population (age 16 and older) expected to grow at a rate of 9.6 percent. In comparison, the projected 10-year population growth rate for Ohio is 0.4 percent, with the working-age population expected to grow at a rate of 1.1 percent. The oldest population group (65 and older) is expected to grow 37.8 percent in the entire U.S. and 25.0 percent in Ohio. While the 25-to-64 age group is expected to increase nationally by 4.1 percent, it is expected to decline in Ohio by 5.5 percent.

Figure 2. U.S. and Ohio Population Projections (in thousands)

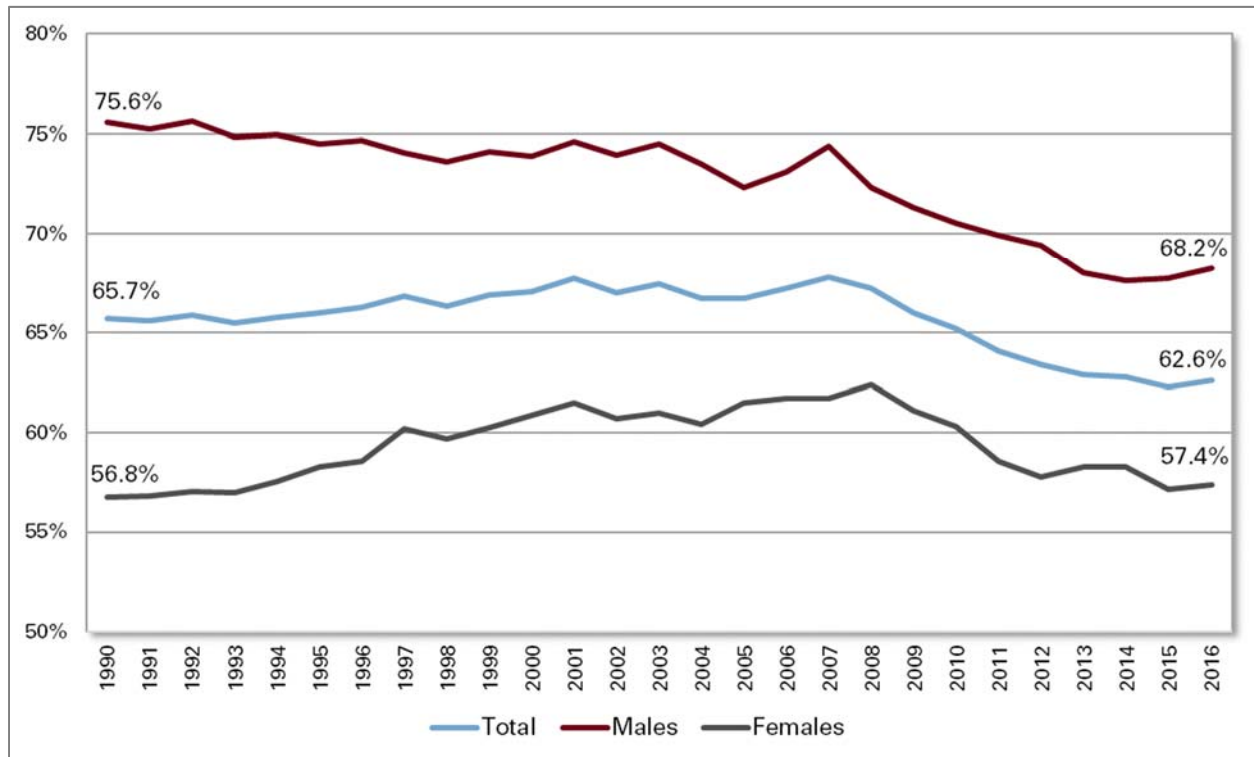
	2015	2020	2025	% change 2015-2025
U.S.				
Total Population	321,369	334,503	347,335	8.1%
Working-Age Population	256,107	268,750	280,749	9.6%
Age 25 to 64	168,689	173,379	175,664	4.1%
Age 65 and over	47,830	56,441	65,920	37.8%
Ohio				
Total Population	11,549	11,575	11,599	0.4%
Working-Age Population	9,228	9,273	9,328	1.1%
Age 25 to 64	6,006	5,874	5,678	-5.5%
Age 65 and over	1,795	2,011	2,244	25.0%

Source: Ohio Development Services Agency and U.S. Census Bureau

Even though the total and working-age populations in Ohio have been growing, labor force participation rates have been declining. This means fewer people in the working-age population are working or actively looking for work. In 2000, the labor force participation rate for Ohio was 67.1 percent; by 2016 it had dropped to 62.6 percent.

Figure 3 shows the labor force participation rates for men, women, and the total working-age population from 1990 to 2016.

Figure 3. Ohio Labor Force Participation Rates by Gender – 1990 to 2016



Source: Bureau of Labor Statistics

The decline in labor force participation is part of a national trend. At first glance it appears the recession may have caused a steep decline in participation rates. During the recession, some individuals were discouraged and stopped looking for work, which means they were no longer part of the labor force. Many of these individuals rejoined the labor force as the economy recovered.

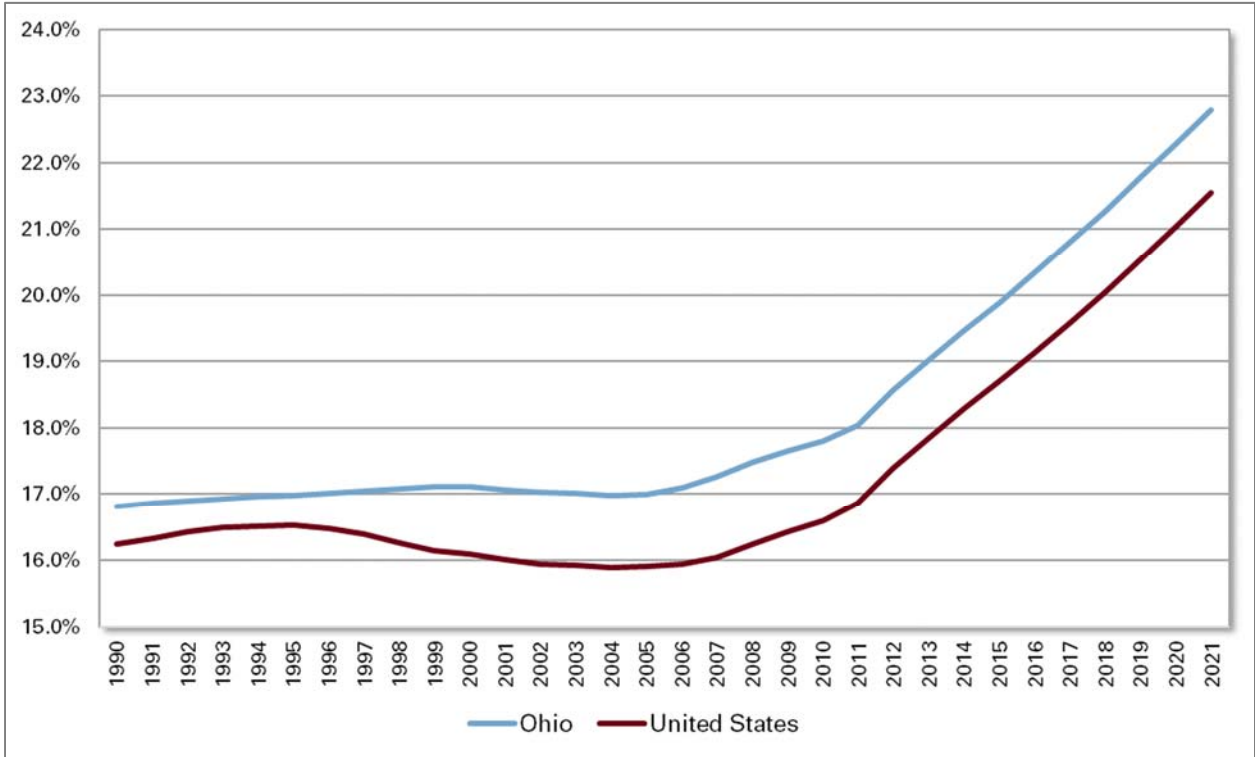
However, other factors have been driving the decline, as well. The strongest factor, one that began at the height of the recession, was the beginning of retirements for the baby boom generation. In 2008 the first of the baby boomers turned 62 and became eligible for Social Security; in 2011 they turned 65, the traditional age for retirement. Nationally, about 10,000 baby boomers turn 65 each day, and this number is expected to surpass 11,000 per day in the next decade.³ Even though they have retired, they are still part of the working age population. If they are not employed and not actively looking for work, they count against the labor force participation rate. Continuing retirements among the baby boomers will push labor force participation rates lower. Figure 4 shows the percentage of those 65 and older in the working-age population projected to 2021.

A second factor affecting participation rates is an overall decline in labor force participation among many demographic groups. For example, labor force participation among prime-age men (ages 25 to 54) declined for 60 years, from 1954 to 2014.⁴

³ <https://www.gao.gov/assets/690/680646.pdf>

⁴ <https://data.bls.gov/timeseries/LNS11300061>

Figure 4. Percentage of Working-Age Population Age 65 and Older



Source: IHS Markit Ltd

Ohio Industry Employment

This section shows projected employment changes for a variety of industry classifications. Business establishments are classified into industries according to the primary goods and services they produce or provide, using the North American Industry Classification System (NAICS). For example, factories assembling cars are classified in the motor vehicle manufacturing industry, and supermarkets are in the grocery store industry. See Appendix Table A for examples of types of businesses by NAICS classification. NAICS has several levels of classification, each giving a more detailed picture of each industry. This report presents industry employment projections at the NAICS sector and industry-group levels to illustrate expected changes.⁵ Industry employment projections were made at the four-digit NAICS industry level using a variety of models, including single-equation regression models. These models related Ohio industry employment to national industry employment and other key economic determinates for Ohio, especially income and population.

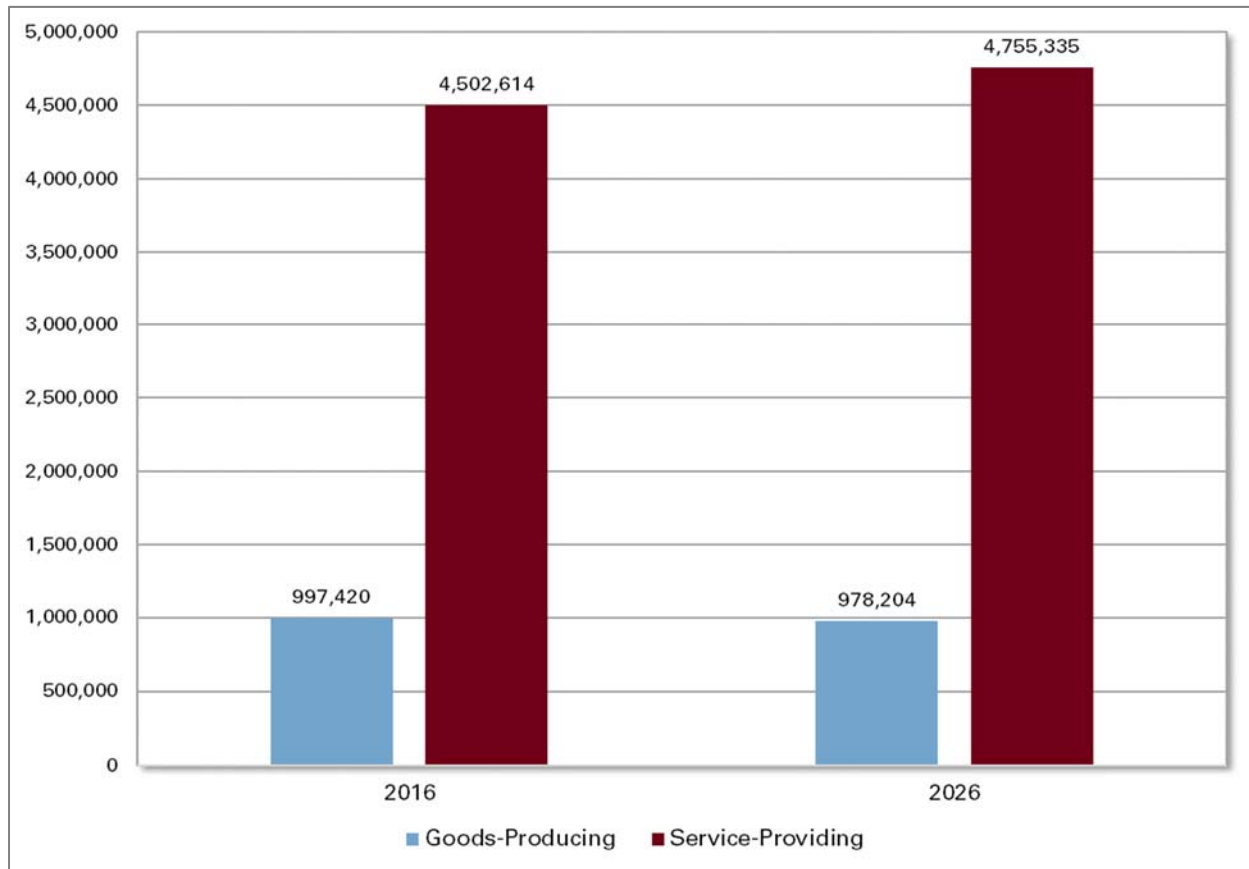
Industry Sectors: Industries typically are grouped in two broad categories: goods-producing, which produce physical products, and service-providing, which are all other industries. The goods-producing industry sectors are agriculture, forestry, fishing and hunting; mining, quarrying, and oil and gas extraction; construction; and manufacturing. The service-providing industry sectors are wholesale trade; retail trade; transportation and warehousing; utilities; information; finance and insurance; real estate and rental and leasing; professional, scientific and technical services⁶; management of companies and enterprises; administrative and support and waste management and remediation services⁷; educational services; health care and social assistance; arts, entertainment and recreation; accommodation and food services; other services (except public administration); and government.

⁵ NAICS consists of the following industry levels: 11 supersectors (individual two-digit NAICS or several two-digit NAICS grouped together); 20 sectors (individual two-digit NAICS); 99 subsectors (three-digit NAICS); 312 industry groups (four-digit NAICS); 713 industries (five-digit NAICS); and 1,065 detailed NAICS (six-digit NAICS).

⁶ Short title, "Professional and technical services" used in charts / tables.

⁷ Short title, "Administrative and waste services" used in charts / tables.

Figure 5. Ohio Industry Employment Outlook



Source: Ohio Bureau of Labor Market Information

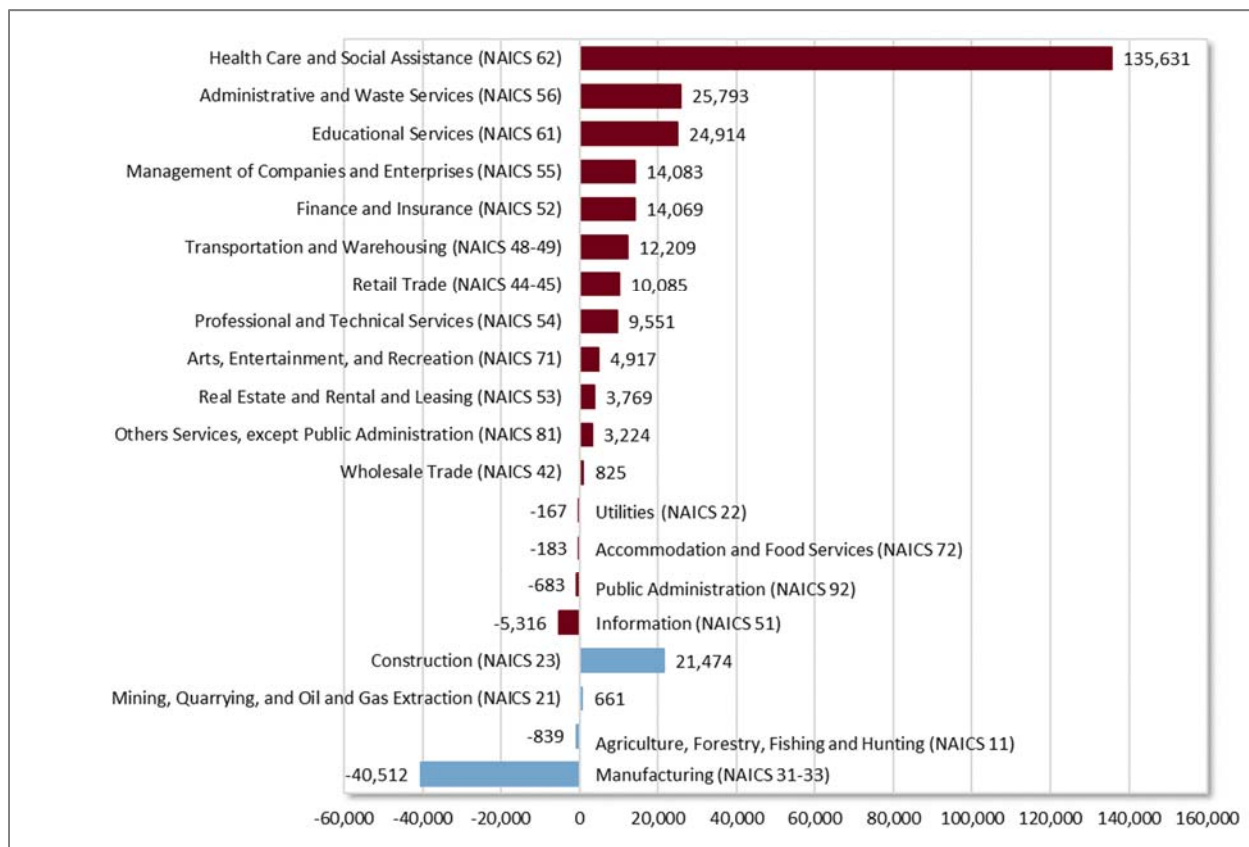
Figure 5 details employment projections for goods-producing and service-providing industries. Overall, the number of jobs for Ohioans is expected to rise from 5.794 million in 2016 to 6.047 million by 2026, an increase of more than 253,000 jobs. Service-providing industries are expected to add 252,721 jobs, an increase of 5.6 percent. Goods-producing industries are expected to shrink by 19,216 jobs, a decrease of 1.9 percent.⁸

Figure 6 shows the employment change expected for each industry sector between 2016 and 2026. Service-providing industries are indicated by a dark red bar; goods-producing industries are indicated by a blue bar. Among the goods-producing sectors, construction is projected to grow by 21,474 jobs and manufacturing is projected to shrink by 40,512 jobs. Growth among the service-providing sectors will be led by the health care and social assistance industry, which is expected to add more than 135,000 jobs, a 16.5 percent increase. The administrative and waste services industry is expected to add more than 25,000 jobs. Educational services is also expected to add nearly 25,000 jobs.

See Appendix Table B for industry projections by absolute and percent change.

⁸ Self-employed and other workers whose jobs fall outside of traditional industry classifications are expected to add 19,828 jobs, an increase of 6.7 percent.

Figure 6. Ohio Employment Outlook by Industry Sector, 2016-2026



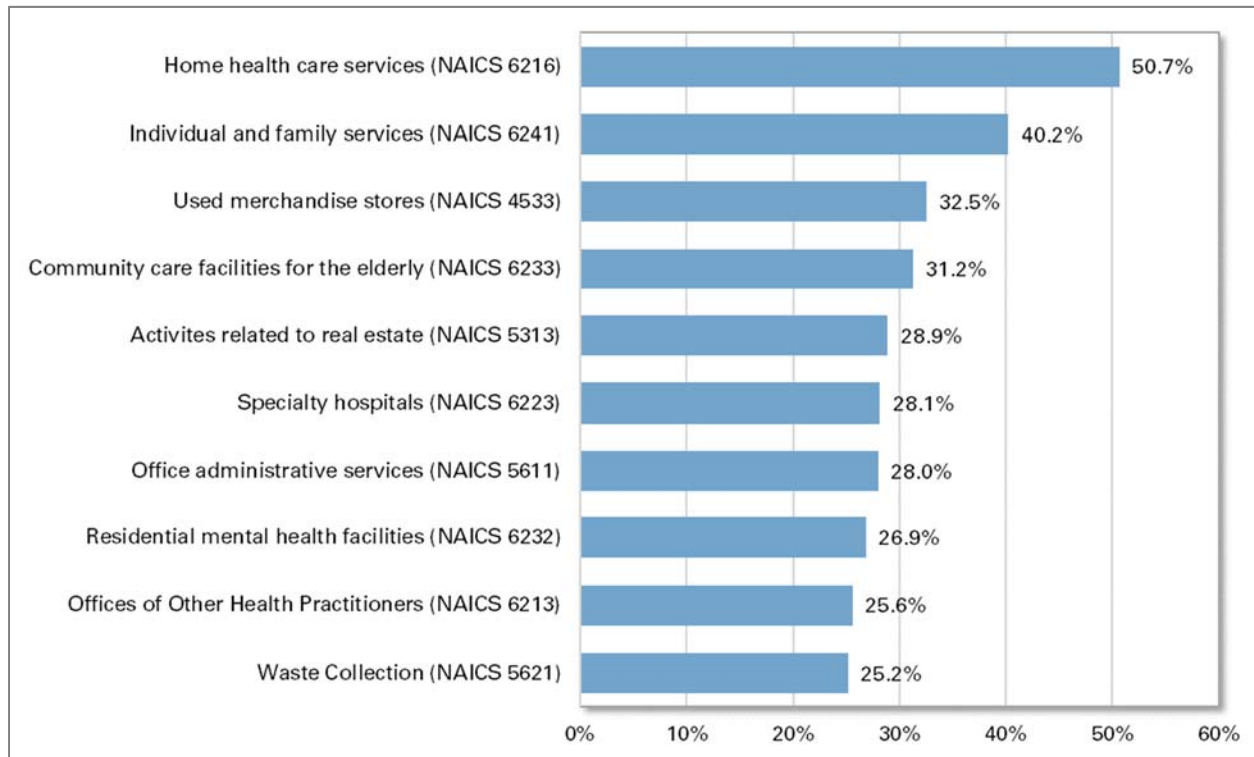
Source: Ohio Bureau of Labor Market Information

High-Growth Industry Groups: Each sector contains industry groups of related industries; these industry groups can change in different ways. Figure 7 shows the 10 industry groups expected to grow the fastest (between 25.2 and 50.7 percent) from 2016 to 2026.

The fastest-growing industry group is projected to be home health care services (NAICS 6216), with an increase of 50.7 percent. This industry group is in the health care and social assistance sector. Five other fastest-growing industry groups are also in that sector: individual and family services (NAICS 6241), with a 40.2 percent increase; community care facilities for the elderly (NAICS 6233), with a 31.2 percent increase; specialty (excluding psychiatric and substance abuse) hospitals (NAICS 6223), with a 28.1 percent increase; residential mental health facilities (NAICS 6232), with a 26.9 percent increase; and offices of other health practitioners (NAICS 6213), with a 25.6 percent increase. One reason for the growth in this sector is Ohio’s aging population, as more baby boomers reach retirement age.

See Appendix Table C for a list of the top 30 industry groups with the fastest expected growth.

Figure 7. Top 10 Ohio Industry Groups with the Fastest Job Growth



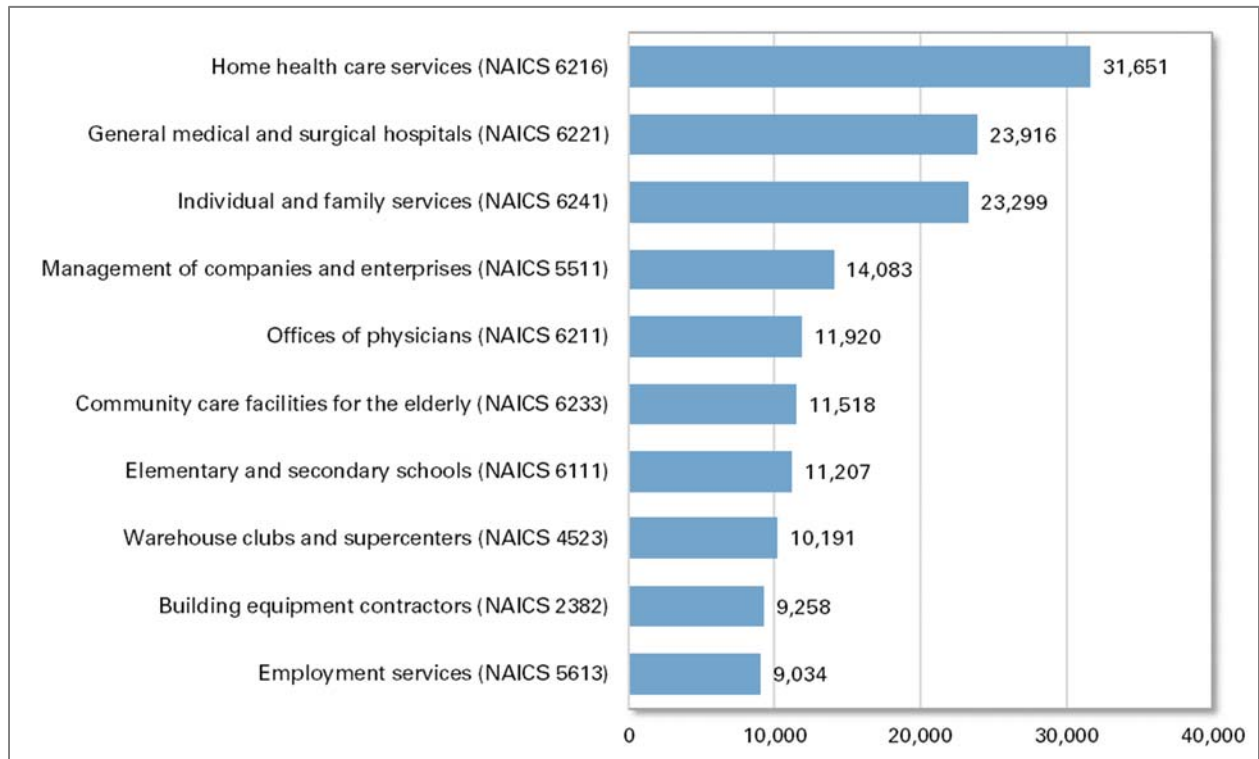
Source: Ohio Bureau of Labor Market Information

Most New Jobs: The 10 industry groups projected to add the most new jobs are shown in Figure 8; they are expected to add 156,077, or 61.6 percent, of new jobs from 2016 to 2026.

The fastest growing industry group, home health care services (NAICS 6216), is also the industry group expected to add the most jobs by 2026. Five of the top six industry groups expected to create the most jobs are in the health care and social assistance sector. These include home health care services (NAICS 6216), general medical and surgical hospitals (6221), individual and family services (NAICS 6241), offices of physicians (NAICS 6211), and community care facilities for the elderly (NAICS 6233).

See Appendix Table D for a complete list of the top 30 private-sector industries with the most new jobs.

Figure 8. Ohio Industries Adding the Most New Jobs, 2016-2026



Source: Ohio Bureau of Labor Market Information

See Appendix Table E for a complete look at industry projections by NAICS classification levels.

Ohio Occupational Employment

The employment outlook for individual occupations is affected by the industries that employ them. These occupational estimates are derived by creating an industry-occupation matrix using industry staffing patterns developed from data supplied by Ohio employers in the Occupational Employment Statistics (OES) survey. For example, some occupations, such as registered nurses and structural iron workers, are highly concentrated in a few industries; demand for those occupations depends on the health of those industries. Other occupations, such as secretaries and computer systems analysts, are present in many industries; demand for those occupations is more closely tied to changes in the economy. Changes in technology, business practices and operations affect how employers structure staffing to improve productivity. For example, technological advances will continue to reduce the need for such occupations as telephone operators, typists, travel agents and order clerks. Industry staffing patterns were adjusted for expected technological change and other factors from national data provided by the U.S. Bureau of Labor Statistics (BLS).

Understanding the employment outlook of occupations is important for career planning. As some occupations are expected to grow and others are expected to shrink, Ohio developed a list of in-demand occupations to assist in career planning. Along with other information, the employment outlook of occupations provides the baseline data for the in-demand list using statistical thresholds for wages, annual openings and growth. The in-demand list is available and utilized throughout **OhioMeansJobs.com** to better target job matching and career planning services provided on the website. This section presents the job outlook in Ohio by type of work and required education and training levels.

Occupations are classified using the Standard Occupational Classification (SOC) system, which has 22 groups of occupations with related types of work. For example, one occupational group consists of managerial occupations. Within each occupational group are specific occupations, each with different requirements for knowledge, skills, abilities and duties. Occupations are classified at the six-digit SOC level. See Appendix Table F for a comprehensive look at occupational projections by occupational group.

New Annual Openings Methodology

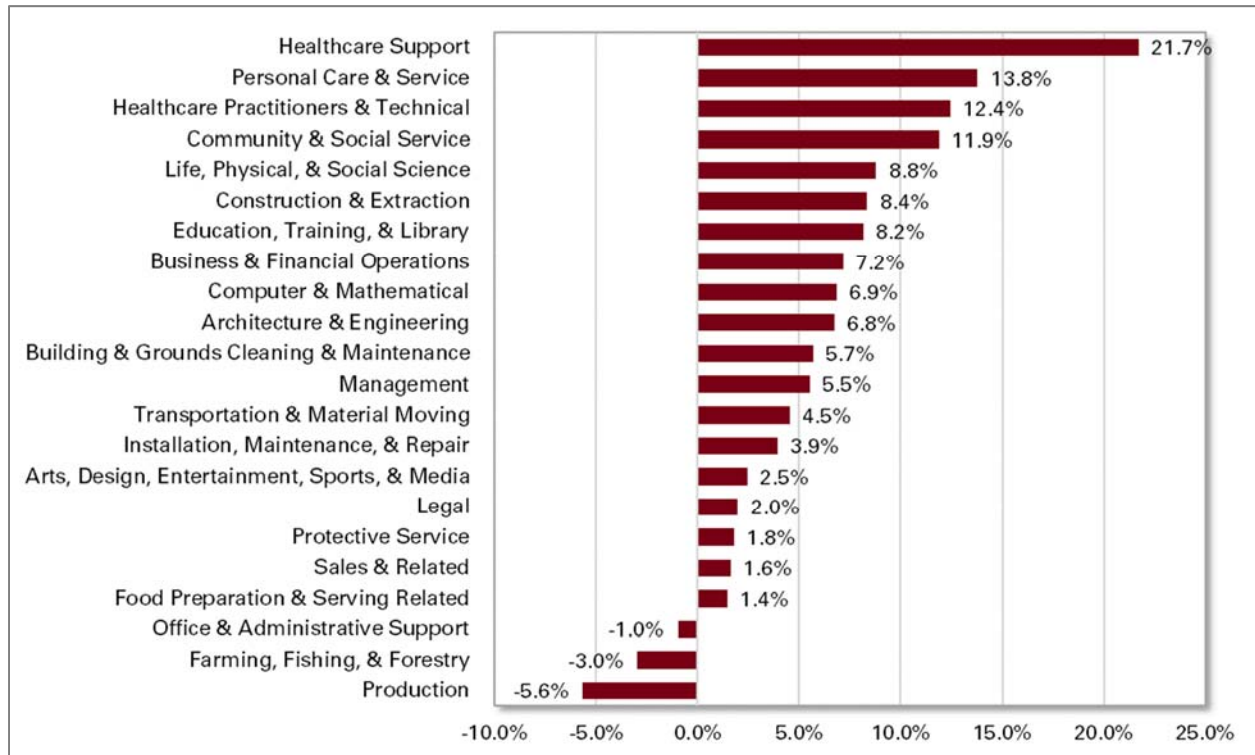
Users familiar with projections data may notice that the numbers of projected openings are significantly higher in this report than in past projections. This is due to the adoption of a new methodology developed by BLS that changes the way job openings are estimated. Because of the change in methodology, long-term projections from previous periods should not be compared to newer projections going forward. The previous methodology assumed that most individuals followed a “traditional” career path: entering employment at a young age, remaining in the same occupation until retirement, and then being replaced by another worker. The new methodology reflects the changing workforce of the 21st century and recognizes that workers may have several career changes during their working lives. This dynamic workforce is reflected in the estimation of job openings, which are created not only when workers retire, but also when they move from one occupation to another. The resulting data is more accurate and reliable, especially for smaller occupations. (For more information on the new separations rate methodology, see <https://www.bls.gov/emp/documentation/separations.htm>).

Ohio is expected to add 253,000 jobs from 2016 to 2026. Perhaps more important to individuals searching for jobs, however, is the expected number of annual job openings. On average, Ohio's economy is expected to have over 650,000 job openings annually. About 4 percent of annual job openings will result from the creation of additional jobs. About 41 percent of annual job openings will result from the need to replace workers who leave the labor force, usually upon retirement. The remaining nearly 55 percent of openings will result from the need to replace workers who switch occupations.

The accuracy of employment projections is subject to error because of the many unknown factors that will affect the economy over the projection period. Furthermore, although employment projections and related job outlook information can greatly inform career decisions, they should not be the sole basis for a choice of career.

Fastest-Growing Occupational Groups: Figure 9 shows the projected fastest-growing occupational groups. Health care support occupations are expected to grow the most, at 21.7 percent. The next-fastest growing occupational group is personal care and service occupations, at 13.8 percent. Two of the three fastest-growing occupational groups are healthcare support and healthcare practitioners and technical occupations. See Appendix Table G for a list of Ohio’s fastest-growing occupations.

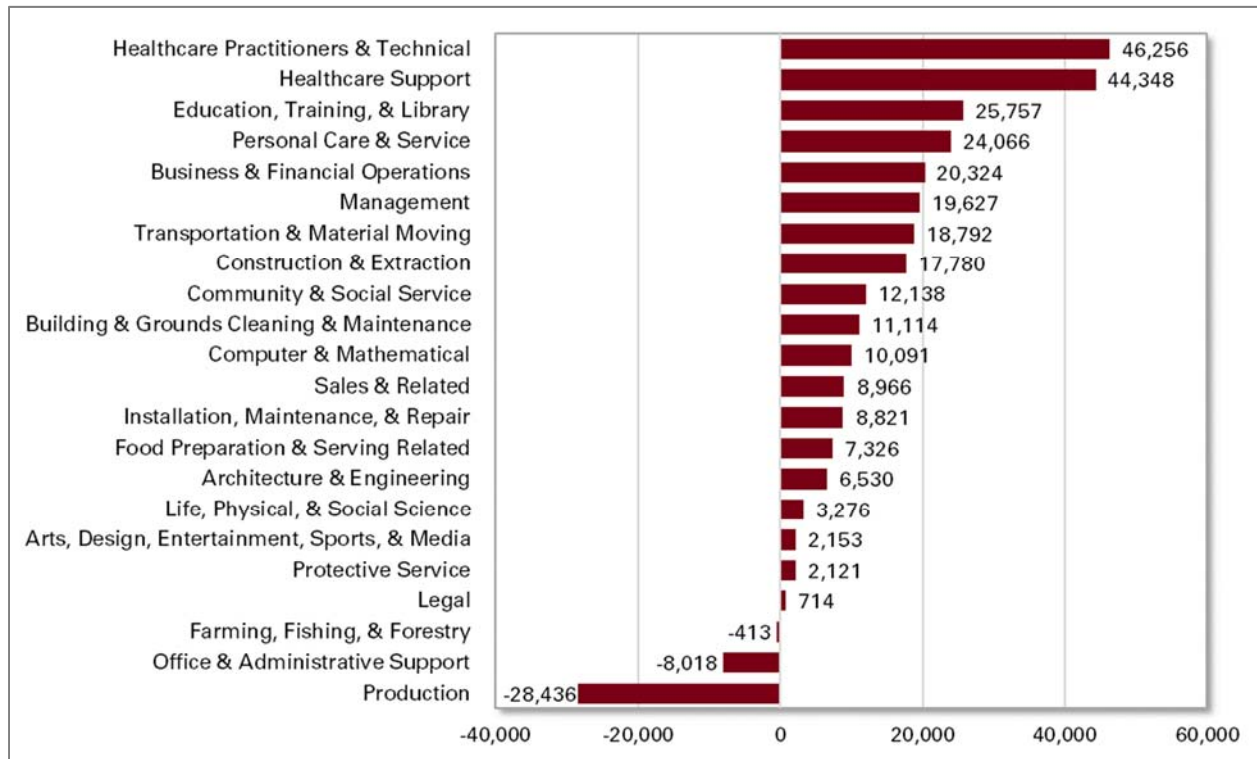
Figure 9. Ohio Rate of Employment Change by Major Occupational Group, 2016-2026



Source: Ohio Bureau of Labor Market Information

Occupational Groups with the Most New Jobs: As with industries, fast-growing occupational groups may be relatively small and may not add as many new jobs as larger groups that are growing more slowly. The health care practitioners and technical occupations group is expected to add 46,256 jobs, and the health care support occupations group is expected to add 44,348 jobs. Almost one-third of new jobs will be in these health care occupational groups. Figure 10 shows the major occupational groups ranked in terms of number of jobs.

Figure 10. Projected Employment Change by Occupational Group, 2016-2026



Source: Ohio Bureau of Labor Market Information

Occupations with the Most Annual Openings: New job growth is one component of occupational demand, but needs arising from transfers out of occupations and exits from the labor force result in a larger number of job openings. About 96 percent of the job openings from 2016 to 2026 are expected to result from the need to replace workers who leave the labor force or switch occupations. Even shrinking occupations have replacement needs, and they may provide substantial opportunities for employment.

Figure 11 shows the top 10 occupations with the most projected annual openings. Of the top 10, combined food preparation and serving workers, including fast food (SOC 35-3021) leads with an expected 31,702 annual openings. Rounding out the top five are retail salespersons (SOC 41-2031); cashiers (SOC 41-2011); waiters and waitresses (SOC 35-3031); and laborers/freight/stock/material movers, hand (SOC 53-7062). See Appendix Table H for the full list of occupations with the most annual openings.

Figure 11. Occupations in Ohio with the Most Projected Annual Openings, 2016-2026

Occupational Title	Total	Median Wage⁹ May 2017
Comb. Food Prep. & Serv. Work, inc. Fast Food (SOC 35-3021)	31,702	\$9.21
Retail Salespersons (SOC 41-2031)	22,607	\$10.67
Cashiers (SOC 41-2011)	21,723	\$9.31
Waiters and Waitresses (SOC 35-3031)	18,007	\$9.25
Laborers/Freight/Stock/Material Movers, Hand (SOC 53-7062)	16,347	\$12.92
Janitors & Cleaners, ex. Maids/Housekeeping Cleaners (SOC 37-2011)	12,606	\$11.50
Home Health Aides (SOC 31-1011)	12,020	\$10.33
Customer Service Representatives (SOC 43-4051)	11,757	\$15.50
Stock Clerks and Order Fillers (SOC 43-5081)	11,107	\$11.56
Office Clerks, General (SOC 43-9061)	10,498	\$14.88

Source: Ohio Bureau of Labor Market Information

Self-Employment: The number of self-employed individuals varies widely by occupation. Appendix Table I provides a list of the 57 occupations that have at least 1,000 self-employed workers. The self-employed percentage ranges from 1 percent for laborers/freight/stock/material movers, hand (SOC 53-7062) to 90.3 percent for door-to-door sales workers, news and street vendors, and related workers (SOC 41-9091).

Figure 12 shows occupations in which more than half the people employed in that occupation are self-employed.

⁹ Wage estimates are based on Ohio's OES surveys.

Figure 12. Occupations with High Self-Employment, 2016

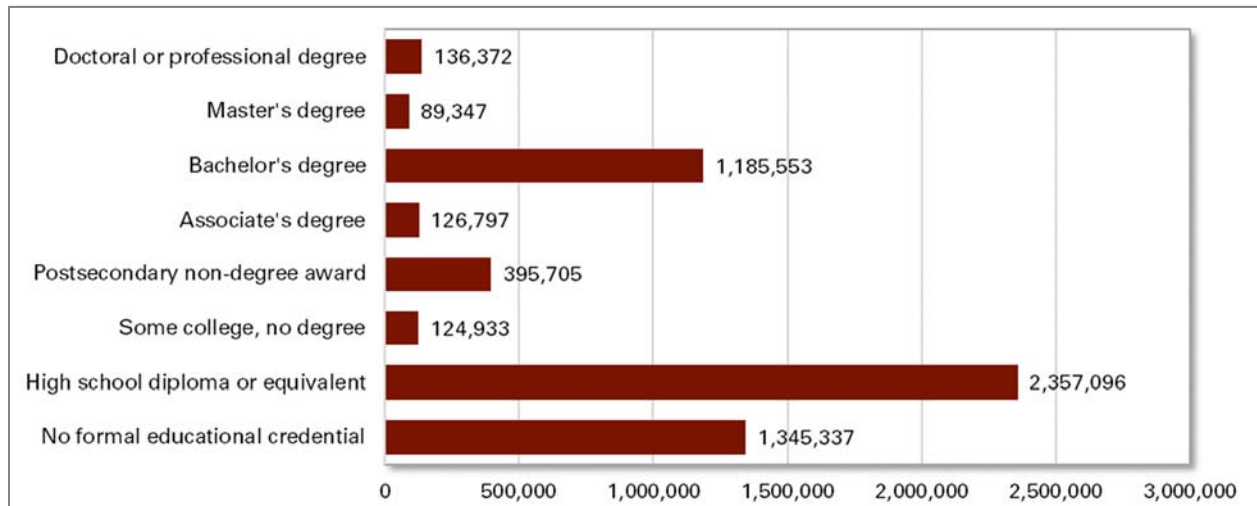
Occupational Title	2016 Employment	Self-Employed	Percent Self-Employed
Door-To-Door Sales, News/Street Vendors, & Related Sales Workers (SOC 41-9091)	5,168	4,665	90.3%
Photographers (SOC 27-4021)	5,724	3,903	68.2%
Funeral Service Managers (SOC 11-9061)	1,316	876	66.6%
Writers and Authors (SOC 27-3043)	4,185	2,673	63.9%
Craft Artists (SOC 27-1012)	508	305	60.0%
Art Directors (SOC 27-1011)	2,889	1,716	59.4%
Multi-Media Artists and Animators (SOC 27-1014)	1,007	594	59.0%
Fine Artists, including Painters, Sculptors, & Illustrators (SOC 27-1013)	1,784	1,045	58.6%
Managers, All Others (SOC 11-9199)	24,170	13,717	56.8%
Real Estate Brokers (SOC 41-9021)	1,623	917	56.5%
Real Estate Sales Agents (SOC 41-9022)	15,323	8,556	55.8%

Source: Ohio Bureau of Labor Market Information

Education and Training: Each occupation has typical education levels associated with it, although in practice workers in an occupation may have a range of educational experience. Some occupations have specific requirements associated with licensure or certification. Knowledge of the typical education level associated with an occupation can be useful for career planning and job seeking.

Figure 13 shows the distribution of jobs by their typical education level in 2016. That year, about 64 percent of all jobs had a typical education level of a high school diploma or less. Over 35 percent of jobs had a typical education level of some form of post-secondary education, which could be anything from a certificate to an advanced degree. Over 24 percent of jobs had a bachelor's degree or higher as a typical education.

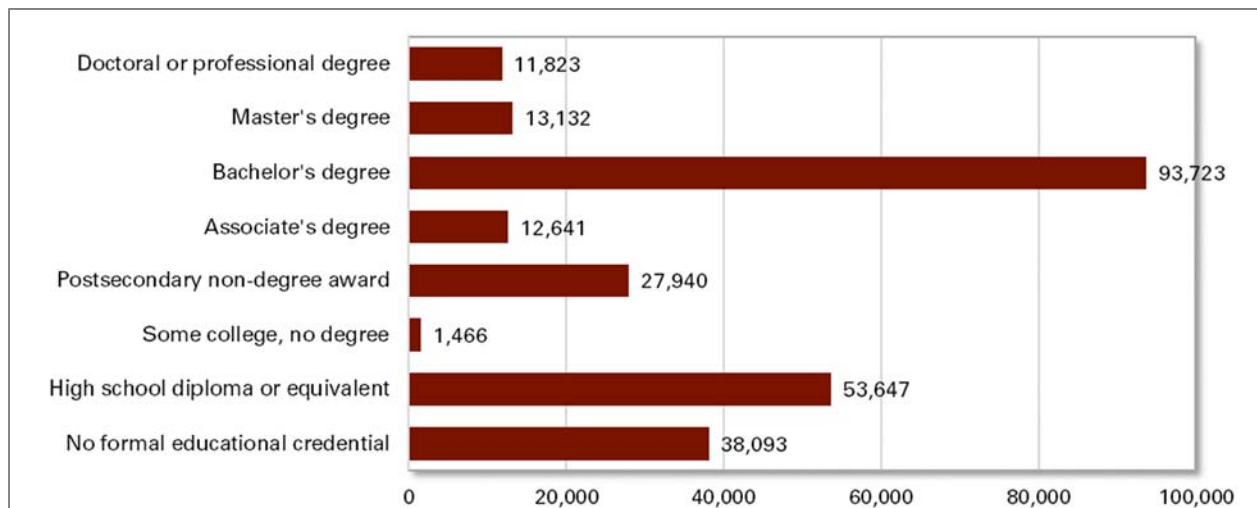
Figure 13. 2016 Employment by Typical Education Levels



Source: Ohio Bureau of Labor Market Information

Figure 14 shows projected net job growth by education level. Thirty-six percent of the net job growth from 2016 to 2026 is expected to be in occupations typically associated with a high school diploma or less. Sixty-three percent of net job growth is anticipated in occupations typically associated with some form of post-secondary education. A predicted 47 percent of job growth will be in occupations typically associated with a bachelor's degree or higher. This represents an expected shift toward occupations associated with higher education levels.

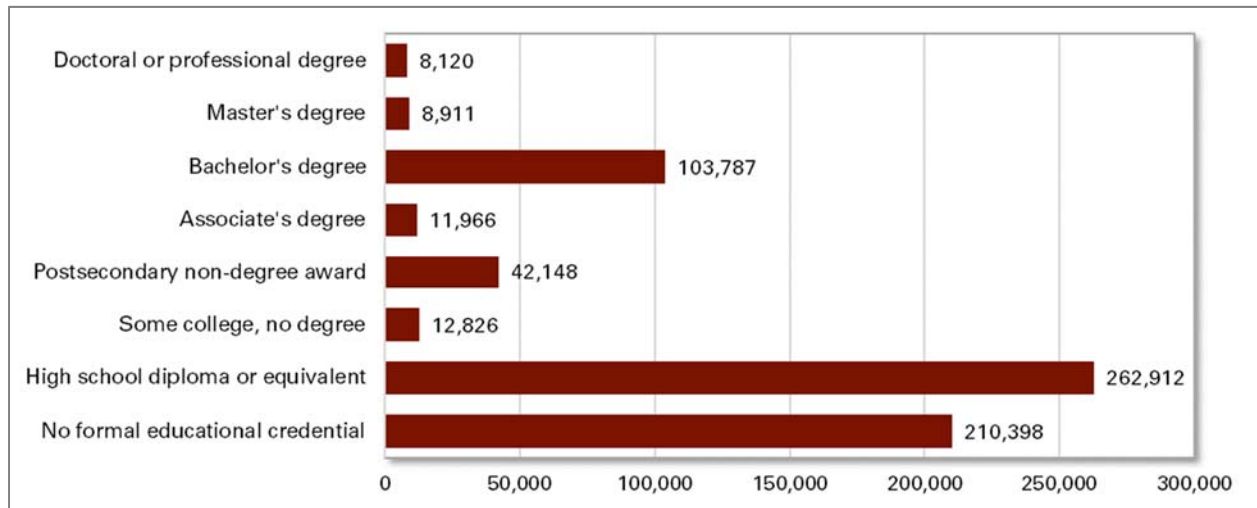
Figure 14. Projected Net Job Growth by Education Level, 2016-2026



Source: Ohio Bureau of Labor Market Information

Despite this expected shift, an anticipated 71.6 percent of annual job openings still will be in occupations associated with a high school diploma or less. See Figure 15.

Figure 15. Estimated Annual Job Openings by Education Level, 2016-2026



Source: Ohio Bureau of Labor Market Information

For detailed data regarding annual openings for occupations with employment of 100 or more, see Appendix Table J. This table also includes employment, wage, and education and training information.

Appendix Table K provides a detailed list of the educational and training classifications for all occupations.

Appendix Tables

Appendix Table A

Ohio Business Types by Industry Sector

GOODS-PRODUCING (PRIVATE)	
<i>MINING & LOGGING</i>	Mining and support activities, oil and gas extraction, cutting and transporting timber
<i>CONSTRUCTION</i>	Construction of buildings; heavy and civil engineering (bridges, roads); and specialty trade contractors (pouring concrete, site preparation, plumbing, painting, and electrical work)
<i>MANUFACTURING</i>	
Durable Goods	Nonmetal and metal products, machinery, computers and electronics, appliances, transportation equipment, furniture, medical, and wood products
Non-durable Goods	Food, printing, chemicals (toiletries), plastics, textiles, paper, apparel, leather, petroleum, and coal products
SERVICE-PROVIDING (PRIVATE)	
<i>TRADE, TRANSPORTATION, and UTILITIES</i>	
Wholesale Trade	Wholesalers of durable and nondurable goods, business to business electronic markets, and sales representatives
Retail Trade	Auto dealers, building and garden supply centers, furniture, electronic, appliance, food, health, gasoline, clothing, sporting, hobby, book, and music stores
Transportation, Warehousing & Utilities	Transportation (air, rail, water, truck, transit, pipeline, scenic, and sightseeing); private postal services, couriers, warehousing, and storage; utilities (power, natural gas distribution, water, and sewage)
<i>INFORMATION</i>	Publishing, motion picture, sound recording, broadcasting, phone services, data processing and hosting, news, libraries, and internet
<i>FINANCIAL ACTIVITIES</i>	
Finance and Insurance	Banks, securities, insurance, funds, and trusts
Real Estate, Rental, & Leasing	Real estate agents; rental and leasing of automobiles, consumer goods, and machinery
<i>PROFESSIONAL & BUSINESS SERVICES</i>	
Professional, Scientific, & Technical Services	Legal services, accounting, bookkeeping, architectural, engineering, design, computer system design, scientific research, advertising, marketing, photography, translation, and veterinary
Management of Companies and Enterprises	Holding companies, corporate offices, and management offices
Admin. Support & Waste Mgmt. Services	Administrative management (hotel management) and facilities support; employment placement, executive search, temporary help, and professional employer organizations; document preparation, telephone call centers, collection agencies, travel arrangement, security, pest control, janitorial, landscaping, carpet cleaning, packing and labeling, trade show organizer, and auctioneers
<i>EDUCATIONAL & HEALTH SERVICES</i>	
Educational Services	Private schools and universities and support services for education (college selection, test preparation, and guidance counseling)
Health Care & Social Assistance	Private ambulatory health, hospitals, nursing and residential care, and social assistance (care for children, elderly, and disabled, emergency relief, vocational and rehabilitation services)
<i>LEISURE & HOSPITALITY</i>	
Arts, Entertainment, & Recreation	Performing arts, spectator sports, museums, historical sites, zoos, parks, amusement, and gambling
Accommodation & Food Services	Hotels, RV parks, food, and drinking places
<i>OTHER SERVICES</i>	Repair (autos, electronics, machinery, and appliances); personal (hair, nail, skin, weight reduction, and tattoos); funeral homes; dry-cleaning and laundry services; pet care, parking lots, astrology, coin machines, dating, escort, future telling, life coaching, and personal fitness trainer; associations (churches, grant making, social advocacy, and unions)
GOVERNMENT (PUBLIC)	
Federal Government	Civilian federal employees including the U.S. Postal Service
State Government	Includes state universities and hospitals
Local Government	Includes local schools, community colleges, and local hospitals; township, city, and county employees such as fire fighters and park rangers

Appendix Table B
Ohio Employment Projections Report by Major Industry, 2016–2026

Industry Title	2016 Annual Employment	2026 Projected Employment	Change in Employment 2016-2026	Percent Change 2016-2026
Total	5,793,823	6,047,156	253,333	4.4%
Goods-Producing Industries	997,420	978,204	-19,216	-1.9%
Agriculture, Forestry, Fishing and Hunting	95,392	94,553	-839	-0.9%
Mining	11,082	11,743	661	6.0%
Construction	205,953	227,427	21,474	10.4%
Manufacturing	684,993	644,481	-40,512	-5.9%
Service-Providing Industries	4,502,614	4,755,335	252,721	5.6%
Wholesale Trade	235,282	236,107	825	0.4%
Retail Trade	575,582	585,667	10,085	1.8%
Transportation and Warehousing	192,221	204,430	12,209	6.4%
Utilities	19,275	19,108	-167	-0.9%
Information	71,762	66,446	-5,316	-7.4%
Finance and Insurance	236,224	250,293	14,069	6.0%
Real Estate and Rental and Leasing	63,179	66,948	3,769	6.0%
Professional and Technical Services	257,130	266,681	9,551	3.7%
Management of Companies and Enterprises	138,338	152,421	14,083	10.2%
Administrative and Waste Services	327,078	352,871	25,793	7.9%
Educational Services	428,683	453,597	24,914	5.8%
Health Care and Social Assistance	820,391	956,022	135,631	16.5%
Arts, Entertainment and Recreation	78,114	83,031	4,917	6.3%
Accommodation and Food Services	473,566	473,383	-183	0.0%
Other Services (Except Government)	233,824	237,048	3,224	1.4%
Government	351,965	351,282	-683	-0.2%
Self-Employed and Unpaid Family Workers	293,789	313,617	19,828	6.8%

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, September 2018.

Appendix Table C
Ohio's Top 30 Industries with the Fastest Job Growth, 2016–2026

NAICS Code	Industry Title	2016* Annual Employment	2026* Projected Employment	Change in Employment 2016-2026	Percent Change 2016-2026
6216	Home Health Care Services	62,447	94,098	31,651	50.7%
6241	Individual and Family Services	57,970	81,269	23,299	40.2%
4533	Used Merchandise Stores	7,680	10,178	2,498	32.5%
6233	Community Care Facilities for the Elderly	36,862	48,380	11,518	31.3%
5313	Activities Related to Real Estate	20,216	26,056	5,840	28.9%
6223	Specialty (except Psychiatric and Substance Abuse) Hospitals	8,027	10,285	2,258	28.1%
5611	Office Administrative Services	20,056	25,668	5,612	28.0%
6232	Residential Mental Health Facilities	30,574	38,786	8,212	26.9%
6213	Offices of Other Health Practitioners	32,179	40,410	8,231	25.6%
5621	Waste Collection	5,510	6,896	1,386	25.2%
6117	Educational Support Services	21,228	26,525	5,297	25.0%
6116	Other Schools and Instruction	10,770	13,406	2,636	24.5%
4541	Electronic Shopping and Mail Order Houses	18,960	23,586	4,626	24.4%
5416	Management, Scientific, and Technical Consulting Services	30,729	38,030	7,301	23.8%
6219	Other Ambulatory Health Care Services	11,156	13,787	2,631	23.6%
4881	Support Activities for Air Transportation	5,171	6,368	1,197	23.2%
5417	Scientific Research and Development Services	19,650	24,104	4,454	22.7%
4248	Beer, Wine, and Distilled Alcoholic Beverage Merchant Wholesalers	5,945	7,288	1,343	22.6%
8129	Other Personal Services	9,850	12,070	2,220	22.5%
6215	Medical and Diagnostic Laboratories	6,308	7,670	1,362	21.6%
5223	Activities Related to Credit Intermediation	13,760	16,616	2,856	20.8%
2131	Support Activities for Mining	4,763	5,739	976	20.5%
4442	Lawn and Garden Equipment and Supplies Stores	7,162	8,602	1,440	20.1%
6244	Child Day Care Services	32,856	39,237	6,381	19.4%
5629	Remediation and Other Waste Management Services	5,846	6,967	1,121	19.2%
2212	Natural Gas Distribution	5,438	6,442	1,004	18.5%
5414	Specialized Design Services	6,812	7,996	1,184	17.4%
4539	Other Miscellaneous Store Retailers	10,856	12,708	1,852	17.1%
5112	Software Publishers	6,406	7,490	1,084	16.9%
4931	Warehousing and Storage	46,448	53,874	7,426	16.0%

* Industries with 5,000 or more workers.

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, September 2018.

Appendix Table D
Ohio's Top 30 Industries with the Most New Jobs, 2016–2026

NAICS Code	Industry Title	2016 Annual Employment	2026 Projected Employment	Change in Employment 2016-2026	Percent Change 2016-2026
6216	Home Health Care Services	62,447	94,098	31,651	50.7%
6221	General Medical and Surgical Hospitals	267,454	291,370	23,916	8.9%
6241	Individual and Family Services	57,970	81,269	23,299	40.2%
5511	Management of Companies and Enterprises	138,338	152,421	14,083	10.2%
6211	Offices of Physicians	90,330	102,250	11,920	13.2%
6233	Community Care Facilities for the Elderly	36,862	48,380	11,518	31.3%
6111	Elementary and Secondary Schools	276,445	287,652	11,207	4.1%
4523	Warehouse Clubs and Supercenters	77,337	87,528	10,191	13.2%
2382	Building Equipment Contractors	67,412	76,670	9,258	13.7%
5613	Employment Services	142,094	151,128	9,034	6.4%
6213	Offices of Other Health Practitioners	32,179	40,410	8,231	25.6%
6232	Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities	30,574	38,786	8,212	26.9%
4931	Warehousing and Storage	46,448	53,874	7,426	16.0%
5416	Management, Scientific, and Technical Consulting Services	30,729	38,030	7,301	23.8%
6244	Child Day Care Services	32,856	39,237	6,381	19.4%
5242	Agencies, Brokerages, and Other Insurance Related Activities	45,063	51,033	5,970	13.3%
5313	Activities Related to Real Estate	20,216	26,056	5,840	28.9%
5611	Office Administrative Services	20,056	25,668	5,612	28.0%
6113	Colleges, Universities, and Professional Schools	95,652	101,070	5,418	5.7%
6117	Educational Support Services	21,228	26,525	5,297	25.0%
4541	Electronic Shopping and Mail Order Houses	18,960	23,586	4,626	24.4%
9991	Federal Government, Excluding Post Office	54,612	59,182	4,570	8.4%
5417	Scientific Research and Development Services	19,650	24,104	4,454	22.7%
5617	Services to Buildings and Dwellings	71,742	76,084	4,342	6.1%
6214	Outpatient Care Centers	29,144	33,445	4,301	14.8%
5614	Business Support Services	35,562	39,464	3,902	11.0%
6212	Offices of Dentists	31,959	35,690	3,731	11.7%
8121	Personal Care Services	27,830	30,946	3,116	11.2%
7139	Other Amusement and Recreation Industries	42,320	45,424	3,104	7.3%
4461	Health and Personal Care Stores	36,915	39,920	3,005	8.1%

Industries expected to have the most new jobs and growth rates of at least 25 percent.

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, September 2018.

Appendix Table E
Ohio's Industry Employment Projections Report, 2016–2026

NAICS Code	Industry Title	2016* Annual Employment	2026* Projected Employment	Change in Employment 2016-2026	Percent Change 2016-2026
Total All Industries		5,793,823	6,047,156	253,333	4.4%
Agriculture, Forestry, Fishing, and Hunting		95,392	94,553	-839	-0.9%
Mining		11,082	11,743	661	6.0%
213	Support Activities for Mining	4,763	5,739	976	20.5%
Construction		205,953	227,427	21,474	10.4%
236	Construction of Buildings	45,011	50,070	5,059	11.2%
2361	Residential Building Construction	19,383	21,511	2,128	11.0%
2362	Nonresidential Building Construction	25,628	28,559	2,931	11.4%
237	Heavy and Civil Engineering Construction	27,018	28,426	1,408	5.2%
2371	Utility System Construction	14,879	15,031	152	1.0%
2373	Highway, Street, and Bridge Construction	9,798	10,960	1,162	11.9%
238	Specialty Trade Contractors	133,924	148,931	15,007	11.2%
2381	Building Foundation and Exterior Contractors	26,452	29,297	2,845	10.8%
2382	Building Equipment Contractors	67,412	76,670	9,258	13.7%
2383	Building Finishing Contractors	20,543	21,381	838	4.1%
2389	Other Specialty Trade Contractors	19,517	21,583	2,066	10.6%
Manufacturing		684,993	644,481	-40,512	-5.9%
311	Food Manufacturing	59,796	59,965	169	0.3%
3114	Fruit and Vegetable Preserving and Specialty Manufacturing	10,918	12,017	1,099	10.1%
3115	Dairy Product Manufacturing	7,198	7,214	16	0.2%
3116	Animal Slaughtering and Processing	11,471	11,440	-31	-0.3%
3118	Bakeries and Tortilla Manufacturing	12,272	11,433	-839	-6.8%
3119	Other Food Manufacturing	10,463	10,801	338	3.2%
312	Beverage and Tobacco Product Manufacturing	8,410	8,309	-101	-1.2%
321	Wood Product Manufacturing	12,968	12,525	-443	-3.4%
3219	Other Wood Product Manufacturing	9,524	9,101	-423	-4.4%
322	Paper Manufacturing	19,855	18,083	-1,772	-8.9%
3222	Converted Paper Product Manufacturing	17,504	16,339	-1,165	-6.7%
323	Printing and Related Support Activities	21,608	17,679	-3,929	-18.2%
324	Petroleum and Coal Products Manufacturing	5,047	4,759	-288	-5.7%
325	Chemical Manufacturing	44,282	41,499	-2,783	-6.3%
3251	Basic Chemical Manufacturing	9,628	9,499	-129	-1.3%
3252	Resin, Rubber, and Artificial Fibers Manufacturing	5,558	5,206	-352	-6.3%
3255	Paint, Coating, and Adhesive Manufacturing	7,899	7,433	-466	-5.9%
3256	Soap, Cleaning Compound, and Toiletry Manufacturing	9,243	8,733	-510	-5.5%
326	Plastics and Rubber Products Manufacturing	56,685	50,099	-6,586	-11.6%
3261	Plastics Product Manufacturing	43,423	39,889	-3,534	-8.1%
3262	Rubber Product Manufacturing	13,262	10,210	-3,052	-23.0%
327	Nonmetallic Mineral Product Manufacturing	27,137	24,363	-2,774	-10.2%
3272	Glass and Glass Product Manufacturing	8,282	6,901	-1,381	-16.7%
3273	Cement and Concrete Product Manufacturing	5,776	5,493	-283	-4.9%
3279	Other Nonmetallic Mineral Product Manufacturing	7,775	7,545	-230	-3.0%
331	Primary Metal Manufacturing	36,821	32,443	-4,378	-11.9%
3311	Iron and Steel Mills and Ferroalloy Manufacturing	7,744	6,540	-1,204	-15.6%
3312	Steel Product Manufacturing from Purchased Steel	7,402	7,181	-221	-3.0%
3314	Other Nonferrous Metal Production	5,740	5,240	-500	-8.7%
3315	Foundries	12,655	10,629	-2,026	-16.0%
332	Fabricated Metal Product Manufacturing	98,413	95,830	-2,583	-2.6%
3321	Forging and Stamping	9,968	9,425	-543	-5.5%
3323	Architectural and Structural Metals Manufacturing	17,296	16,689	-607	-3.5%
3324	Boiler, Tank, and Shipping Container Manufacturing	7,708	7,756	48	0.6%
3327	Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing	24,724	25,453	729	3.0%

Appendix Table E – cont'd.
Ohio's Industry Employment Projections Report, 2016-2026

NAICS Code	Industry Title	2016* Annual Employment	2026* Projected Employment	Change in Employment 2016-2026	Percent Change 2016-2026
3328	Coating, Engraving, Heat Treating, and Allied Activities	12,643	11,928	-715	-5.7%
3329	Other Fabricated Metal Product Manufacturing	18,748	17,901	-847	-4.5%
333	Machinery Manufacturing	76,925	70,965	-5,960	-7.8%
3331	Agriculture, Construction, and Mining Machinery Manufacturing	6,318	6,534	216	3.4%
3332	Industrial Machinery Manufacturing	9,674	8,220	-1,454	-15.0%
3334	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	6,646	5,697	-949	-14.3%
3335	Metalworking Machinery Manufacturing	22,411	20,933	-1,478	-6.6%
3339	Other General Purpose Machinery Manufacturing	24,270	22,642	-1,628	-6.7%
334	Computer and Electronic Product Manufacturing	20,410	18,060	-2,350	-11.5%
3344	Semiconductor and Other Electronic Component Manufacturing	6,252	5,597	-655	-10.5%
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	10,700	9,770	-930	-8.7%
335	Electrical Equipment, Appliance, and Component Manufacturing	27,426	24,808	-2,618	-9.6%
3353	Electrical Equipment Manufacturing	8,187	7,548	-639	-7.8%
3359	Other Electrical Equipment and Component Manufacturing	6,824	6,509	-315	-4.6%
336	Transportation Equipment Manufacturing	125,354	123,325	-2,029	-1.6%
3361	Motor Vehicle Manufacturing	21,851	22,948	1,097	5.0%
3362	Motor Vehicle Body and Trailer Manufacturing	8,567	8,272	-295	-3.4%
3363	Motor Vehicle Parts Manufacturing	75,015	72,720	-2,295	-3.1%
3364	Aerospace Product and Parts Manufacturing	18,595	18,168	-427	-2.3%
337	Furniture and Related Product Manufacturing	15,514	15,689	175	1.1%
3371	Household and Institutional Furniture Manufacturing	11,282	11,556	274	2.4%
339	Miscellaneous Manufacturing	21,365	20,434	-931	-4.4%
3391	Medical Equipment and Supplies Manufacturing	8,779	9,003	224	2.6%
3399	Other Miscellaneous Manufacturing	12,586	11,431	-1,155	-9.2%
	Wholesale Trade	235,282	236,107	825	0.4%
423	Merchant Wholesalers, Durable Goods	128,126	129,912	1,786	1.4%
4231	Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers	14,597	14,901	304	2.1%
4233	Lumber and Other Construction Materials Merchant Wholesalers	7,345	7,452	107	1.5%
4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	25,093	23,851	-1,242	-5.0%
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	10,109	11,659	1,550	15.3%
4236	Electrical and Electronic Goods Merchant Wholesalers	11,764	11,324	-440	-3.7%
4237	Hardware, and Plumbing and Heating Equipment and Supplies Merchant Wholesalers	10,988	11,628	640	5.8%
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	32,363	33,476	1,113	3.4%
4239	Miscellaneous Durable Goods Merchant Wholesalers	12,711	12,927	216	1.7%
424	Merchant Wholesalers, Nondurable Goods	67,629	67,485	-144	-0.2%
4241	Paper and Paper Product Merchant Wholesalers	5,078	4,245	-833	-16.4%
4242	Drugs and Druggists' Sundries Merchant Wholesalers	7,052	6,197	-855	-12.1%
4244	Grocery and Related Product Wholesalers	24,472	26,500	2,028	8.3%
4246	Chemical and Allied Products Merchant Wholesalers	8,403	8,608	205	2.4%
4248	Beer, Wine, and Distilled Alcoholic Beverage Merchant Wholesalers	5,945	7,288	1,343	22.6%
4249	Miscellaneous Nondurable Goods Merchant Wholesalers	9,385	8,438	-947	-10.1%
425	Wholesale Electronic Markets and Agents and Brokers	39,527	38,710	-817	-2.1%

Appendix Table E – cont'd.
Ohio's Industry Employment Projections Report, 2016-2026

NAICS Code	Industry Title	2016* Annual Employment	2026* Projected Employment	Change in Employment 2016-2026	Percent Change 2016-2026
Retail Trade		575,582	585,667	10,085	1.8%
441	Motor Vehicle and Parts Dealers	78,297	79,669	1,372	1.8%
4411	Automobile Dealers	49,358	51,719	2,361	4.8%
4413	Automotive Parts, Accessories, and Tire Stores	24,307	23,600	-707	-2.9%
442	Furniture and Home Furnishings Stores	13,344	12,547	-797	-6.0%
4421	Furniture Stores	7,106	6,346	-760	-10.7%
4422	Home Furnishings Stores	6,238	6,201	-37	-0.6%
443	Electronics and Appliance Stores	16,775	14,546	-2,229	-13.3%
444	Building Material and Garden Equipment and Supplies Dealers	50,074	52,618	2,544	5.1%
4441	Building Material and Supplies Dealers	42,912	44,016	1,104	2.6%
4442	Lawn and Garden Equipment and Supplies Stores	7,162	8,602	1,440	20.1%
445	Food and Beverage Stores	105,100	105,851	751	0.7%
4451	Grocery Stores	94,025	94,626	601	0.6%
4452	Specialty Food Stores	6,768	6,671	-97	-1.4%
446	Health and Personal Care Stores	36,915	39,920	3,005	8.1%
447	Gasoline Stations	36,980	39,132	2,152	5.8%
448	Clothing and Clothing Accessories Stores	39,621	34,235	-5,386	-13.6%
4481	Clothing Stores	28,880	24,224	-4,656	-16.1%
4482	Shoe Stores	6,285	5,829	-456	-7.3%
451	Sporting Goods, Hobby, Book, and Music Stores	21,365	22,432	1,067	5.0%
4511	Sporting Goods, Hobby, and Musical Instrument Stores	18,911	20,595	1,684	8.9%
452	General Merchandise Stores	118,399	123,276	4,877	4.1%
4522	Department Stores	41,062	35,748	-5,314	-12.9%
4523	Warehouse Clubs and Supercenters	77,337	87,528	10,191	13.2%
453	Miscellaneous Store Retailers	29,965	31,052	1,087	3.6%
4532	Office Supplies, Stationery, and Gift Stores	8,554	5,875	-2,679	-31.3%
4533	Used Merchandise Stores	7,680	10,178	2,498	32.5%
4539	Other Miscellaneous Store Retailers	10,856	12,708	1,852	17.1%
454	Nonstore Retailers	28,747	30,389	1,642	5.7%
4541	Electronic Shopping and Mail Order Houses	18,960	23,586	4,626	24.4%
4542	Vending Machine Operators	5,424	2,950	-2,474	-45.6%
Transportation and Warehousing		192,221	204,430	12,209	6.4%
481	Air Transportation	10,299	10,981	682	6.6%
4812	Nonscheduled Air Transportation	6,102	6,617	515	8.4%
484	Truck Transportation	71,376	73,063	1,687	2.4%
4841	General Freight Trucking	54,114	55,369	1,255	2.3%
4842	Specialized Freight Trucking	17,262	17,694	432	2.5%
485	Transit and Ground Passenger Transportation	10,501	11,673	1,172	11.2%
4854	School and Employee Bus Transportation	4,535	5,229	694	15.3%
488	Support Activities for Transportation	19,625	19,888	263	1.3%
4881	Support Activities for Air Transportation	5,171	6,368	1,197	23.2%
4885	Freight Transportation Arrangement	7,142	6,039	-1,103	-15.4%
492	Couriers and Messengers	23,328	24,324	996	4.3%
4921	Couriers	21,782	22,557	775	3.6%
493	Warehousing and Storage	46,448	53,874	7,426	16.0%
Utilities		19,275	19,108	-167	-0.9%
2211	Power Generation and Supply	12,605	11,473	-1,132	-9.0%
2212	Natural Gas Distribution	5,438	6,442	1,004	18.5%
Information		71,762	66,446	-5,316	-7.4%
511	Publishing Industries, except Internet	22,703	19,618	-3,085	-13.6%
5111	Newspaper, Periodical, Book, and Directory Publishers	16,297	12,128	-4,169	-25.6%
5112	Software Publishers	6,406	7,490	1,084	16.9%
512	Motion Picture and Sound Recording Industries	5,998	6,696	698	11.6%

Appendix Table E – cont'd.
Ohio's Industry Employment Projections Report, 2016-2026

NAICS Code	Industry Title	2016* Annual Employment	2026* Projected Employment	Change in Employment 2016-2026	Percent Change 2016-2026
5121	Motion Picture and Video Industries	5,820	6,533	713	12.3%
515	Broadcasting, except Internet	6,385	5,768	-617	-9.7%
517	Telecommunications	24,345	20,875	-3,470	-14.3%
5173	Telecommunications Carriers, except Satellite	21,671	18,698	-2,973	-13.7%
518	Data Processing, Hosting, and Related Services	6,586	7,457	871	13.2%
519	Other Information Services	5,745	6,032	287	5.0%
Finance and Insurance		236,224	250,293	14,069	6.0%
522	Credit Intermediation and Related Activities	92,603	95,412	2,809	3.0%
5221	Depository Credit Intermediation	58,690	56,638	-2,052	-3.5%
5222	Nondepository Credit Intermediation	20,153	22,158	2,005	10.0%
5223	Activities Related to Credit Intermediation	13,760	16,616	2,856	20.8%
523	Securities, Commodity Contracts, and Other Financial Investments and Related Activities	18,209	22,551	4,342	23.9%
5231	Securities and Commodity Contracts Intermediation and Brokerage	9,186	8,713	-473	-5.2%
524	Insurance Carriers and Related Activities	124,247	131,360	7,113	5.7%
5241	Insurance Carriers	79,184	80,327	1,143	1.4%
5242	Agencies, Brokerages, and Other Insurance Related Activities	45,063	51,033	5,970	13.3%
Real Estate and Rental and Leasing		63,179	66,948	3,769	6.0%
531	Real Estate	44,114	48,727	4,613	10.5%
5311	Lessors of Real Estate	17,204	16,644	-560	-3.3%
5312	Offices of Real Estate Agents and Brokers	6,694	6,027	-667	-10.0%
5313	Activities Related to Real Estate	20,216	26,056	5,840	28.9%
532	Rental and Leasing Services	18,520	17,663	-857	-4.6%
5321	Automotive Equipment Rental and Leasing	6,741	6,089	-652	-9.7%
5322	Consumer Goods Rental	6,467	5,809	-658	-10.2%
Professional, Scientific, and Technical Services		257,130	266,681	9,551	3.7%
5411	Legal Services	32,418	28,598	-3,820	-11.8%
5412	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	31,374	30,565	-809	-2.6%
5413	Architectural, Engineering, and Related Services	40,958	43,581	2,623	6.4%
5414	Specialized Design Services	6,812	7,996	1,184	17.4%
5415	Computer Systems Design and Related Services	59,438	59,092	-346	-0.6%
5416	Management, Scientific, and Technical Consulting Services	30,729	38,030	7,301	23.8%
5417	Scientific Research and Development Services	19,650	24,104	4,454	22.7%
5418	Advertising, Public Relations, and Related Services	13,617	13,872	255	1.9%
5419	Other Professional, Scientific, and Technical Services	22,134	20,843	-1,291	-5.8%
Management of Companies and Enterprises		138,338	152,421	14,083	10.2%
Administrative and Support and Waste Management and Remediation Services		327,078	352,871	25,793	7.9%
561	Administrative and Support Services	311,038	335,043	24,005	7.7%
5611	Office Administrative Services	20,056	25,668	5,612	28.0%
5613	Employment Services	142,094	151,128	9,034	6.4%
5614	Business Support Services	35,562	39,464	3,902	11.0%
5616	Investigation and Security Services	23,952	25,878	1,926	8.0%
5617	Services to Buildings and Dwellings	71,742	76,084	4,342	6.1%
5619	Other Support Services	10,626	10,114	-512	-4.8%
562	Waste Management and Remediation Service	16,040	17,828	1,788	11.2%
5621	Waste Collection	5,510	6,896	1,386	25.2%
5629	Remediation and Other Waste Services	5,846	6,967	1,121	19.2%

Appendix Table E – cont'd.
Ohio's Industry Employment Projections Report, 2016-2026

NAICS Code	Industry Title	2016* Annual Employment	2026* Projected Employment	Change in Employment 2016-2026	Percent Change 2016-2026
Educational Services		428,683	453,597	24,914	5.8%
6111	Elementary and Secondary Schools	276,445	287,652	11,207	4.1%
6112	Junior Colleges	19,781	20,639	858	4.3%
6113	Colleges, Universities, and Professional Schools	95,652	101,070	5,418	5.7%
6116	Other Schools and Instruction	10,770	13,406	2,636	24.5%
6117	Educational Support Services	21,228	26,525	5,297	25.0%
Health Care and Social Assistance		820,391	956,022	135,631	16.5%
621	Ambulatory Health Care Services	263,523	327,350	63,827	24.2%
6211	Offices of Physicians	90,330	102,250	11,920	13.2%
6212	Offices of Dentists	31,959	35,690	3,731	11.7%
6213	Offices of Other Health Practitioners	32,179	40,410	8,231	25.6%
6214	Outpatient Care Centers	29,144	33,445	4,301	14.8%
6215	Medical and Diagnostic Laboratories	6,308	7,670	1,362	21.6%
6216	Home Health Care Services	62,447	94,098	31,651	50.7%
6219	Other Ambulatory Health Care Services	11,156	13,787	2,631	23.6%
622	Hospitals	280,332	306,854	26,522	9.5%
6221	General Medical and Surgical Hospitals	267,454	291,370	23,916	8.9%
6222	Psychiatric and Substance Abuse Hospitals	4,851	5,199	348	7.2%
6223	Specialty (except Psychiatric and Substance Abuse) Hospitals	8,027	10,285	2,258	28.1%
623	Nursing and Residential Care Facilities	168,436	181,796	13,360	7.9%
6231	Nursing Care Facilities	96,150	90,385	-5,765	-6.0%
6232	Residential Intellectual & Developmental Disability, Mental Health, and Substance Abuse Facilities	30,574	38,786	8,212	26.9%
6233	Community Care Facilities for the Elderly	36,862	48,380	11,518	31.3%
624	Social Assistance	108,100	140,022	31,922	29.5%
6241	Individual and Family Services	57,970	81,269	23,299	40.2%
6242	Community Food and Housing, and Emergency and Other Relief Services	6,288	6,927	639	10.2%
6243	Vocational Rehabilitation Services	10,986	12,589	1,603	14.6%
6244	Child Day Care Services	32,856	39,237	6,381	19.4%
Arts, Entertainment, and Recreation		78,114	83,031	4,917	6.3%
711	Performing Arts, Spectator Sports, and Related Industries	14,381	14,999	618	4.3%
7113	Promoters of Performing Arts and Sports	5,520	6,318	798	14.5%
712	Museums, Historical Sites, and Similar Institutions	7,512	8,364	852	11.3%
713	Amusement, Gambling, and Recreation Industries	56,221	59,668	3,447	6.1%
7131	Amusement Parks and Arcades	6,122	6,116	-6	-0.1%
7132	Gambling Industries	7,779	8,128	349	4.5%
7139	Other Amusement and Recreation Industries	42,320	45,424	3,104	7.3%
Accommodation and Food Services		473,566	473,383	-183	0.0%
721	Accommodation, including Hotels and Motels	36,960	39,124	2,164	5.9%
7211	Traveler Accommodation	35,037	37,056	2,019	5.8%
722	Food Services and Drinking Places	436,606	434,259	-2,347	-0.5%
7223	Special Food Services	18,447	20,901	2,454	13.3%
7224	Drinking Places (Alcoholic Beverages)	15,036	13,570	-1,466	-9.8%
7225	Restaurants and Other Eating Places	403,123	399,788	-3,335	-0.8%
Other Services (Except Government)		233,824	237,048	3,224	1.4%
811	Repair and Maintenance	46,958	49,302	2,344	5.0%
8111	Automotive Repair and Maintenance	32,434	33,751	1,317	4.1%
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	9,054	10,311	1,257	13.9%
812	Personal and Laundry Services	55,841	61,294	5,453	9.8%
8121	Personal Care Services	27,830	30,946	3,116	11.2%
8122	Death Care Services	6,910	6,953	43	0.6%

Appendix Table E – cont'd.
Ohio's Industry Employment Projections Report, 2016-2026

NAICS Code	Industry Title	2016* Annual Employment	2026* Projected Employment	Change in Employment 2016-2026	Percent Change 2016-2026
8123	Drycleaning and Laundry Services	11,251	11,325	74	0.7%
8129	Other Personal Services	9,850	12,070	2,220	22.5%
813	Religious, Grantmaking, Civic, Professional, and Similar Organizations	111,435	109,921	-1,514	-1.4%
8131	Religious Organizations	67,095	67,246	151	0.2%
8133	Social Advocacy Organizations	4,926	5,172	246	5.0%
8134	Civic and Social Organizations	20,427	19,743	-684	-3.4%
814	Private Households	19,590	16,531	-3,059	-15.6%
Government		351,965	351,282	-683	-0.2%
	Postal Service	22,884	19,378	-3,506	-15.3%
	Federal Government, Excluding Post Office	54,612	59,182	4,570	8.4%
	State Government, Excluding Education and Hospitals	53,265	50,426	-2,839	-5.3%
	Local Government, Excluding Education and Hospitals	221,204	222,296	1,092	0.5%
Self-Employed and Unpaid Family Workers, All Jobs		293,789	313,617	19,828	6.8%

* Industries with 5,000 or more workers.

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, September 2018.

Appendix Table F
Ohio Occupational Employment Projections by Occupational Group, 2016–2026

Occupational Title	Employment		Change in Employment		Annual Openings			
	2016 Annual	2026 Projected	2016 - 2026	Percent	Growth	Exit	Transfers	Total
Total, All Occupations	5,793,823	6,047,156	253,333	4.4%	25,333	274,557	364,606	664,496
Management Occupations	355,489	375,116	19,627	5.5%	1,963	11,764	15,984	29,711
Business & Financial Operations Occupations	282,682	303,006	20,324	7.2%	2,032	8,531	17,201	27,764
Computer & Mathematical Occupations	147,225	157,316	10,091	6.9%	1,009	2,578	7,267	10,854
Architecture & Engineering Occupations	96,728	103,258	6,530	6.8%	653	2,457	4,469	7,579
Life, Physical, & Social Science Occupations	37,253	40,529	3,276	8.8%	328	1,020	2,412	3,760
Community & Social Service Occupations	101,986	114,124	12,138	11.9%	1,214	4,394	7,090	12,698
Legal Occupations	35,984	36,698	714	2.0%	71	896	1,268	2,235
Education, Training, & Library Occupations	315,378	341,135	25,757	8.2%	2,576	13,412	13,365	29,353
Arts, Design, Entertainment, Sports, & Media Occupations	87,126	89,279	2,153	2.5%	215	3,703	4,734	8,652
Healthcare Practitioners & Technical Occupations	371,975	418,231	46,256	12.4%	4,626	10,557	10,163	25,346
Healthcare Support Occupations	204,376	248,724	44,348	21.7%	4,435	12,977	12,257	29,669
Protective Service Occupations	118,191	120,312	2,121	1.8%	212	5,926	6,651	12,789
Food Preparation & Serving Related Occupations	507,785	515,111	7,326	1.4%	733	39,007	48,397	88,137
Building & Grounds Cleaning & Maintenance Occupations	195,352	206,466	11,114	5.7%	1,111	12,160	12,797	26,068
Personal Care & Service Occupations	174,752	198,818	24,066	13.8%	2,407	14,002	13,098	29,507
Sales & Related Occupations	551,916	560,882	8,966	1.6%	897	31,994	42,440	75,331
Office & Administrative Support Occupations	840,532	832,514	-8,018	-1.0%	-802	42,566	49,986	91,750
Farming, Fishing, & Forestry Occupations	13,947	13,534	-413	-3.0%	-41	504	1,523	1,986
Construction & Extraction Occupations	212,889	230,669	17,780	8.4%	1,778	7,781	14,597	24,156
Installation, Maintenance, & Repair Occupations	223,384	232,205	8,821	3.9%	882	7,922	13,320	22,124
Production Occupations	503,651	475,215	-28,436	-5.6%	-2,844	19,361	34,971	51,488
Transportation & Material Moving Occupations	415,222	434,014	18,792	4.5%	1,879	21,046	30,617	53,542

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, September 2018.

Appendix Table G
Ohio's Fastest Growing Occupations*, 2016–2026

Occupational Title	Percent Change	Total Annual Openings	Median Wage** May 17
Home Health Aides (SOC 31-1011)	43.7%	12,020	\$10.33
Personal and Home Care Aides (SOC 39-9021)	36.5%	6,241	\$10.61
Statisticians (SOC 15-2041)	34.4%	85	\$40.31
Physician Assistants (29-1071)	31.0%	294	\$49.40
Nurse Practitioners (29-1171)	29.7%	574	\$47.65
Occupational Therapist Assistants (SOC 31-2011)	27.5%	576	\$28.19
Physical Therapist Assistants (SOC 31-2021)	27.3%	1,005	\$27.63
Massage Therapists (SOC 31-9011)	26.9%	450	\$16.58
Information Security Analysts (SOC 15-1122)	25.8%	292	\$42.62
Respiratory Therapists (SOC 29-1126)	25.0%	504	\$26.49
Operations Research Analysts (SOC 15-2031)	24.4%	346	\$38.74
Actuaries (SOC 15-2011)	22.3%	99	\$45.23
Personal Financial Advisors (SOC 13-2052)	21.7%	780	\$39.12
Mental Health Counselors (SOC 21-1014)	21.6%	700	▲
Physical Therapists (SOC 29-1123)	21.5%	537	\$41.25
Occupational Therapists (SOC 29-1122)	21.1%	367	\$40.13
Health Specialties Teachers, Postsecondary (SOC 25-1071)	20.9%	875	\$84,980 ††
Nursing Instructors and Teachers, Postsecondary (SOC 25-1072)	20.8%	327	\$67,990 ††
Ambulance Drivers & Attendants, Ex. EMT (SOC 53-3011)	20.6%	163	\$10.83
Phlebotomists (SOC 31-9097)	20.5%	722	\$15.56
Residential Advisors (SOC 39-9041)	20.4%	616	\$13.28
Biological Scientists, All Other (SOC 19-1029)	20.3%	100	\$25.96
Medical Assistants (SOC 31-9092)	20.0%	3,146	\$14.72
Diagnostic Medical Sonographers (SOC 29-2032)	19.6%	165	\$30.30
Market Research Analysts and Marketing Specialists (SOC 13-1161)	19.4%	2,766	\$28.87
Physical Therapist Aides (SOC 31-2022)	19.2%	136	\$13.10
Nonfarm Animal Caretakers (SOC 39-2021)	19.0%	1,502	\$9.86
Appraisers and Assessors of Real Estate (SOC 13-2021)	18.4%	198	\$26.76
Preschool Teachers, Except Special Education (SOC 25-2011)	17.9%	1,572	\$11.80
Software Developers, Applications (SOC 15-1132)	17.5%	3,011	\$42.89
Social and Community Service Managers (SOC 11-9151)	17.4%	505	\$32.21
Education Admin., Pre- & Child Care Center/Prog. (SOC 11-9031)	17.3%	258	\$18.60
Athletic Trainers (SOC 29-9091)	17.3%	91	\$46,570 ††
Roustabouts, Oil and Gas (SOC 47-5071)	17.3%	105	\$16.92
Education, Training, and Library Workers, All Other (SOC 25-9099)	17.1%	428	\$19.36

* Occupations with at least 500 employment.

** Wage estimates were based on Ohio's OES surveys.

†† Certain occupations only report wages at the annual level - for elementary and secondary teachers this typically reflects a 9 1/2-month school year.

▲ Wage data unavailable - OES consolidated these occupations in 2017.

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, September 2018.

Appendix Table H
Occupations in Ohio with the Most Annual Openings, 2016–2026

Occupational Title*	Total Annual Openings	Median Wage** May 2017
Comb. Food Prep. & Serv. Work, inc. Fast Food (SOC 35-3021)	31,702	\$9.21
Retail Salespersons (SOC 41-2031)	22,607	\$10.67
Cashiers (SOC 41-2011)	21,723	\$9.31
Waiters and Waitresses (SOC 35-3031)	18,007	\$9.25
Laborers/Freight/Stock/Material Movers, Hand (SOC 53-7062)	16,347	\$12.92
Janitors & Cleaners, ex. Maids/Housekeeping Cleaners (SOC 37-2011)	12,606	\$11.50
Home Health Aides (SOC 31-1011)	12,020	\$10.33
Customer Service Representatives (SOC 43-4051)	11,757	\$15.50
Stock Clerks and Order Fillers (SOC 43-5081)	11,107	\$11.56
Office Clerks, General (SOC 43-9061)	10,498	\$14.88
Registered Nurses (SOC 29-1141)	8,848	\$30.43
Truck Drivers, Heavy and Tractor-Trailer (SOC 53-3032)	8,465	\$20.09
Nursing Assistants (SOC 31-1014)	8,184	\$12.54
Secretaries, Except Legal, Medical, and Executive (SOC 43-6014)	7,758	\$16.62
Bookkeeping, Accounting, and Auditing Clerks (SOC 43-3031)	6,928	\$18.13
Packers and Packagers, Hand (SOC 53-7064)	6,546	\$10.98
Child Care Workers (SOC 39-9011)	6,386	\$9.86
Personal and Home Care Aides (SOC 39-9021)	6,241	\$10.61
Landscaping and Groundskeeping Workers (SOC 37-3011)	5,908	\$12.67
Maintenance and Repair Workers, General (SOC 49-9071)	5,895	\$18.87
Farmers, Ranchers, and Other Agricultural Managers (SOC 11-9013)	5,852	\$35.11
First-Line Sup/Mgrs of Retail Sales Workers (SOC 41-1011)	5,793	\$17.60
General and Operations Managers (SOC 11-1012)	5,791	\$44.77
Maids and Housekeeping Cleaners (SOC 37-2012)	5,413	\$10.13
Cooks, Restaurant (SOC 35-2014)	5,359	\$11.40
Medical Secretaries (SOC 43-6013)	5,278	\$15.52
Construction Laborers (SOC 47-2061)	5,142	\$18.75
Sales Rep., Wholesale/Mfg, ex. Tech./Sci. Prod. (SOC 41-4012)	5,121	\$27.59
FL Sup/Mgrs of Food Prep. & Serving Workers (SOC 35-1012)	5,036	\$14.93
First-Line Sup/Mgrs of Office & Admin. Support (SOC 43-1011)	4,529	\$25.52
Accountants and Auditors (SOC 13-2011)	4,493	\$31.02

* Certain Occupations are abbreviated.

Abbreviations:

AO = All Other
 FL Sup/Mgrs = First-Line Supervisors/Managers
 M/P = Metal and Plastic
 PS = Postsecondary
 O/T = Operators and Tenders
 S/O/T = Setters, Operators and Tenders

** Wage estimates were based on Ohio's OES surveys.

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, September 2018.

Appendix Table I
Ohio Occupations with at least 1,000 Self-Employed, 2016–2026

Occupational Title	2016 Employment	Self-Employed	Percent Self- Employed
Managers, All Other (SOC 11-9199)	24,170	13,717	56.8%
Hairdressers, Hairstylists, and Cosmetologists (SOC 39-5012)	30,193	12,940	42.9%
First-Line Sup/Mgrs of Retail Sales Workers (SOC 41-1011)	53,622	12,204	22.8%
Child Care Workers (SOC 39-9011)	41,155	11,853	28.8%
Construction Laborers (SOC 47-2061)	45,157	11,314	25.1%
Landscaping and Groundskeeping Workers (SOC 37-3011)	45,531	9,962	21.9%
Carpenters (SOC 47-2031)	28,110	9,326	33.2%
Real Estate Sales Agents (SOC 41-9022)	15,323	8,556	55.8%
Truck Drivers, Heavy and Tractor-Trailer (SOC 53-3032)	76,084	6,044	7.9%
Construction Managers (SOC 11-9021)	15,213	5,755	37.8%
Retail Salespersons (SOC 41-2031)	159,133	5,024	3.2%
Maids and Housekeeping Cleaners (SOC 37-2012)	40,548	4,980	12.3%
First-Line Sup/Mgrs of Non-Retail Sales Workers (SOC 41-1012)	13,195	4,857	36.8%
Door-To-Door Sales, News/St. Vendors, & Rel. (SOC 41-9091)	5,168	4,665	90.3%
Taxi Drivers and Chauffeurs (SOC 53-3041)	11,650	4,226	36.3%
Lawyers (SOC 23-1011)	20,148	4,112	20.4%
Painters, Construction and Maintenance (SOC 47-2141)	9,405	3,979	42.3%
Food Service Managers (SOC 11-9051)	11,493	3,909	34.0%
Photographers (SOC 27-4021)	5,724	3,903	68.2%
Insurance Sales Agents (SOC 41-3021)	21,025	3,864	18.4%
Management Analysts (SOC 13-1111)	21,549	3,748	17.4%
Property, Real Estate & Community Assn Mgrs (SOC 11-9141)	8,940	3,724	41.7%
Automotive Service Technicians and Mechanics (SOC 49-3023)	28,328	3,722	13.1%
Janitors & Cleaners, ex. Maids/Housekeeping Cleaners (SOC 37-2011)	91,100	3,470	3.8%
Accountants and Auditors (SOC 13-2011)	47,433	3,178	6.7%
Truck Drivers, Light or Delivery Services (SOC 53-3033)	37,947	2,986	7.9%
Writers and Authors (SOC 27-3043)	4,185	2,673	63.9%
FL Sup/Mgrs of Landscape/Lawn Ser/Groundskeeping (SOC 37-1012)	6,423	2,595	40.4%
Bookkeeping, Accounting, and Auditing Clerks (SOC 43-3031)	66,288	2,494	3.8%
Musicians and Singers (SOC 27-2042)	6,488	2,290	35.3%
First-Line Sup/Mgrs of Personal Serv. Workers (SOC 39-1021)	8,226	2,156	26.2%
Self-Enrichment Education Teachers (SOC 25-3021)	10,462	2,066	19.7%
FL Sup/Mgrs of Housekeeping & Janitorial Workers (SOC 37-1011)	6,901	2,021	29.3%
Plumbers, Pipefitters, and Steamfitters (SOC 47-2152)	16,071	2,020	12.6%
Electricians (SOC 47-2111)	24,524	1,990	8.1%
Driver/Sales Workers (SOC 53-3031)	24,089	1,944	8.1%
Sales Rep., Wholesale/Mfg, ex. Tech./Sci. Prod. (SOC 41-4012)	50,220	1,922	3.8%
Personal Financial Advisors (SOC 13-2052)	7,554	1,836	24.3%
Art Directors (SOC 27-1011)	2,889	1,716	59.4%
First-Line Sup/Mgrs of Con. Trades/Extract. Work (SOC 47-1011)	16,026	1,630	10.2%
Chief Executives (SOC 11-1011)	7,038	1,606	22.8%
Graphic Designers (SOC 27-1024)	8,738	1,594	18.2%
Substitute Teachers (SOC 25-3098)	19,045	1,539	8.1%
Nonfarm Animal Caretakers (SOC 39-2021)	8,242	1,510	18.3%
Nursing Assistants (SOC 31-1014)	68,537	1,364	2.0%
Home Health Aides (SOC 31-1011)	67,055	1,341	2.0%
Massage Therapists (SOC 31-9011)	3,175	1,250	39.4%
Brickmasons and Blockmasons (SOC 47-2021)	4,062	1,210	29.8%
Roofers (SOC 47-2181)	5,757	1,204	20.9%
Laborers/Freight/Stock/Material Movers, Hand (SOC 53-7062)	111,616	1,160	1.0%
Merchandise Displayers and Window Trimmers (SOC 27-1026)	5,903	1,144	19.4%
Personal and Home Care Aides (SOC 39-9021)	30,913	1,117	3.6%
Heating, AC, & Refrigeration Mechanics/Installers (SOC 49-9021)	11,788	1,071	9.1%
Coaches and Scouts (SOC 27-2022)	10,608	1,066	10.0%
Fine Artists, inc. Painters, Sculptors & Illustrators (SOC 27-1013)	1,784	1,045	58.6%
Refuse and Recyclable Material Collectors (SOC 53-7081)	7,230	1,018	14.1%
Recreation Workers (SOC 39-9032)	14,532	1,010	7.0%

The all-occupation average of self-employed individuals was 6.7 percent.

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, September 2018.

Appendix Table J
Ohio Occupational Employment* Projections Report, 2016–2026

Code	Occupational Title**	Employment		Change in Employment		Annual Openings				Median Wage*** May 2017
		2016 Annual	2026 Projected	2016-2026	Percent	Growth	Exit	Transfers	Total	
00-0000	Total, All Occupations	5,793,823	6,047,156	253,333	4.4%	25,333	274,557	364,606	664,496	\$17.55
11-0000	Management Occupations	355,489	375,116	19,627	5.5%	1,963	11,764	15,984	29,711	\$45.76
11-1011	Chief Executives	7,038	6,537	-501	-7.1%	-50	196	278	424	\$91.62
11-1021	General and Operations Managers	65,768	69,370	3,602	5.5%	360	1,401	4,030	5,791	\$44.77
11-1031	Legislators	3,433	3,524	91	2.7%	9	94	146	249	\$19,190 ††
11-2011	Advertising and Promotions Managers	486	504	18	3.7%	2	13	37	52	\$39.96
11-2021	Marketing Managers	5,631	6,069	438	7.8%	44	133	355	532	\$57.03
11-2022	Sales Managers	11,958	12,475	517	4.3%	52	278	742	1,072	\$56.88
11-2031	Public Relations Managers	1,841	2,003	162	8.8%	16	42	110	168	\$48.33
11-3011	Administrative Services Managers	9,938	10,657	719	7.2%	72	308	504	884	\$40.52
11-3021	Computer and Information Systems Managers	13,506	14,126	620	4.6%	62	243	753	1,058	\$59.26
11-3031	Financial Managers	21,513	25,128	3,615	16.8%	362	536	1,154	2,052	\$55.81
11-3051	Industrial Production Managers	10,949	10,818	-131	-1.2%	-13	254	497	738	\$46.23
11-3061	Purchasing Managers	2,520	2,682	162	6.4%	16	76	128	220	\$54.81
11-3071	Transportation, Storage, and Distribution Managers	5,398	5,804	406	7.5%	41	128	291	460	\$41.85
11-3111	Compensation and Benefits Managers	572	593	21	3.7%	2	13	28	43	\$53.53
11-3121	Human Resources Managers	4,314	4,664	350	8.1%	35	111	241	387	\$50.18
11-3131	Training and Development Managers	795	855	60	7.5%	6	23	49	78	\$47.66
11-9013	Farmers, Ranchers, and Other Agricultural Managers	80,348	80,065	-283	-0.4%	-28	4,689	1,191	5,852	\$35.11
11-9021	Construction Managers	15,213	16,552	1,339	8.8%	134	364	706	1,204	\$43.66
11-9031	Education Admin., Pre & Child Care Center/Prog.	2,648	3,107	459	17.3%	46	81	131	258	\$18.60
11-9032	Education Admin., Elem. & Secondary School	9,451	10,077	626	6.6%	63	274	444	781	\$86,230 ††
11-9033	Education Administrators, Postsecondary	4,780	5,055	275	5.8%	28	138	224	390	\$44.19
11-9039	Education Administrators, All Other	1,011	1,148	137	13.6%	14	30	49	93	\$37.76
11-9041	Engineering Managers	6,586	6,983	397	6.0%	40	137	326	503	\$60.84
11-9051	Food Service Managers	11,493	11,851	358	3.1%	36	369	861	1,266	\$23.28
11-9061	Funeral service Managers	1,316	1,387	71	5.4%	7	37	57	101	\$39.07
11-9081	Lodging Managers	1,225	1,292	67	5.5%	7	43	81	131	\$19.49
11-9111	Medical and Health Services Managers	16,073	18,607	2,534	15.8%	253	471	846	1,570	\$43.67
11-9121	Natural Sciences Managers	1,143	1,303	160	14.0%	16	28	69	113	\$58.40
11-9131	Postmasters and Mail Superintendents	489	377	-112	-22.9%	-11	12	18	19	\$36.53
11-9141	Property, Real Estate & Community Assn Mgrs	8,940	9,876	936	10.5%	94	390	315	799	\$24.32
11-9151	Social and Community Service Managers	4,594	5,393	799	17.4%	80	164	261	505	\$32.21
11-9161	Emergency Management Directors	310	334	24	7.7%	2	12	12	26	\$30.82
11-9199	Managers, All Other	24,170	25,859	1,689	7.0%	169	677	1,050	1,896	\$47.61
13-0000	Business & Financial Operations Occupations	282,682	303,006	20,324	7.2%	2,032	8,531	17,201	27,764	\$30.20
13-1011	Agents/Business Mgrs. Artist/Performer/Athlete	116	151	35	30.2%	4	6	10	20	\$21.33
13-1021	Purchasing Agents and Buyers, Farm Products	337	312	-25	-7.4%	-2	15	22	35	▲
13-1022	Wholesale and Retail Buyers, Except Farm Products	4,895	4,737	-158	-3.2%	-16	190	348	522	▲
13-1023	Purchasing Agents, ex. Whole., Retail, & Farm	13,186	12,433	-753	-5.7%	-75	380	708	1,013	▲
13-1031	Claims Adjusters, Examiners, and Investigators	11,383	11,113	-270	-2.4%	-27	282	626	881	\$31.10
13-1032	Insurance Appraisers, Auto Damage	715	712	-3	-0.4%	0	18	40	58	\$28.69
13-1041	Compl. Off., ex. Agric, Con, Hlth/Safety, & Trans.	7,270	7,808	538	7.4%	54	211	380	645	\$28.46
13-1051	Cost Estimators	11,135	12,061	926	8.3%	93	365	753	1,211	\$28.53
13-1071	Human Resource Specialists	19,963	21,236	1,273	6.4%	127	598	1,354	2,079	\$27.14

Appendix Table J – cont'd.
Ohio Occupational Employment* Projections Report, 2016-2026

Code	Occupational Title**	Employment		Change in Employment		Growth	Annual Openings			Median Wage*** May 2017
		2016 Annual	2026 Projected	2016-2026	Percent		Exit	Transfers	Total	
13-1075	Labor Relations Specialists	6,761	5,741	-1,020	-15.1%	-102	182	411	491	\$9.51
13-1081	Logisticians	5,946	6,277	331	5.6%	33	150	431	614	\$35.46
13-1111	Management Analysts	21,549	24,461	2,912	13.5%	291	739	1,189	2,219	\$35.71
13-1121	Meeting and Convention Planners	2,654	2,817	163	6.1%	16	103	205	324	\$21.25
13-1131	Fundraisers	4,797	5,188	391	8.2%	39	155	327	521	\$24.74
13-1141	Compensation, Benefits, and Job Analysis Specialists	3,152	3,603	451	14.3%	45	86	183	314	\$27.83
13-1151	Training and Development Specialists	9,314	10,140	826	8.9%	83	299	625	1,007	\$26.47
13-1161	Market Research Analysts and Marketing Specialists	22,330	26,671	4,341	19.4%	434	650	1,682	2,766	\$28.87
13-1199	Business Operations Specialists, All Other	34,128	36,632	2,504	7.3%	250	1,110	2,041	3,401	\$31.24
13-2011	Accountants and Auditors	47,433	49,962	2,529	5.3%	253	1,438	2,802	4,493	\$31.02
13-2021	Appraisers and Assessors of Real Estate	2,251	2,665	414	18.4%	41	86	71	198	\$26.76
13-2041	Credit Analysts	2,819	3,104	285	10.1%	28	68	170	266	\$32.39
13-2051	Financial Analysts	9,189	10,273	1,084	11.8%	108	194	612	914	\$34.98
13-2052	Personal Financial Advisors	7,554	9,192	1,638	21.7%	164	206	410	780	\$39.12
13-2053	Insurance Underwriters	5,789	5,193	-596	-10.3%	-60	141	294	375	\$33.60
13-2061	Financial Examiners	3,442	3,898	456	13.2%	46	103	168	317	\$32.70
13-2072	Loan Officers	12,385	13,618	1,233	10.0%	123	314	721	1,158	\$31.50
13-2081	Tax Examiners, Collectors, and Revenue Agents	1,672	1,678	6	0.4%	1	50	65	116	\$28.94
13-2082	Tax Preparers	2,797	2,849	52	1.9%	5	153	140	298	\$17.03
13-2099	Financial Specialists, All Other	5,789	6,429	640	11.1%	64	188	315	567	\$35.22
15-0000	Computer & Mathematical Occupations	147,225	157,316	10,091	6.9%	1,009	2,578	7,267	10,854	\$36.89
15-1111	Computer & Information Research Scientists	173	190	17	9.8%	2	3	9	14	\$50.96
15-1121	Computer Systems Analysts	28,795	29,211	416	1.4%	42	530	1,295	1,867	\$40.67
15-1122	Information Security Analysts	2,890	3,637	747	25.8%	75	58	159	292	\$42.62
15-1131	Computer Programmers	5,847	4,919	-928	-15.9%	-93	94	240	241	\$33.21
15-1132	Software Developers, Applications	35,099	41,253	6,154	17.5%	615	522	1,874	3,011	\$42.89
15-1133	Software Developers, Systems Software	5,839	5,931	92	1.6%	9	80	289	378	\$45.64
15-1134	Web Developers	3,803	4,034	231	6.1%	23	73	198	294	\$27.30
15-1141	Database Administrators	4,361	4,646	285	6.5%	28	94	187	309	\$40.03
15-1142	Network and Comp. Systems Architects and Admins	14,012	14,056	44	0.3%	4	197	660	861	\$35.21
15-1143	Computer Network Architects	5,501	5,433	-68	-1.2%	-7	77	269	339	\$45.80
15-1151	Computer User Support Specialists	18,737	19,441	704	3.8%	70	388	982	1,440	\$21.68
15-1152	Computer Network Support Specialists	9,960	10,413	453	4.5%	45	207	524	776	\$27.76
15-1199	Computer Occupations, All Other	6,435	6,930	495	7.7%	50	129	310	489	\$38.15
15-2011	Actuaries	1,114	1,362	248	22.3%	25	16	58	99	\$45.23
15-2031	Operations Research Analysts	3,852	4,791	939	24.4%	94	89	163	346	\$38.74
15-2041	Statisticians	710	954	244	34.4%	24	18	43	85	\$40.31
17-0000	Architecture & Engineering Occupations	96,728	103,258	6,530	6.8%	653	2,457	4,469	7,579	\$35.60
17-1011	Architects, Except Landscape and Naval	3,533	3,611	78	2.2%	8	90	159	257	\$34.68
17-1012	Landscape Architects	933	978	45	4.8%	4	24	43	71	\$28.36
17-1022	Surveyors	1,065	1,152	87	8.2%	9	32	45	86	\$28.08
17-2011	Aerospace Engineers	4,973	5,272	299	6.0%	30	116	184	330	\$54.95
17-2031	Biomedical Engineers	680	738	58	8.5%	6	16	31	53	\$35.20
17-2041	Chemical Engineers	1,448	1,540	92	6.4%	9	32	61	102	\$44.13
17-2051	Civil Engineers	8,049	8,655	606	7.5%	61	181	411	653	\$37.75

Appendix Table J – cont'd.
Ohio Occupational Employment* Projections Report, 2016-2026

Code	Occupational Title**	Employment		Change in Employment		Growth	Annual Openings			Median Wage*** May 2017
		2016 Annual	2026 Projected	2016-2026	Percent		Exit	Transfers	Total	
17-2061	Computer Hardware Engineers	1,074	1,118	44	4.1%	4	21	46	71	\$47.68
17-2071	Electrical Engineers	6,258	6,665	407	6.5%	41	146	259	446	\$39.73
17-2072	Electronics Engineers, Except Computer	3,774	3,947	173	4.6%	17	87	154	258	\$45.17
17-2081	Environmental Engineers	1,218	1,278	60	4.9%	6	29	51	86	\$44.47
17-2111	Health & Safety Engineers, ex. Mining Safety	533	556	23	4.3%	2	12	22	36	\$42.33
17-2112	Industrial Engineers	14,744	16,005	1,261	8.6%	126	350	626	1,102	\$38.24
17-2131	Materials Engineers	1,593	1,661	68	4.3%	7	51	62	120	\$42.56
17-2141	Mechanical Engineers	14,985	16,798	1,813	12.1%	181	323	661	1,165	\$36.71
17-2151	Mining & Geological Engineers, Inc Mining Safety Eng.	114	124	10	8.8%	1	2	6	9	\$38.17
17-2171	Petroleum Engineers	377	387	10	2.7%	1	7	18	26	\$38.94
17-2199	Engineers, All Other	7,380	7,827	447	6.1%	45	175	307	527	\$41.94
17-3011	Architectural and Civil Drafters	2,812	2,971	159	5.7%	16	85	156	257	\$24.09
17-3012	Electrical and Electronics Drafters	763	801	38	5.0%	4	23	42	69	\$25.44
17-3013	Mechanical Drafters	2,463	2,531	68	2.8%	7	74	135	216	\$25.44
17-3019	Drafters, All Other	1,217	1,266	49	4.0%	5	37	67	109	\$24.29
17-3021	Aerospace Engineering and Operations Technicians	424	430	6	1.4%	1	14	22	37	\$33.59
17-3022	Civil Engineering Technicians	1,987	2,126	139	7.0%	14	66	108	188	\$26.32
17-3023	Electrical and Electronic Engineering Technicians	2,453	2,423	-30	-1.2%	-3	78	128	203	\$28.50
17-3024	Electro-Mechanical Technicians	419	422	3	0.7%	0	13	22	35	\$25.19
17-3025	Environmental Engineering Technicians	324	337	13	4.0%	1	11	17	29	\$23.07
17-3026	Industrial Engineering Technicians	3,216	3,235	19	0.6%	2	103	170	275	\$25.94
17-3027	Mechanical Engineering Technicians	2,302	2,467	165	7.2%	16	76	126	218	\$26.22
17-3029	Engineering Technicians, Except Drafters, All Other	3,278	3,535	257	7.8%	26	109	179	314	\$27.18
17-3031	Surveying and Mapping Technicians	1,507	1,606	99	6.6%	10	52	111	173	\$20.02
19-0000	Life, Physical, & Social Science Occupations	37,253	40,529	3,276	8.8%	328	1,020	2,412	3,760	\$28.91
19-1012	Food Scientists and Technologists	840	930	90	10.7%	9	24	64	97	\$31.24
19-1013	Soil and Plant Scientists	213	221	8	3.8%	1	6	16	23	\$22.58
19-1022	Microbiologists	552	583	31	5.6%	3	12	36	51	\$29.27
19-1023	Zoologists and Wildlife Biologists	164	173	9	5.5%	1	3	11	15	\$32.66
19-1029	Biological Scientists, All Other	880	1,059	179	20.3%	0	20	62	100	\$25.96
19-1031	Conservation Scientists	392	414	22	5.6%	2	8	25	35	\$24.46
19-1032	Foresters	180	180	0	0.0%	0	4	11	15	\$28.72
19-1041	Epidemiologists	197	208	11	5.6%	1	4	13	18	\$30.20
19-1042	Medical Scientists, Except Epidemiologists	4,306	4,821	515	12.0%	52	84	290	426	\$36.17
19-2012	Physicists	513	593	80	15.6%	8	11	31	50	\$54.37
19-2031	Chemists	4,121	4,325	204	5.0%	20	106	264	390	\$33.50
19-2032	Materials Scientists	641	713	72	11.2%	7	17	42	66	\$41.70
19-2041	Environmental Scientists/Specialists, inc. Health	3,230	3,498	268	8.3%	27	73	231	331	\$32.25
19-2042	Geoscientists, Except Hydrologists and Geographers	360	391	31	8.6%	3	8	26	37	\$32.60
19-2043	Hydrologists	266	277	11	4.1%	1	6	19	26	\$37.69
19-2099	Physical Scientists, All Other	446	489	43	9.6%	4	8	27	39	\$48.58
19-3011	Economists	122	120	-2	-1.6%	0	2	7	9	\$48.16
19-3022	Survey Researchers	158	154	-4	-2.5%	0	4	10	14	\$25.03
19-3031	Clinical, Counseling, and School Psychologists	4,029	4,572	543	13.5%	54	108	164	326	\$33.43
19-3039	Psychologists, All Other	458	504	46	10.0%	5	12	18	35	\$46.87

Appendix Table J – cont'd.
Ohio Occupational Employment* Projections Report, 2016-2026

Code	Occupational Title**	Employment		Change in Employment		Growth	Annual Openings			Median Wage*** May 2017
		2016 Annual	2026 Projected	2016-2026	Percent		Exit	Transfers	Total	
19-3051	Urban and Regional Planners	574	619	45	7.8%	4	12	36	52	\$30.60
19-3091	Anthropologists and Archeologists	119	119	0	0.0%	0	3	7	10	\$28.45
19-3099	Social Scientists and Related Workers, All Other	1,812	1,966	154	8.5%	15	54	116	185	\$34.73
19-4011	Agricultural and Food Science Technicians	515	554	39	7.6%	4	15	38	57	\$17.68
19-4021	Biological Technicians	2,868	3,146	278	9.7%	28	77	205	310	\$19.88
19-4031	Chemical Technicians	3,822	3,992	170	4.4%	17	129	230	376	\$21.32
19-4061	Social Science Research Assistants	324	346	22	6.8%	2	13	25	40	\$18.77
19-4091	Environ. Science & Protection Tech., inc. Health	1,562	1,711	149	9.5%	15	66	122	203	\$20.26
19-4092	Forensic Science Technicians	377	418	41	10.9%	4	16	30	50	\$30.34
19-4093	Forest and Conservation Technicians	247	255	8	3.2%	1	10	19	30	\$20.10
19-4099	Life, Physical, & Social Science Tech., All Other	1,603	1,763	160	10.0%	16	67	125	208	\$24.06
21-0000	Community & Social Service Occupations	101,986	114,124	12,138	11.9%	1,214	4,394	7,090	12,698	\$20.52
21-1011	Substance Abuse & Behavioral Dis. Counselors	3,109	3,615	506	16.3%	51	124	220	395	▲
21-1012	Educational, Vocational, and School Counselors	9,481	10,511	1,030	10.9%	103	368	654	1,125	\$26.02
21-1013	Marriage and Family Therapists	495	601	106	21.4%	11	20	36	67	\$23.44
21-1014	Mental Health Counselors	5,196	6,318	1,122	21.6%	112	212	376	700	▲
21-1015	Rehabilitation Counselors	4,878	5,669	791	16.2%	79	194	345	618	\$16.74
21-1019	Counselors, All Other	1,509	1,723	214	14.2%	21	59	106	186	\$21.23
21-1021	Child, Family, and School Social Workers	9,767	11,439	1,672	17.1%	167	381	674	1,222	\$19.28
21-1022	Medical and Public Health Social Workers	9,503	11,030	1,527	16.1%	153	369	652	1,174	\$26.65
21-1023	Mental Health and Substance Abuse Social Workers	5,185	6,020	835	16.1%	84	201	356	641	\$18.45
21-1029	Social Workers, All Other	3,283	3,696	413	12.6%	4	125	222	388	\$21.75
21-1091	Health Educators	1,888	2,113	225	11.9%	22	90	148	260	\$26.80
21-1092	Probation Officers & Correct. Treatment Spec.	2,952	3,014	62	2.1%	6	90	157	253	\$23.28
21-1093	Social and Human Service Assistants	16,289	18,438	2,149	13.2%	215	776	1,242	2,233	\$15.10
21-1094	Community Health Workers	1,554	1,773	219	14.1%	22	75	123	220	\$17.94
21-1099	Community and Social Service Specialists, All Other	3,081	3,377	296	9.6%	30	146	240	416	\$19.30
21-2011	Clergy	19,121	19,888	767	4.0%	77	894	1,197	2,168	\$20.99
21-2021	Directors, Religious Activities and Education	2,043	2,124	81	4.0%	8	92	158	258	\$19.50
21-2099	Religious Workers, All Other	2,652	2,775	123	4.6%	12	176	184	372	\$12.42
23-0000	Legal Occupations	35,984	36,698	714	2.0%	71	896	1,268	2,235	\$31.56
23-1011	Lawyers	20,148	20,365	217	1.1%	22	402	438	862	\$45.66
23-1012	Judicial Law Clerks	355	363	8	2.3%	1	5	12	18	\$21.61
23-1021	Admin. Law Judges & Adjudicators & Hearing Officers	466	480	14	3.0%	1	9	10	20	\$45.31
23-1022	Arbitrators, Mediators, and Conciliators	148	153	5	3.4%	0	3	3	6	\$30.92
23-1023	Judges, Magistrate Judges, and Magistrates	2,460	2,488	28	1.1%	3	49	54	106	\$31.86
23-2011	Paralegals and Legal Assistants	8,088	8,542	454	5.6%	45	274	553	872	\$21.24
23-2091	Court Reporters	472	483	11	2.3%	1	17	22	40	\$22.47
23-2093	Title Examiners, Abstractors, and Searchers	2,738	2,652	-86	-3.1%	-9	95	123	209	\$22.13
23-2099	Legal Support Workers, All Other	1,109	1,172	63	5.7%	6	40	52	98	\$24.79
25-0000	Education, Training, & Library Occupations	315,378	341,135	25,757	8.2%	2,576	13,412	13,365	29,353	\$24.48
25-1011	Business Teachers, Postsecondary	4,338	4,942	604	13.9%	60	170	177	407	\$82,030 ††
25-1021	Computer Science Teachers, Postsecondary	1,219	1,279	60	4.9%	6	46	48	100	\$92,660 ††
25-1022	Mathematical Science Teachers, Postsecondary	1,863	1,970	107	5.7%	11	70	73	154	\$76,310 ††
25-1031	Architecture Teachers, Postsecondary	439	464	25	5.7%	2	16	17	35	\$76,160 ††

Appendix Table J – cont'd.
Ohio Occupational Employment* Projections Report, 2016-2026

Code	Occupational Title**	Employment		Change in Employment		Growth	Annual Openings			Median Wage*** May 2017
		2016 Annual	2026 Projected	2016-2026	Percent		Exit	Transfers	Total	
25-1032	Engineering Teachers, Postsecondary	1,202	1,318	116	9.7%	12	46	48	106	\$97,300 ††
25-1042	Biological Science Teachers, Postsecondary	1,623	1,798	175	10.8%	18	63	65	146	\$81,590 ††
25-1051	Atmos., Earth, Marine & Space Sci. Teachers, PS	271	285	14	5.2%	1	10	11	22	\$92,970 ††
25-1052	Chemistry Teachers, Postsecondary	732	772	40	5.5%	4	28	29	61	\$84,960 ††
25-1053	Environmental Science Teachers, Postsecondary	148	154	6	4.1%	1	6	6	13	\$82,520 ††
25-1054	Physics Teachers, Postsecondary	513	540	27	5.3%	3	19	20	42	\$96,020 ††
25-1061	Anthropology & Archeology Teachers, Postsecondary	207	219	12	5.8%	1	8	8	17	\$81,390 ††
25-1062	Area/Ethnic/Cultural Studies Teachers, Postsecondary	422	446	24	5.7%	2	16	17	35	\$71,130 ††
25-1063	Economics Teachers, Postsecondary	393	416	23	5.9%	2	15	15	32	\$96,860 ††
25-1064	Geography Teachers, Postsecondary	199	206	7	3.5%	1	7	8	16	\$88,130 ††
25-1065	Political Science Teachers, Postsecondary	502	531	29	5.8%	3	19	20	42	\$82,180 ††
25-1066	Psychology Teachers, Postsecondary	1,148	1,271	123	10.7%	12	44	46	102	\$70,490 ††
25-1067	Sociology Teachers, Postsecondary	571	602	31	5.4%	3	22	22	47	\$77,720 ††
25-1069	Social Sciences Teachers, Postsecondary, All Other	338	363	25	7.4%	2	13	13	28	\$74,420 ††
25-1071	Health Specialties Teachers, Postsecondary	8,460	10,231	1,771	20.9%	177	342	356	875	\$84,980 ††
25-1072	Nursing Instructors and Teachers, Postsecondary	3,157	3,813	656	20.8%	66	128	133	327	\$67,990 ††
25-1081	Education Teachers, Postsecondary	2,976	3,144	168	5.6%	17	112	117	246	\$61,490 ††
25-1082	Library Science Teachers, Postsecondary	319	331	12	3.8%	1	12	12	25	\$64,310 ††
25-1111	Criminal Justice/Law Enforcement Teachers, PS	468	513	45	9.6%	4	18	19	41	\$61,350 ††
25-1112	Law Teachers, Postsecondary	639	683	44	6.9%	4	24	25	53	\$103,310 ††
25-1113	Social Work Teachers, Postsecondary	535	564	29	5.4%	3	20	21	44	\$62,170 ††
25-1121	Art, Drama, and Music Teachers, Postsecondary	4,259	4,588	329	7.7%	33	162	169	364	\$65,330 ††
25-1122	Communications Teachers, Postsecondary	1,268	1,349	81	6.4%	8	48	50	106	\$59,480 ††
25-1123	English Language/Literature Teachers, Postsecondary	2,687	2,844	157	5.8%	16	101	106	223	\$64,320 ††
25-1124	Foreign Language/Literature Teachers, Postsecondary	1,189	1,261	72	6.1%	7	45	47	99	\$62,140 ††
25-1125	History Teachers, Postsecondary	784	829	45	5.7%	4	30	31	65	\$74,100 ††
25-1126	Philosophy and Religion Teachers, Postsecondary	814	878	64	7.9%	6	31	32	69	\$63,670 ††
25-1191	Graduate Teaching Assistants	1,572	1,653	81	5.2%	8	59	62	129	\$47,030 ††
25-1194	Vocational Education Teachers, Postsecondary	3,935	3,990	55	1.4%	6	145	151	302	\$27.41
25-2011	Preschool Teachers, Except Special Education	12,788	15,071	2,283	17.9%	228	600	744	1,572	\$11.80
25-2012	Kindergarten Teachers, Except Special Education	5,940	6,289	349	5.9%	35	263	327	625	\$54,640 ††
25-2021	Elementary School Teachers, ex. Special Ed.	45,363	47,844	2,481	5.5%	248	1,538	1,725	3,511	\$59,560 ††
25-2022	Middle School Teachers, ex. Special & Voc. Ed.	30,085	31,759	1,674	5.6%	167	1,020	1,145	2,332	\$59,810 ††
25-2023	Vocational Education Teachers, Middle School	276	291	15	5.4%	2	9	10	21	\$68,630 ††
25-2031	Secondary Sch. Teachers, ex. Spec. & Voc. Ed.	50,776	53,714	2,938	5.8%	294	1,600	1,949	3,843	\$59,990 ††
25-2032	Career/Technical Education Teachers, Secondary School	5,748	6,012	264	4.6%	26	180	219	425	\$62,750 ††
25-2051	Special Education Teachers, Preschool	917	1,010	93	10.1%	9	32	35	76	\$55,700 ††
25-2052	Special Education Teachers, Kindergarten/Elementary	7,682	8,154	472	6.1%	47	263	289	599	\$56,030 ††
25-2053	Special Education Teachers, Middle School	4,442	4,706	264	5.9%	26	152	167	345	\$59,530 ††
25-2054	Special Education Teachers, Secondary School	6,598	7,058	460	7.0%	46	227	249	522	\$56,730 ††
25-2059	Special Education Teachers, All Other	669	744	75	11.2%	8	24	26	58	\$36,780 ††
25-3011	Adult Literacy, Remedial Ed., & GED Teachers	2,172	1,998	-174	-8.0%	-17	127	98	208	\$23.82
25-3021	Self-Enrichment Education Teachers	10,462	12,045	1,583	15.1%	158	686	527	1,371	\$16.43
25-3097	Teachers and Instructors, All Other except Substitute Teachers	5,819	6,554	735	12.6%	74	377	290	741	\$38,040 ††
25-3098	Substitute Teachers	19,045	21,355	2,310	12.1%	231	1,231	945	2,407	\$13.05

Appendix Table J – cont'd.
Ohio Occupational Employment* Projections Report, 2016-2026

Code	Occupational Title**	Employment		Change in Employment		Growth	Annual Openings			Median Wage*** May 2017
		2016 Annual	2026 Projected	2016-2026	Percent		Exit	Transfers	Total	
25-4011	Archivists	121	132	11	9.1%	1	5	7	13	\$19.24
25-4012	Curators	507	559	52	10.3%	5	22	31	58	\$23.21
25-4013	Museum Technicians and Conservators	382	426	44	11.5%	4	17	23	44	\$16.91
25-4021	Librarians	3,791	3,926	135	3.6%	14	211	144	369	\$26.12
25-4031	Library Technicians	3,975	4,107	132	3.3%	13	318	207	538	\$14.31
25-9031	Instructional Coordinators	2,928	3,213	285	9.7%	28	146	126	300	\$29.38
25-9041	Teacher Assistants	34,956	38,166	3,210	9.2%	321	2,007	1,668	3,996	\$25,520 ††
25-9099	Education, Training, and Library Workers, All Other	3,773	4,420	647	17.1%	65	195	168	428	\$19.36
27-0000	Arts, Design, Entertainment, Sports, & Media Occupations	87,126	89,279	2,153	2.5%	215	3,703	4,734	8,652	\$18.97
27-1011	Art Directors	2,889	3,014	125	4.3%	12	144	86	242	\$38.80
27-1012	Craft Artists	508	516	8	1.6%	1	25	15	41	\$13.02
27-1013	Fine Artists, inc. Painters, Sculptors & Illustrators	1,784	1,918	134	7.5%	13	90	54	157	\$16.16
27-1014	Multi-Media Artists and Animators	1,007	1,049	42	4.2%	4	50	30	84	\$25.50
27-1021	Commercial and Industrial Designers	1,490	1,576	86	5.8%	9	54	86	149	\$28.63
27-1023	Floral Designers	2,100	1,868	-232	-11.0%	-23	70	112	159	\$11.50
27-1024	Graphic Designers	8,738	8,995	257	2.9%	26	313	498	837	\$21.51
27-1025	Interior Designers	2,254	2,418	164	7.3%	16	83	131	230	\$21.08
27-1026	Merchandise Displayers and Window Trimmers	5,903	5,748	-155	-2.6%	-16	206	328	518	\$13.62
27-1027	Set and Exhibit Designers	472	509	37	7.8%	4	17	28	49	\$21.36
27-1029	Designers, All Other	191	190	-1	-0.5%	0	7	11	18	\$27.66
27-2011	Actors	1,029	1,093	64	6.2%	6	51	53	110	\$9.43
27-2012	Producers and Directors	2,099	2,264	165	7.9%	16	55	135	206	\$23.40
27-2021	Athletes and Sports Competitors	110	115	5	4.5%	0	6	8	14	\$40,990 ††
27-2022	Coaches and Scouts	10,608	11,517	909	8.6%	91	617	834	1,542	\$21,800 ††
27-2023	Umpires, Referees, and Other Sports Officials	376	394	18	4.8%	2	22	29	53	\$19,300 ††
27-2031	Dancers	398	421	23	5.8%	2	25	29	56	\$14.63
27-2041	Music Directors and Composers	3,299	3,341	42	1.3%	4	191	123	318	\$29.70
27-2042	Musicians and Singers	6,488	6,597	109	1.7%	11	376	242	629	\$24.42
27-2099	Entertainers & Performers, Sports & Rel. Work., AO	636	672	36	5.7%	4	31	38	73	\$19.57
27-3011	Radio and Television Announcers	1,350	1,159	-191	-14.1%	-19	54	65	100	\$15.56
27-3022	Reporters and Correspondents	1,813	1,505	-308	-17.0%	-31	51	110	130	\$15.53
27-3031	Public Relations Specialists	7,204	7,707	503	7.0%	50	209	505	764	\$26.86
27-3041	Editors	2,810	2,582	-228	-8.1%	-23	89	170	236	\$24.77
27-3042	Technical Writers	1,809	1,886	77	4.3%	8	59	111	178	\$29.53
27-3043	Writers and Authors	4,185	4,360	175	4.2%	18	182	182	382	\$21.36
27-3091	Interpreters and Translators	2,206	2,432	226	10.2%	23	105	101	229	\$19.78
27-3099	Media and Communication Workers, All Other	2,330	2,583	253	10.9%	25	111	107	243	\$21.89
27-4011	Audio and Video Equipment Technicians	1,335	1,452	117	8.8%	12	39	86	137	\$16.30
27-4012	Broadcast Technicians	921	895	-26	-2.8%	-3	26	56	79	\$14.88
27-4014	Sound Engineering Technicians	343	359	16	4.7%	2	10	22	34	\$19.77
27-4021	Photographers	5,724	5,233	-491	-8.6%	-49	234	192	377	\$13.56
27-4031	Camera Operators, TV, Video & Motion Picture	568	600	32	5.6%	3	17	37	57	\$25.54
27-4032	Film and Video Editors	454	530	76	16.7%	8	14	31	53	\$20.74
27-4099	Media & Communication Equip. Workers, AO	330	327	-3	-0.9%	0	9	20	29	\$28.11

Appendix Table J – cont'd.
Ohio Occupational Employment* Projections Report, 2016-2026

Code	Occupational Title**	Employment		Change in Employment		Growth	Annual Openings			Median Wage*** May 2017
		2016 Annual	2026 Projected	2016-2026	Percent		Exit	Transfers	Total	
29-0000	Healthcare Practitioners & Technical Occupations	371,975	418,231	46,256	12.4%	4,626	10,557	10,163	25,346	\$28.78
29-1011	Chiropractors	1,669	1,804	135	8.1%	14	29	14	57	\$37.37
29-1021	Dentists, General	4,001	4,480	479	12.0%	48	78	32	158	\$84.51
29-1022	Oral and Maxillofacial Surgeons	276	309	33	12.0%	3	5	2	10	N/A
29-1023	Orthodontists	325	364	39	12.0%	4	6	3	13	N/A
29-1029	Dentists, All Other Specialists	377	421	44	11.7%	4	7	3	14	\$91.75 †††
29-1031	Dietitians and Nutritionists	2,534	2,802	268	10.6%	27	84	76	187	\$27.59
29-1041	Optometrists	1,232	1,393	161	13.1%	16	22	17	55	\$55.58
29-1051	Pharmacists	12,779	13,496	717	5.6%	72	303	253	628	\$57.98
29-1061	Anesthesiologists	1,325	1,409	84	6.3%	8	20	15	43	N/A
29-1062	Family and General Practitioners	4,523	4,849	326	7.2%	33	69	52	154	\$91.12
29-1063	Internists, General	3,044	3,238	194	6.4%	19	46	35	100	\$92.75 †
29-1064	Obstetricians and Gynecologists	1,190	1,270	80	6.7%	8	18	14	40	N/A
29-1065	Pediatricians, General	1,479	1,577	98	6.6%	10	22	17	49	\$75.41
29-1066	Psychiatrists	1,469	1,575	106	7.2%	11	22	17	50	\$89.33
29-1067	Surgeons	2,503	2,666	163	6.5%	16	38	28	82	N/A
29-1069	Physicians and Surgeons, All Other	15,627	16,793	1,166	7.5%	117	238	179	534	N/A
29-1071	Physician Assistants	3,198	4,189	991	31.0%	99	64	131	294	\$49.40
29-1081	Podiatrists	727	771	44	6.1%	4	17	20	41	\$60.33
29-1122	Occupational Therapists	4,925	5,963	1,038	21.1%	104	112	151	367	\$40.13
29-1123	Physical Therapists	8,152	9,904	1,752	21.5%	175	174	188	537	\$41.25
29-1124	Radiation Therapists	619	677	58	9.4%	6	16	14	36	\$35.79
29-1125	Recreational Therapists	363	372	9	2.5%	1	10	10	21	\$22.57
29-1126	Respiratory Therapists	6,547	8,187	1,640	25.0%	164	173	167	504	\$26.49
29-1127	Speech-Language Pathologists	5,342	6,247	905	16.9%	90	105	180	375	\$35.65
29-1128	Exercise Physiologists	492	547	55	11.2%	6	12	15	33	\$22.85
29-1129	Therapists, All Other	1,319	1,515	196	14.9%	20	34	41	95	\$31.55
29-1131	Veterinarians	3,337	3,443	106	3.2%	11	63	55	129	\$44.27
29-1141	Registered Nurses	129,954	148,344	18,390	14.2%	1,839	3,984	3,025	8,848	\$30.43
29-1151	Nurse Anesthetists	2,596	2,853	257	9.9%	26	37	90	153	\$72.73
29-1161	Nurse Midwives	245	270	25	10.2%	2	5	7	14	\$46.21
29-1171	Nurse Practitioners	6,757	8,767	2,010	29.7%	201	151	222	574	\$47.65
29-1181	Audiologists	636	735	99	15.6%	10	17	13	40	\$34.07
29-1199	Health Diagnosing and Treating Practitioners, All Other	1,577	1,765	188	11.9%	19	67	17	103	\$38.03
29-2011	Medical and Clinical Laboratory Technologists	6,903	7,565	662	9.6%	66	219	219	504	▲
29-2012	Medical and Clinical Laboratory Technicians	6,380	6,984	604	9.5%	60	202	202	464	▲
29-2021	Dental Hygienists	7,905	8,795	890	11.3%	89	302	187	578	\$32.74
29-2031	Cardiovascular Technologists and Technicians	2,348	2,594	246	10.5%	25	64	62	151	\$26.50
29-2032	Diagnostic Medical Sonographers	2,186	2,615	429	19.6%	43	62	60	165	\$30.30
29-2033	Nuclear Medicine Technologists	917	1,002	85	9.3%	8	25	24	57	\$33.70
29-2034	Radiologic Technologists	8,873	9,679	806	9.1%	81	240	231	552	\$26.38
29-2035	Magnetic Resonance Imaging Technologists	1,433	1,570	137	9.6%	14	39	37	90	\$31.12
29-2041	Emergency Medical Technicians and Paramedics	11,104	12,401	1,297	11.7%	130	205	483	818	\$14.11
29-2051	Dietetic Technicians	672	714	42	6.3%	4	22	31	57	\$14.23
29-2052	Pharmacy Technicians	16,427	18,263	1,836	11.2%	184	563	769	1,516	\$13.82

Appendix Table J – cont'd.
Ohio Occupational Employment* Projections Report, 2016-2026

Code	Occupational Title**	Employment		Change in Employment		Growth	Annual Openings			Median Wage*** May 2017
		2016 Annual	2026 Projected	2016-2026	Percent		Exit	Transfers	Total	
29-2053	Psychiatric Technicians	1,216	1,342	126	10.4%	13	42	57	112	\$15.90
29-2055	Surgical Technologists	4,078	4,439	361	8.9%	36	138	189	363	\$20.67
29-2056	Veterinary Technologists and Technicians	3,368	3,457	89	2.6%	9	111	151	271	\$15.12
29-2057	Ophthalmic Medical Technicians	1,706	1,881	175	10.3%	18	58	80	156	\$17.03
29-2061	Licensed Practical and Licensed Vocational Nurses	40,254	44,069	3,815	9.5%	382	1,487	1,465	3,334	\$20.21
29-2071	Medical Records and Health Information Technicians	9,365	10,638	1,273	13.6%	127	293	298	718	\$18.09
29-2081	Opticians, Dispensing	3,032	3,402	370	12.2%	37	107	119	263	\$17.98
29-2092	Hearing Aid Specialists	415	480	65	15.7%	6	12	15	33	\$27.84
29-2099	Health Technologists and Technicians, All Other	4,478	5,014	536	12.0%	54	132	157	343	\$18.25
29-9011	Occupational Health and Safety Specialists	4,039	4,259	220	5.4%	22	92	114	228	\$33.67
29-9012	Occupational Health and Safety Technicians	839	883	44	5.2%	4	19	24	47	\$24.56
29-9091	Athletic Trainers	1,267	1,486	219	17.3%	22	31	38	91	\$46,570 ††
29-9092	Genetic Counselors	112	135	23	20.5%	2	3	3	8	\$32.02
29-9099	Healthcare Practitioners and Technical Workers, All Other	736	817	81	11.0%	8	17	21	46	\$27.35
31-0000	Healthcare Support Occupations	204,376	248,724	44,348	21.7%	4,435	12,977	12,257	29,669	\$12.32
31-1011	Home Health Aides	67,055	96,334	29,279	43.7%	2,928	4,963	4,129	12,020	\$10.33
31-1013	Psychiatric Aides	1,354	1,477	123	9.1%	12	86	72	170	\$16.36
31-1014	Nursing Assistants	68,537	72,119	3,582	5.2%	358	4,272	3,554	8,184	\$12.54
31-1015	Orderlies	2,281	2,450	169	7.4%	17	144	120	281	\$12.36
31-2011	Occupational Therapist Assistants	3,467	4,419	952	27.5%	95	198	283	576	\$28.19
31-2021	Physical Therapist Assistants	6,246	7,953	1,707	27.3%	171	311	523	1,005	\$27.63
31-2022	Physical Therapist Aides	923	1,100	177	19.2%	18	44	74	136	\$13.10
31-9011	Massage Therapists	3,175	4,028	853	26.9%	85	236	129	450	\$16.58
31-9091	Dental Assistants	10,580	11,748	1,168	11.0%	117	570	639	1,326	\$17.58
31-9092	Medical Assistants	23,153	27,790	4,637	20.0%	464	1,118	1,564	3,146	\$14.72
31-9093	Medical Equipment Preparers	2,249	2,454	205	9.1%	20	147	140	307	\$15.92
31-9094	Medical Transcriptionists	2,209	2,027	-182	-8.2%	-18	141	107	230	\$17.57
31-9095	Pharmacy Aides	759	717	-42	-5.5%	-4	49	50	95	\$12.77
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	2,740	2,827	87	3.2%	9	161	260	430	\$11.72
31-9097	Phlebotomists	5,486	6,611	1,125	20.5%	112	261	349	722	\$15.56
31-9099	Healthcare Support Workers, All Other	4,090	4,591	501	12.2%	50	272	259	581	\$16.26
33-0000	Protective Service Occupations	118,191	120,312	2,121	1.8%	212	5,926	6,651	12,789	\$19.18
33-1011	First-Line Supervisors/Mgrs of Correctional Officers	592	532	-60	-10.1%	-6	17	19	30	\$30.98
33-1012	First-Line Superv./Mgrs of Police & Detectives	2,546	2,614	68	2.7%	7	72	80	159	\$38.22
33-1021	FL Sup/Mgrs of Fire Fighting & Prev. Workers	2,428	2,493	65	2.7%	6	83	75	164	\$34.20
33-1099	First-Line Sup/Mgrs, Protective Serv. Work., AO	2,635	2,739	104	3.9%	10	123	134	267	\$18.84
33-2011	Fire Fighters	18,899	19,395	496	2.6%	50	429	811	1,290	\$22.29
33-3011	Bailiffs	1,466	1,390	-76	-5.2%	-8	50	64	106	\$21.20
33-3012	Correctional Officers and Jailers	13,171	11,645	-1,526	-11.6%	-153	438	558	843	\$20.81
33-3021	Detectives and Criminal Investigators	2,110	2,179	69	3.3%	7	57	75	139	\$31.49
33-3031	Fish and Game Wardens	149	147	-2	-1.3%	0	8	5	13	\$28.99
33-3041	Parking Enforcement Workers	161	99	-62	-38.5%	-6	7	4	5	\$18.22
33-3051	Police and Sheriff's Patrol Officers	24,743	25,370	627	2.5%	63	605	976	1,644	\$29.21
33-3052	Transit and Railroad Police	249	255	6	2.4%	1	6	10	17	\$30.00
33-9011	Animal Control Workers	346	361	15	4.3%	2	16	21	39	\$15.63

Appendix Table J – cont'd.
Ohio Occupational Employment* Projections Report, 2016-2026

Code	Occupational Title**	Employment		Change in Employment		Growth	Annual Openings			Median Wage*** May 2017
		2016 Annual	2026 Projected	2016-2026	Percent		Exit	Transfers	Total	
33-9021	Private Detectives and Investigators	1,222	1,313	91	7.4%	9	64	55	128	\$17.97
33-9031	Gaming Surveillance Officers and Gaming Investigators	532	554	22	4.1%	2	32	38	72	\$23.43
33-9032	Security Guards	32,617	34,063	1,446	4.4%	145	1,977	2,352	4,474	\$11.95
33-9091	Crossing Guards	1,628	1,675	47	2.9%	5	231	65	301	\$12.52
33-9092	Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers	7,026	7,348	322	4.6%	32	995	758	1,785	\$9.29
33-9093	Transportation Security Screeners	750	823	73	9.7%	7	39	30	76	\$18.62
33-9099	Protective Service Workers, All Other	4,551	4,923	372	8.2%	37	656	500	1,193	\$13.17
35-0000	Food Preparation & Serving Related Occupations	507,785	515,111	7,326	1.4%	733	39,007	48,397	88,137	\$9.45
35-1011	Chefs and Head Cooks	4,491	4,783	292	6.5%	29	149	423	601	\$17.95
35-1012	FL Sup/Mgrs of Food Prep. & Serving Workers	35,299	35,811	512	1.5%	51	1,593	3,392	5,036	\$14.93
35-2011	Cooks, Fast Food	15,959	13,683	-2,276	-14.3%	-228	868	1,186	1,826	\$9.38
35-2012	Cooks, Institution and Cafeteria	17,813	18,536	723	4.1%	72	1,065	1,454	2,591	\$12.12
35-2014	Cooks, Restaurant	37,560	38,467	907	2.4%	91	2,227	3,041	5,359	\$11.40
35-2015	Cooks, Short Order	12,334	10,658	-1,676	-13.6%	-168	674	920	1,426	\$9.69
35-2021	Food Preparation Workers	25,545	26,052	507	2.0%	51	2,062	2,236	4,349	\$9.69
35-3011	Bartenders	23,000	22,125	-875	-3.8%	-88	1,087	2,588	3,587	\$9.21
35-3021	Comb. Food Prep. & Serv. Work, inc. Fast Food	163,182	174,409	11,227	6.9%	1,123	14,947	15,632	31,702	\$9.21
35-3022	Counter Attend., Café/Food Concess/Coffee Sh.	17,152	16,965	-187	-1.1%	-19	2,049	1,610	3,640	\$9.38
35-3031	Waiters and Waitresses	98,003	96,136	-1,867	-1.9%	-187	7,185	11,009	18,007	\$9.25
35-3041	Food Servers, Nonrestaurant	14,518	15,504	986	6.8%	99	1,130	1,055	2,284	\$9.72
35-9011	Dining Room & Cafeteria Attend. & Bar Helpers	11,292	11,282	-10	-0.1%	-1	1,005	894	1,898	\$9.24
35-9021	Dishwashers	13,838	13,275	-563	-4.1%	-56	1,003	1,080	2,027	\$9.35
35-9031	Hosts & Hostesses, Rest./Lounge/Coffee Shop	16,096	15,674	-422	-2.6%	-42	1,830	1,738	3,526	\$9.21
35-9099	Food Preparation and Serving Related Workers, All Other	1,030	1,073	43	4.2%	4	94	83	181	\$9.70
37-0000	Building & Grounds Cleaning & Maintenance Occupations	195,352	206,466	11,114	5.7%	1,111	12,160	12,797	26,068	\$11.70
37-1011	FL Sup/Mgrs of Housekeeping & Janitorial Workers	6,901	7,402	501	7.3%	50	361	432	843	\$20.24
37-1012	FL Sup/Mgrs of Lndscap./Lawn Ser/Groundskp	6,423	6,953	530	8.3%	53	216	404	673	\$20.91
37-2011	Janitors & Cleaners, ex. Maids/Hseking Cleaners	91,100	96,861	5,761	6.3%	576	6,118	5,912	12,606	\$11.50
37-2012	Maids and Housekeeping Cleaners	40,548	41,420	872	2.2%	87	3,035	2,291	5,413	\$10.13
37-2019	Building Cleaning Workers, All Other	518	549	31	6.0%	3	35	34	72	\$11.52
37-2021	Pest Control Workers	1,661	1,701	40	2.4%	4	65	160	229	\$15.52
37-3011	Landscaping and Groundskeeping Workers	45,531	48,861	3,330	7.3%	333	2,204	3,371	5,908	\$12.67
37-3012	Pesticide Handlers/Sprayers/Applicators, Veg.	1,033	989	-44	-4.3%	-4	47	72	115	\$15.44
37-3013	Tree Trimmers and Pruners	1,470	1,563	93	6.3%	9	71	108	188	\$17.90
37-3019	Grounds Maintenance Workers, All Other	167	167	0	0.0%	0	8	12	20	\$22.46
39-0000	Personal Care & Service Occupations	174,752	198,818	24,066	13.8%	2,407	14,002	13,098	29,507	\$10.66
39-1011	Gaming Supervisors	288	304	16	5.6%	2	14	32	48	▲
39-1012	Slot Supervisors	124	132	8	6.5%	1	6	14	21	▲
39-1021	First-Line Sup/Mgrs of Personal Serv. Workers	8,226	9,234	1,008	12.3%	101	418	392	911	\$16.67
39-2011	Animal Trainers	726	816	90	12.4%	9	37	48	94	\$12.28
39-2021	Nonfarm Animal Caretakers	8,242	9,810	1,568	19.0%	157	617	728	1,502	\$9.86
39-3012	Gaming and Sports Book Writers and Runners	279	285	6	2.2%	1	16	25	42	\$13.68
39-3031	Ushers, Lobby Attendants, and Ticket Takers	2,413	2,625	212	8.8%	21	331	281	633	\$9.45
39-3091	Amusement and Recreation Attendants	11,347	12,071	724	6.4%	72	1,236	1,392	2,700	\$9.30
39-3092	Costume Attendants	109	111	2	1.8%	0	12	13	25	\$17.38

Appendix Table J – cont'd.
Ohio Occupational Employment* Projections Report, 2016-2026

Code	Occupational Title**	Employment		Change in Employment		Growth	Annual Openings			Median Wage*** May 2017
		2016 Annual	2026 Projected	2016-2026	Percent		Exit	Transfers	Total	
39-3093	Locker Room, Coatroom, & Dressing Room Attendants	578	618	40	6.9%	4	63	71	138	\$9.71
39-4021	Funeral Attendants	2,329	2,374	45	1.9%	4	208	145	357	\$11.86
39-5012	Hairdressers, Hairstylists, and Cosmetologists	30,193	33,609	3,416	11.3%	342	2,129	1,592	4,063	\$10.86
39-5092	Manicurists and Pedicurists	2,552	2,850	298	11.7%	30	162	137	329	\$11.23
39-5093	Shampooers	197	221	24	12.2%	2	13	11	26	\$9.12
39-5094	Skin Care Specialists	1,984	2,230	246	12.4%	25	127	107	259	\$14.37
39-6011	Baggage Porters and Bellhops	491	545	54	11.0%	5	25	46	76	\$9.45
39-6012	Concierges	310	349	39	12.6%	4	16	29	49	\$11.09
39-9011	Child Care Workers	41,155	43,936	2,781	6.8%	278	3,473	2,635	6,386	\$9.86
39-9021	Personal and Home Care Aides	30,913	42,182	11,269	36.5%	1,127	2,917	2,197	6,241	\$10.61
39-9031	Fitness Trainers and Aerobics Instructors	8,887	9,605	718	8.1%	72	605	925	1,602	\$12.43
39-9032	Recreation Workers	14,532	15,132	600	4.1%	60	971	1,484	2,515	\$11.18
39-9041	Residential Advisors	3,042	3,662	620	20.4%	62	222	332	616	\$13.28
39-9099	Personal Care and Service Workers, All Other	1,588	1,644	56	3.5%	6	108	126	240	\$10.34
41-0000	Sales & Related Occupations	551,916	560,882	8,966	1.6%	897	31,994	42,440	75,331	\$12.46
41-1011	First-Line Superv./Mgrs of Retail Sales Workers	53,622	54,973	1,351	2.5%	135	2,004	3,654	5,793	\$17.60
41-1012	First-Line Sup./Mgrs of Non-Retail Sales Workers	13,195	13,668	473	3.6%	47	447	748	1,242	\$31.91
41-2011	Cashiers	116,913	117,084	171	0.1%	17	10,985	10,721	21,723	\$9.31
41-2012	Gaming Change Persons and Booth Cashiers	416	435	19	4.6%	2	40	39	81	\$11.33
41-2021	Counter and Rental Clerks	13,782	13,942	160	1.2%	16	728	1,017	1,761	\$11.18
41-2022	Parts Salespersons	10,515	10,709	194	1.8%	19	462	839	1,320	\$13.15
41-2031	Retail Salespersons	159,133	158,568	-565	-0.4%	-56	10,057	12,606	22,607	\$10.67
41-3011	Advertising Sales Agents	4,162	3,820	-342	-8.2%	-34	149	345	460	\$22.21
41-3021	Insurance Sales Agents	21,025	23,039	2,014	9.6%	201	895	1,185	2,281	\$22.38
41-3031	Securities/Commodities/Fin. Serv. Sales Agents	10,748	11,516	768	7.1%	77	292	734	1,103	\$29.03
41-3041	Travel Agents	1,972	1,457	-515	-26.1%	-52	92	104	144	\$14.42
41-3099	Sales Representatives, Services, All Other	33,702	35,510	1,808	5.4%	181	1,095	2,987	4,263	\$23.53
41-4011	Sales Rep., Wholesale & Mfg, Tech./Sci. Prod.	19,441	19,811	370	1.9%	37	648	1,314	1,999	\$33.84
41-4012	Sales Rep., Wholesale/Mfg, ex. Tech./Sci. Prod.	50,220	50,887	667	1.3%	67	1,668	3,386	5,121	\$27.59
41-9011	Demonstrators and Product Promoters	1,210	1,273	63	5.2%	6	125	84	215	\$12.26
41-9021	Real Estate Brokers	1,623	1,642	19	1.2%	2	84	64	150	\$39.91
41-9022	Real Estate Sales Agents	15,323	16,693	1,370	8.9%	137	820	624	1,581	\$15.57
41-9031	Sales Engineers	3,683	3,730	47	1.3%	5	87	285	377	\$40.04
41-9041	Telemarketers	13,498	14,246	748	5.5%	75	827	1,308	2,210	\$11.11
41-9091	Door-To-Door Sales, News/St. Vendors, & Rel.	5,168	5,074	-94	-1.8%	-9	345	191	527	\$10.96
41-9099	Sales and Related Workers, All Other	2,509	2,745	236	9.4%	24	139	200	363	\$13.19
43-0000	Office & Administrative Support Occupations	840,532	832,514	-8,018	-1.0%	-802	42,566	49,986	91,750	\$16.22
43-1011	First-Line Sup/Mgrs of Office & Admin. Support	45,938	46,583	645	1.4%	64	1,795	2,670	4,529	\$25.52
43-2011	Switchboard Operators, Including Answering Service	2,676	2,154	-522	-19.5%	-52	152	161	261	\$13.06
43-2021	Telephone Operators	340	274	-66	-19.4%	-7	19	23	35	\$17.69
43-3011	Bill and Account Collectors	13,759	13,338	-421	-3.1%	-42	509	889	1,356	\$15.91
43-3021	Billing and Posting Clerks and Machine Operators	21,639	24,041	2,402	11.1%	240	977	1,258	2,475	\$17.36
43-3031	Bookkeeping, Accounting, and Auditing Clerks	66,288	63,954	-2,334	-3.5%	-233	4,032	3,129	6,928	\$18.13
43-3041	Gaming Cage Workers	382	403	21	5.5%	2	24	36	62	\$13.21
43-3051	Payroll and Timekeeping Clerks	6,295	6,038	-257	-4.1%	-26	260	347	581	\$20.33

Appendix Table J – cont'd.
Ohio Occupational Employment* Projections Report, 2016-2026

Code	Occupational Title**	Employment		Change in Employment		Growth	Annual Openings			Median Wage*** May 2017
		2016 Annual	2026 Projected	2016-2026	Percent		Exit	Transfers	Total	
43-3061	Procurement Clerks	3,891	3,872	-19	-0.5%	-2	163	252	413	\$19.41
43-3071	Tellers	19,334	17,474	-1,860	-9.6%	-186	943	1,182	1,939	\$12.59
43-3099	Financial Clerks, All Other	2,447	2,680	233	9.5%	23	97	169	289	\$18.08
43-4011	Brokerage Clerks	2,918	3,228	310	10.6%	31	77	234	342	\$21.53
43-4021	Correspondence Clerks	508	491	-17	-3.3%	-2	23	33	54	\$16.68
43-4031	Court, Municipal, and License Clerks	7,957	8,154	197	2.5%	20	360	316	696	\$17.38
43-4041	Credit Authorizers, Checkers, and Clerks	1,412	1,360	-52	-3.7%	-5	48	90	133	\$17.54
43-4051	Customer Service Representatives	90,387	92,566	2,179	2.4%	218	4,676	6,863	11,757	\$15.50
43-4061	Eligibility Interviewers, Government Programs	4,313	4,588	275	6.4%	28	177	209	414	\$19.85
43-4071	File Clerks	4,453	3,832	-621	-13.9%	-62	254	251	443	\$15.46
43-4081	Hotel, Motel, and Resort Desk Clerks	6,143	6,605	462	7.5%	46	352	630	1,028	\$9.67
43-4111	Interviewers, Except Eligibility and Loan	8,922	9,082	160	1.8%	16	481	563	1,060	\$15.06
43-4121	Library Assistants, Clerical	6,118	6,298	180	2.9%	18	494	375	887	\$11.58
43-4131	Loan Interviewers and Clerks	11,375	12,675	1,300	11.4%	130	432	695	1,257	\$17.57
43-4141	New Accounts Clerks	2,307	2,171	-136	-5.9%	-14	96	138	220	\$16.47
43-4151	Order Clerks	10,193	9,763	-430	-4.2%	-43	463	653	1,073	\$15.36
43-4161	Human Resources Assis., ex. Payroll & Timekp	4,599	4,483	-116	-2.5%	-12	192	305	485	\$18.47
43-4171	Receptionists and Information Clerks	26,252	26,369	117	0.4%	12	1,636	1,746	3,394	\$12.29
43-4181	Reservation/Trans. Ticket Agents & Travel Clerks	2,436	2,560	124	5.1%	12	108	149	269	\$11.90
43-4199	Information and Record Clerks, All Other	3,787	4,108	321	8.5%	32	192	247	471	\$19.51
43-5011	Cargo and Freight Agents	2,682	2,461	-221	-8.2%	-22	80	128	186	\$19.04
43-5021	Couriers and Messengers	2,042	2,176	134	6.6%	13	97	92	202	\$12.50
43-5031	Police, Fire, and Ambulance Dispatchers	4,258	4,429	171	4.0%	17	153	234	404	\$20.91
43-5032	Dispatchers, Except Police, Fire, and Ambulance	7,520	7,337	-183	-2.4%	-18	262	400	644	\$18.76
43-5041	Meter Readers, Utilities	1,017	918	-99	-9.7%	-10	31	39	60	\$21.38
43-5051	Postal Service Clerks	2,673	2,292	-381	-14.3%	-38	126	68	156	\$28.15
43-5052	Postal Service Mail Carriers	12,761	10,940	-1,821	-14.3%	-182	458	334	610	\$26.39
43-5053	Postal Service Mail Sorters/Proc/Proc Mach. Op	3,806	3,100	-706	-18.5%	-71	146	98	173	\$27.53
43-5061	Production, Planning, and Expediting Clerks	14,237	14,685	448	3.1%	45	502	938	1,485	\$22.47
43-5071	Shipping, Receiving, and Traffic Clerks	34,237	33,890	-347	-1.0%	-35	1,330	2,028	3,323	\$15.21
43-5081	Stock Clerks and Order Fillers	83,964	87,287	3,323	4.0%	332	4,675	6,100	11,107	\$11.56
43-5111	Weighers/Meas./Checkers/Samplers, Recordkp	2,505	2,610	105	4.2%	10	101	146	257	\$15.65
43-6011	Executive Secretaries and Administrative Assistants	21,735	17,486	-4,249	-19.5%	-425	1,056	1,028	1,659	\$25.74
43-6012	Legal Secretaries	7,417	5,365	-2,052	-27.7%	-205	344	335	474	\$20.72
43-6013	Medical Secretaries	40,237	46,776	6,539	16.3%	654	2,344	2,280	5,278	\$15.52
43-6014	Secretaries, Except Legal, Medical, and Executive	83,502	76,216	-7,286	-8.7%	-729	4,302	4,185	7,758	\$16.62
43-9011	Computer Operators	1,432	1,074	-358	-25.0%	-36	50	76	90	\$18.83
43-9021	Data Entry Keyers	6,249	4,765	-1,484	-23.7%	-148	283	355	490	\$14.46
43-9022	Word Processors and Typists	1,788	1,184	-604	-33.8%	-60	94	71	105	\$18.72
43-9041	Insurance Claims and Policy Processing Clerks	20,268	22,277	2,009	9.9%	201	909	1,194	2,304	\$18.11
43-9051	Mail Clerks & Mail Machine Op., ex. Postal Serv.	3,631	3,182	-449	-12.4%	-45	185	191	331	\$13.92
43-9061	Office Clerks, General	94,521	91,652	-2,869	-3.0%	-287	5,462	5,323	10,498	\$14.88
43-9071	Office Machine Operators, Except Computer	2,829	2,420	-409	-14.5%	-41	115	173	247	\$13.18
43-9111	Statistical Assistants	658	685	27	4.1%	3	31	51	85	\$20.16
43-9199	Office and Administrative Support Workers, All Other	5,526	6,170	644	11.7%	64	254	372	690	\$17.74

Appendix Table J – cont'd.
Ohio Occupational Employment* Projections Report, 2016-2026

Code	Occupational Title**	Employment		Change in Employment		Growth	Annual Openings			Median Wage*** May 2017
		2016 Annual	2026 Projected	2016-2026	Percent		Exit	Transfers	Total	
45-0000	Farming, Fishing, & Forestry Occupations	13,947	13,534	-413	-3.0%	-41	504	1,523	1,986	\$13.51
45-1011	FL Sup/Mgrs of Farming/Fishing/Forestry Wrks.	645	631	-14	-2.2%	-1	21	63	83	\$20.63
45-2011	Agricultural Inspectors	390	393	3	0.8%	0	17	35	52	\$23.97
45-2041	Graders and Sorters, Agricultural Products	549	534	-15	-2.7%	-2	22	51	71	\$11.26
45-2091	Agricultural Equipment Operators	1,071	1,089	18	1.7%	2	40	123	165	\$17.21
45-2092	Farmworkers/Laborers, Crop/Nursery/Greenhse	8,993	8,781	-212	-2.4%	-21	325	1,013	1,317	\$11.85
45-2093	Farmworkers, Farm and Ranch Animals	1,414	1,288	-126	-8.9%	-13	49	154	190	\$11.75
45-4021	Fallers	131	116	-15	-11.5%	-2	4	11	13	\$19.56 †††
45-4022	Logging Equipment Operators	338	306	-32	-9.5%	-3	11	29	37	\$14.17
47-0000	Construction & Extraction Occupations	212,889	230,669	17,780	8.4%	1,778	7,781	14,597	24,156	\$22.36
47-1011	First-Line Sup/Mgrs of Con. Trades/Extract. Work	16,026	17,544	1,518	9.5%	152	537	1,059	1,748	\$30.05
47-2011	Boilermakers	608	631	23	3.8%	2	19	40	61	\$33.82
47-2021	Brickmasons and Blockmasons	4,062	4,450	388	9.6%	39	123	236	398	\$25.64
47-2031	Carpenters	28,110	30,019	1,909	6.8%	191	999	1,615	2,805	\$21.88
47-2041	Carpet Installers	866	928	62	7.2%	6	28	47	81	\$16.78
47-2042	Floor Layers, Except Carpet, Wood, and Hard Tiles	333	361	28	8.4%	3	11	18	32	\$18.99
47-2044	Tile and Marble Setters	923	1,005	82	8.9%	8	30	50	88	\$21.54
47-2051	Cement Masons and Concrete Finishers	4,721	5,241	520	11.0%	52	189	338	579	\$21.21
47-2061	Construction Laborers	45,157	49,079	3,922	8.7%	392	1,644	3,106	5,142	\$18.75
47-2071	Paving, Surfacing, and Tamping Equipment Operators	1,193	1,309	116	9.7%	12	41	85	138	\$22.51
47-2073	Operating Engineers & Other Con. Equip. Op.	15,198	16,072	874	5.8%	87	597	1,096	1,780	\$26.15
47-2081	Drywall and Ceiling Tile Installers	1,585	1,559	-26	-1.6%	-3	48	88	133	\$18.22
47-2082	Tapers	251	252	1	0.4%	0	8	14	22	\$25.73
47-2111	Electricians	24,524	26,506	1,982	8.1%	198	889	1,896	2,983	\$24.17
47-2121	Glaziers	1,453	1,574	121	8.3%	12	55	116	183	\$19.02
47-2131	Insulation Workers, Floor, Ceiling, and Wall	502	516	14	2.8%	1	14	39	54	\$18.67
47-2132	Insulation Workers, Mechanical	964	1,064	100	10.4%	10	27	78	115	\$27.52
47-2141	Painters, Construction and Maintenance	9,405	9,816	411	4.4%	41	328	479	848	\$18.61
47-2142	Paperhangers	421	438	17	4.0%	2	15	21	38	\$17.42
47-2151	Pipelayers	675	697	22	3.3%	2	25	46	73	\$21.91
47-2152	Plumbers, Pipefitters, and Steamfitters	16,071	18,454	2,383	14.8%	238	626	1,155	2,019	\$25.15
47-2161	Plasterers and Stucco Masons	356	362	6	1.7%	1	13	20	34	\$22.33
47-2171	Reinforcing Iron and Rebar Workers	463	498	35	7.6%	4	12	37	53	\$26.03
47-2181	Roofers	5,757	6,353	596	10.4%	60	174	410	644	\$17.53
47-2211	Sheet Metal Workers	4,154	4,491	337	8.1%	34	149	296	479	\$25.04
47-2221	Structural Iron and Steel Workers	3,121	3,506	385	12.3%	38	96	249	383	\$28.63
47-3011	Helpers--Brick/Block/Stone/Tile & Marble Setters	615	688	73	11.9%	7	28	63	98	\$16.86
47-3012	Helpers--Carpenters	834	930	96	11.5%	10	37	85	132	\$13.39
47-3013	Helpers--Electricians	943	1,033	90	9.5%	9	42	95	146	\$13.51
47-3015	Helpers--Pipelayers/Plumbers/Pipefitters/Steamf	1,026	1,193	167	16.3%	17	47	107	171	\$12.58
47-3016	Helpers--Roofers	465	520	55	11.8%	6	21	48	75	\$14.09
47-4011	Construction and Building Inspectors	2,883	3,073	190	6.6%	19	147	168	334	\$26.56
47-4021	Elevator Installers and Repairers	526	592	66	12.5%	7	18	46	71	\$36.60
47-4031	Fence Erectors	796	874	78	9.8%	8	29	62	99	\$16.75
47-4041	Hazardous Materials Removal Workers	2,226	2,421	195	8.8%	20	93	182	295	\$21.00

Appendix Table J – cont'd.
Ohio Occupational Employment* Projections Report, 2016-2026

Code	Occupational Title**	Employment		Change in Employment		Growth	Annual Openings			Median Wage*** May 2017
		2016 Annual	2026 Projected	2016-2026	Percent		Exit	Transfers	Total	
47-4051	Highway Maintenance Workers	7,848	8,012	164	2.1%	16	335	455	806	\$19.24
47-4071	Septic Tank Servicers and Sewer Pipe Cleaners	1,469	1,658	189	12.9%	19	78	114	211	\$20.42
47-4099	Construction and Related Workers, All Other	1,073	1,151	78	7.3%	8	44	72	124	▲
47-5012	Rotary Drill Operators, Oil and Gas	241	282	41	17.0%	4	6	24	34	\$24.21
47-5013	Service Unit Operators, Oil, Gas, and Mining	686	798	112	16.3%	11	18	69	98	\$20.35
47-5021	Earth Drillers, Except Oil and Gas	458	472	14	3.1%	1	12	37	50	\$20.17
47-5041	Continuous Mining Machine Operators	736	691	-45	-6.1%	-4	21	62	79	\$28.05
47-5042	Mine Cutting and Channeling Machine Operators	200	187	-13	-6.5%	-1	6	17	22	\$21.01
47-5051	Rock Splitters, Quarry	116	105	-11	-9.5%	-1	3	10	12	\$14.93
47-5071	Roustabouts, Oil and Gas	713	836	123	17.3%	12	26	67	105	\$16.92
47-5081	Helpers--Extraction Workers	179	198	19	10.6%	2	6	17	25	\$12.96
49-0000	Installation, Maintenance, & Repair Occupations	223,384	232,205	8,821	3.9%	882	7,922	13,320	22,124	\$21.02
49-1011	FL Sup/Mgrs of Mechanics/Installers/Repairers	16,746	17,401	655	3.9%	66	553	880	1,499	\$29.66
49-2011	Computer, ATM, & Office Machine Repairers	3,923	3,745	-178	-4.5%	-18	126	244	352	\$16.54
49-2021	Radio Mechanics	671	613	-58	-8.6%	-6	21	45	60	\$27.43
49-2022	Telecomm. Equip. Install/Repair, ex. Line Install	9,158	8,534	-624	-6.8%	-62	293	625	856	\$23.05
49-2091	Avionics Technicians	436	518	82	18.8%	8	10	27	45	\$24.69
49-2092	Electric Motor, Power Tool, and Related Repairers	796	845	49	6.2%	5	25	50	80	\$21.64
49-2093	Electrical/Electronics Install/Repair, Trans. Equip.	231	237	6	2.6%	1	6	14	21	\$24.31
49-2094	Electrical/Electronics Repair, Comm/Indus Equip.	2,324	2,325	1	0.0%	0	58	142	200	\$27.09
49-2095	Electrical/Electronics Repair, Pwrhse/Substa/Rly	582	560	-22	-3.8%	-2	14	35	47	\$36.00
49-2096	Electronic Equipment Install/Repair, Motor Veh.	229	124	-105	-45.9%	-10	6	11	7	\$18.04
49-2097	Electronic Home Entertainm Equip. Install/Repair	1,362	1,384	22	1.6%	2	49	92	143	\$13.37
49-2098	Security and Fire Alarm Systems Installers	2,569	2,882	313	12.2%	31	89	204	324	\$21.62
49-3011	Aircraft Mechanics and Service Technicians	4,130	4,566	436	10.6%	44	136	192	372	\$26.32
49-3021	Automotive Body and Related Repairers	6,453	6,711	258	4.0%	26	228	392	646	\$18.56
49-3022	Automotive Glass Installers and Repairers	976	1,003	27	2.8%	3	37	57	97	\$18.21
49-3023	Automotive Service Technicians and Mechanics	28,328	28,675	347	1.2%	35	899	1,721	2,655	\$18.02
49-3031	Bus & Truck Mechanics & Diesel Engine Spec.	12,376	13,073	697	5.6%	70	390	726	1,186	\$21.74
49-3041	Farm Equipment Mechanics	1,470	1,582	112	7.6%	11	48	96	155	\$17.18
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	3,620	3,847	227	6.3%	23	116	235	374	\$26.07
49-3043	Rail Car Repairers	621	646	25	4.0%	2	20	40	62	\$18.00
49-3051	Motorboat Mechanics	431	426	-5	-1.2%	0	17	26	43	\$17.48
49-3052	Motorcycle Mechanics	751	742	-9	-1.2%	-1	30	46	75	\$16.68
49-3053	Outdoor Power Equip. & Other Sm Engine Mech.	1,288	1,403	115	8.9%	12	55	83	150	\$14.63
49-3091	Bicycle Repairers	390	465	75	19.2%	8	16	37	61	\$13.10
49-3092	Recreational Vehicle Service Technicians	332	319	-13	-3.9%	-1	12	28	39	\$16.89
49-3093	Tire Repairers and Changers	3,844	3,748	-96	-2.5%	-10	141	326	457	\$11.64
49-9011	Mechanical Door Repairers	1,141	1,256	115	10.1%	12	30	59	101	\$19.32
49-9012	Control & Valve Install/Repair, ex. Mech. Door	1,348	1,459	111	8.2%	11	35	70	116	\$29.40
49-9021	Heating, AC, & Refrigeration Mechanics/Installers	11,788	13,560	1,772	15.0%	177	350	850	1,377	\$22.19
49-9031	Home Appliance Repairers	2,454	2,302	-152	-6.2%	-15	116	104	205	\$16.67
49-9041	Industrial Machinery Mechanics	19,485	20,854	1,369	7.0%	137	681	1,043	1,861	\$24.14
49-9043	Maintenance Workers, Machinery	2,562	2,698	136	5.3%	14	112	152	278	\$21.00
49-9044	Millwrights	2,340	2,608	268	11.5%	27	78	140	245	\$29.47

Appendix Table J – cont'd.
Ohio Occupational Employment* Projections Report, 2016-2026

Code	Occupational Title**	Employment		Change in Employment		Growth	Annual Openings			Median Wage*** May 2017
		2016 Annual	2026 Projected	2016-2026	Percent		Exit	Transfers	Total	
49-9051	Electrical Power-Line Installers and Repairers	3,304	3,170	-134	-4.1%	-13	82	170	239	\$33.43
49-9052	Telecommunications Line Installers and Repairers	3,385	3,350	-35	-1.0%	-4	82	249	327	\$22.62
49-9062	Medical Equipment Repairers	1,980	2,006	26	1.3%	3	76	94	173	\$23.32
49-9063	Musical Instrument Repairers and Tuners	384	372	-12	-3.1%	-1	14	18	31	\$15.63
49-9064	Watch Repairers	144	100	-44	-30.6%	-4	5	6	7	\$24.93
49-9069	Precision Instrument/Equipment Repairers, AO	665	671	6	0.9%	1	26	31	58	\$28.54
49-9071	Maintenance and Repair Workers, General	56,262	59,464	3,202	5.7%	320	2,357	3,218	5,895	\$18.87
49-9091	Coin/Vending/Amusement Machine Serv/Repair	2,430	1,797	-633	-26.0%	-63	90	143	170	\$16.03
49-9094	Locksmiths and Safe Repairers	742	703	-39	-5.3%	-4	36	30	62	\$16.53
49-9095	Manufactured Building and Mobile Home Installers	154	142	-12	-7.8%	-1	5	8	12	\$16.35
49-9096	Riggers	381	414	33	8.7%	3	12	27	42	\$19.17
49-9098	Helpers--Installation, Maintenance, and Repair Workers	2,118	2,293	175	8.3%	18	106	167	291	\$14.61
49-9099	Installation, Maintenance, and Repair Workers, All Other	5,772	6,106	334	5.8%	33	218	341	592	\$17.74
51-0000	Production Occupations	503,651	475,215	-28,436	-5.6%	-2,844	19,361	34,971	51,488	\$17.08
51-1011	FL Sup/Mgrs of Production/Operating Workers	30,654	30,371	-283	-0.9%	-28	973	1,953	2,898	\$28.16
51-2011	Aircraft Struct., Surfaces, Rigging, & Systems Assemblers	512	411	-101	-19.7%	-10	19	28	37	\$21.02
51-2021	Coil Winders, Tapers, and Finishers	659	527	-132	-20.0%	-13	30	39	56	\$19.42
51-2022	Electrical and Electronic Equipment Assemblers	9,899	7,993	-1,906	-19.3%	-191	454	584	847	▲
51-2023	Electromechanical Equipment Assemblers	2,064	1,644	-420	-20.3%	-42	94	121	173	▲
51-2031	Engine and Other Machine Assemblers	6,570	5,410	-1,160	-17.7%	-116	151	446	481	\$23.14
51-2041	Structural Metal Fabricators and Fitters	3,422	2,851	-571	-16.7%	-57	108	229	280	\$17.64
51-2091	Fiberglass Laminators and Fabricators	451	457	6	1.3%	1	19	33	53	\$15.77
51-2092	Team Assemblers	41,908	37,466	-4,442	-10.6%	-444	1,695	2,874	4,125	▲
51-2099	Assemblers and Fabricators, All Other	30,574	25,538	-5,036	-16.5%	-504	1,198	2,032	2,726	▲
51-3011	Bakers	6,333	6,475	142	2.2%	14	411	481	906	\$12.12
51-3021	Butchers and Meat Cutters	4,973	5,206	233	4.7%	23	229	388	640	\$17.20
51-3022	Meat, Poultry, and Fish Cutters and Trimmers	2,214	2,246	32	1.4%	3	100	170	273	\$13.28
51-3023	Slaughterers and Meat Packers	3,039	3,055	16	0.5%	2	137	232	371	\$12.94
51-3091	Food and Tobacco Roasting, Baking, and Drying Machine Operators/Tenders	831	838	7	0.8%	1	34	60	95	\$16.18
51-3092	Food Batchmakers	6,013	6,225	212	3.5%	21	336	511	868	\$15.48
51-3093	Food Cooking Machine Operators/Tenders	1,514	1,600	86	5.7%	9	84	126	219	\$15.88
51-3099	Food Processing Workers, All Other	2,252	2,425	173	7.7%	17	100	158	275	\$11.87
51-4011	Computer-Controlled Machine Tool Oper., M/P	13,360	13,487	127	1.0%	13	371	941	1,325	\$19.28
51-4012	Numerical Tool and Process Control Programmers	2,007	2,345	338	16.8%	34	60	153	247	\$23.71
51-4021	Extruding & Drawing Machine Setters, O/T, M/P	6,481	5,471	-1,010	-15.6%	-101	150	448	497	\$15.91
51-4022	Forging Mach. Setters/Operators/Tenders, M/P	1,007	811	-196	-19.5%	-20	26	65	71	\$18.59
51-4023	Rolling Machine Setters/Operators/Tenders, M/P	2,653	2,315	-338	-12.7%	-34	71	177	214	\$18.92
51-4031	Cutting/Punching/Press Machine S/O/T, M/P	17,639	16,354	-1,285	-7.3%	-128	615	1,286	1,773	\$15.71
51-4032	Drilling & Boring Machine Tool Setters, O/T, M/P	657	525	-132	-20.1%	-13	22	41	50	\$18.00
51-4033	Grind/Lapping/Polish/Buff Mach.Tool S/O/T, M/P	6,970	6,260	-710	-10.2%	-71	230	462	621	\$15.40
51-4034	Lathe & Turning Machine Tool Setters, O/T, M/P	1,714	1,551	-163	-9.5%	-16	48	112	144	\$19.39
51-4035	Milling & Planing Machine Setters, O/T, M/P	1,367	1,037	-330	-24.1%	-33	44	83	94	\$22.14
51-4041	Machinists	27,741	28,306	565	2.0%	56	973	1,825	2,854	\$20.20
51-4051	Metal-Refining Furnace Operators/Tenders	1,171	1,102	-69	-5.9%	-7	37	73	103	\$17.97
51-4052	Pourers and Casters, Metal	578	459	-119	-20.6%	-12	17	33	38	\$16.63

Appendix Table J – cont'd.
Ohio Occupational Employment* Projections Report, 2016-2026

Code	Occupational Title**	Employment		Change in Employment		Growth	Annual Openings			Median Wage*** May 2017
		2016 Annual	2026 Projected	2016-2026	Percent		Exit	Transfers	Total	
51-4061	Model Makers, Metal and Plastic	458	416	-42	-9.2%	-4	16	30	42	\$24.57
51-4062	Patternmakers, Metal and Plastic	351	305	-46	-13.1%	-5	12	23	30	\$19.53
51-4071	Foundry Mold and Coremakers	1,797	1,451	-346	-19.3%	-35	60	123	148	\$16.63
51-4072	Molding/Coremaking/Casting Mach. S/O/T, M/P	15,854	13,498	-2,356	-14.9%	-236	537	1,110	1,411	\$14.70
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	13,980	13,601	-379	-2.7%	-38	511	954	1,427	\$16.45
51-4111	Tool and Die Makers	7,846	7,294	-552	-7.0%	-55	297	411	653	\$24.70
51-4121	Welders, Cutters, Solderers, and Brazers	18,078	18,593	515	2.8%	52	488	1,432	1,972	\$18.58
51-4122	Welding/Soldering/Brazing Machine Setters, O/T	3,152	2,870	-282	-8.9%	-28	80	235	287	\$17.97
51-4191	Heat Treating Equip. Setters, O/T, M/P	1,677	1,454	-223	-13.3%	-22	58	108	144	\$18.12
51-4192	Lay-Out Workers, Metal and Plastic	143	138	-5	-3.5%	0	5	10	15	\$18.42
51-4193	Plating & Coating Machine Setters, O/T, M/P	2,408	2,101	-307	-12.7%	-31	57	166	192	\$15.75
51-4194	Tool Grinders, Filers, and Sharpeners	742	726	-16	-2.2%	-2	22	68	88	\$17.35
51-4199	Metal Workers and Plastic Workers, All Other	1,448	1,342	-106	-7.3%	-11	52	96	137	\$17.24
51-5111	Prepress Technicians and Workers	1,813	1,363	-450	-24.8%	-45	66	120	141	\$18.33
51-5112	Printing Press Operators and Job Printers	9,117	8,093	-1,024	-11.2%	-102	335	560	793	\$16.42
51-5113	Print Binding and Finishing Workers	2,901	2,462	-439	-15.1%	-44	203	148	307	\$13.95
51-6011	Laundry and Dry-Cleaning Workers	6,685	6,792	107	1.6%	11	452	453	916	\$9.88
51-6021	Pressers, Textile, Garment, and Related Materials	2,167	2,147	-20	-0.9%	-2	130	142	270	\$9.88
51-6031	Sewing Machine Operators	3,283	2,688	-595	-18.1%	-60	170	144	254	\$11.80
51-6041	Shoe and Leather Workers and Repairers	480	456	-24	-5.0%	-2	22	22	42	\$11.36
51-6062	Textile Cutting Machine Setters, Operators, & Tenders	247	221	-26	-10.5%	-3	16	16	29	\$14.28
51-6063	Textile Knitting and Weaving Machine Setters, O/T	174	154	-20	-11.5%	-2	9	11	18	\$13.94
51-6091	Extrud/Form Mach S/O/T, Synthetic/Glass Fibers	748	707	-41	-5.5%	-4	38	49	83	\$16.13
51-6093	Upholsterers	1,030	1,025	-5	-0.5%	0	45	59	104	\$13.90
51-6099	Textile, Apparel, and Furnishings Workers, All Other	299	291	-8	-2.7%	-1	16	20	35	\$14.45
51-7011	Cabinetmakers and Bench Carpenters	4,758	4,931	173	3.6%	17	226	268	511	\$15.58
51-7021	Furniture Finishers	1,331	1,350	19	1.4%	2	75	48	125	\$14.50
51-7041	Sawing Mach. Setters/Operators/Tenders, Wood	1,181	1,181	0	0.0%	0	48	87	135	\$15.28
51-7042	Woodworking Machine Setters, O/T, Except Sawing	4,611	4,698	87	1.9%	9	179	324	512	\$14.46
51-8012	Power Distributors and Dispatchers	826	759	-67	-8.1%	-7	19	49	61	\$38.13
51-8013	Power Plant Operators	1,181	1,118	-63	-5.3%	-6	28	71	93	\$34.70
51-8021	Stationary Engineers and Boiler Operators	1,043	1,060	17	1.6%	2	34	74	110	\$27.02
51-8031	Water/Liquid Waste Treatment Plant/System Op.	4,766	4,387	-379	-8.0%	-38	130	244	336	\$23.05
51-8091	Chemical Plant and System Operators	2,629	2,397	-232	-8.8%	-23	58	189	224	\$28.30
51-8093	Petroleum Pump System Oper./Refinery Oper./Gaugers	1,548	1,522	-26	-1.7%	-3	36	115	148	\$30.80
51-8099	Plant and System Operators, All Other	461	448	-13	-2.8%	-1	10	34	43	\$25.00
51-9011	Chemical Equipment Operators/Tenders	5,634	5,354	-280	-5.0%	-28	151	431	554	\$21.30
51-9012	Sep./Filter/Clarify/Precipitating/Still Mach. S/O/T	1,901	1,840	-61	-3.2%	-6	51	147	192	\$17.66
51-9021	Crushing/Grinding/Polishing Machine S/O/T	1,179	1,058	-121	-10.3%	-12	40	84	112	\$16.96
51-9022	Grinding and Polishing Workers, Hand	839	669	-170	-20.3%	-17	27	56	66	\$14.65
51-9023	Mixing/Blending Machine Setters/Operators/Tenders	7,656	7,279	-377	-4.9%	-38	269	560	791	\$17.81
51-9032	Cutting/Slicing Mach. Setters/Operators/Tenders	3,843	3,638	-205	-5.3%	-20	135	285	400	\$16.80
51-9041	Extrud/Form/Pressing/Compacting Mach. S/O/T	6,994	6,301	-693	-9.9%	-69	258	534	723	\$15.89
51-9051	Furnace/Kiln/Oven/Drier/Kettle Oper./Tenders	1,481	1,348	-133	-9.0%	-13	60	78	125	\$17.20
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	31,179	26,970	-4,209	-13.5%	-421	1,209	2,226	3,014	\$18.11

Appendix Table J – cont'd.
Ohio Occupational Employment* Projections Report, 2016-2026

Code	Occupational Title**	Employment		Change in Employment		Growth	Annual Openings			Median Wage*** May 2017
		2016 Annual	2026 Projected	2016-2026	Percent		Exit	Transfers	Total	
51-9071	Jewelers and Precious Stone and Metal Workers	1,145	1,078	-67	-5.9%	-7	66	49	108	\$18.89
51-9081	Dental Laboratory Technicians	983	1,096	113	11.5%	11	45	69	125	\$19.10
51-9082	Medical Appliance Technicians	691	787	96	13.9%	10	32	49	91	\$16.11
51-9083	Ophthalmic Laboratory Technicians	960	1,069	109	11.4%	11	44	68	123	\$13.80
51-9111	Packaging and Filling Machine Operators/Tenders	17,975	18,266	291	1.6%	29	857	1,203	2,089	\$14.74
51-9121	Coating/Painting/Spraying Machine Setters, O/T	6,639	6,570	-69	-1.0%	-7	188	494	675	\$16.54
51-9122	Painters, Transportation Equipment	2,641	2,820	179	6.8%	18	78	204	300	\$18.63
51-9141	Semiconductor Processors	676	650	-26	-3.8%	-3	26	48	71	\$18.81
51-9151	Photographic Process Workers and Processing Machine Operators	980	722	-258	-26.3%	-26	44	87	105	\$13.84
51-9191	Cementing and Gluing Machine Operators/Tenders	898	846	-52	-5.8%	-5	41	53	89	\$15.87
51-9192	Cleaning/Washing/Metal Pickling Equipment O/T	1,390	1,395	5	0.4%	0	65	114	179	\$15.27
51-9193	Cooling and Freezing Equipment Operators/Tenders	888	895	7	0.8%	1	35	65	101	\$13.69
51-9194	Etchers and Engravers	572	565	-7	-1.2%	-1	35	33	67	\$16.34
51-9195	Molders/Shapers/Casters, ex. Metal & Plastic	2,591	2,399	-192	-7.4%	-19	96	154	231	\$15.59
51-9196	Paper Goods Machine Setters, Operators, and Tenders	4,111	3,753	-358	-8.7%	-36	142	256	362	\$18.24
51-9197	Tire Builders	1,146	911	-235	-20.5%	-24	33	82	91	\$24.31
51-9198	Helpers--Production Workers	18,320	19,742	1,422	7.8%	142	1,020	1,812	2,974	\$13.85
51-9199	Production Workers, All Other	18,211	18,992	781	4.3%	78	731	1,359	2,168	\$14.26
53-0000	Transportation & Material Moving Occupations	415,222	434,014	18,792	4.5%	1,879	21,046	30,617	53,542	\$14.64
53-1021	FL Sup/Mgrs of Help/Labor/Mat. Movers, Hand	7,054	7,523	469	6.6%	47	234	501	782	▲
53-1031	FL Sup/Mgr of Trans/Mat.-Mov. Mach & Veh Op	7,124	7,513	389	5.5%	39	235	503	777	▲
53-2011	Airline Pilots, Copilots, and Flight Attendants	1,137	1,200	63	5.5%	6	33	75	114	\$90,890 ††
53-2012	Commercial Pilots	2,165	2,397	232	10.7%	23	64	146	233	\$77,510 ††
53-2021	Air Traffic Controllers	758	839	81	10.7%	8	26	47	81	\$65.96
53-2022	Airfield Operations Specialists	279	308	29	10.4%	3	9	17	29	\$20.12
53-2031	Flight Attendants	790	880	90	11.4%	9	41	47	97	\$50,720 ††
53-3011	Ambulance Drivers & Attendants, Ex. EMT	926	1,117	191	20.6%	19	62	82	163	\$10.83
53-3021	Bus Drivers, Transit and Intercity	6,077	6,330	253	4.2%	25	487	253	765	\$20.18
53-3022	Bus Drivers, School	10,891	11,921	1,030	9.5%	103	895	466	1,464	\$15.44
53-3031	Driver/Sales Workers	24,089	21,382	-2,707	-11.2%	-271	964	1,428	2,121	\$9.47
53-3032	Truck Drivers, Heavy and Tractor-Trailer	76,084	79,093	3,009	4.0%	301	3,290	4,874	8,465	\$20.09
53-3033	Truck Drivers, Light or Delivery Services	37,947	39,515	1,568	4.1%	157	1,642	2,433	4,232	\$14.27
53-3041	Taxi Drivers and Chauffeurs	11,650	12,810	1,160	10.0%	116	726	495	1,337	\$10.39
53-3099	Motor Vehicle Operators, All Other	6,020	6,296	276	4.6%	28	711	340	1,079	\$10.04
53-4013	Rail Yard Engineers, Dinkey Operators, & Hostlers	247	260	13	5.3%	1	6	14	21	\$26.15
53-4021	Railroad Brake, Signal, and Switch Operators	336	340	4	1.2%	0	8	23	31	\$23.95
53-5011	Sailors and Marine Oilers	260	270	10	3.8%	1	10	21	32	\$17.26
53-5021	Captains, Mates, and Pilots of Water Vessels	328	353	25	7.6%	2	11	23	36	\$24.32
53-6011	Bridge and Lock Tenders	177	195	18	10.2%	2	8	13	23	\$25.38
53-6021	Parking Lot Attendants	3,975	4,033	58	1.5%	6	235	353	594	\$9.88
53-6031	Service Station Attendants	4,640	4,972	332	7.2%	33	258	524	815	\$10.82
53-6041	Traffic Technicians	111	116	5	4.5%	0	5	8	13	\$23.98
53-6051	Transportation Inspectors	762	824	62	8.1%	6	28	47	81	\$26.66
53-6061	Transportation Attendants, Except Flight Attendants	368	381	13	3.5%	1	31	18	50	\$12.33
53-6099	Transportation Workers, All Other	1,026	1,171	145	14.1%	14	47	76	137	\$15.00

Appendix Table J – cont'd.
Ohio Occupational Employment* Projections Report, 2016-2026

Code	Occupational Title**	Employment		Change in Employment		Growth	Annual Openings			Median Wage*** May 2017
		2016 Annual	2026 Projected	2016-2026	Percent		Exit	Transfers	Total	
53-7011	Conveyor Operators/Tenders	1,198	1,161	-37	-3.1%	-4	58	98	152	\$14.91
53-7021	Crane and Tower Operators	1,810	1,919	109	6.0%	11	61	131	203	\$19.73
53-7032	Excavating & Loading Machine & Dragline Oper.	1,062	1,045	-17	-1.6%	-2	38	75	111	\$19.58
53-7041	Hoist and Winch Operators	114	111	-3	-2.6%	0	6	9	15	\$17.77
53-7051	Industrial Truck and Tractor Operators	21,996	22,765	769	3.5%	77	780	1,675	2,532	\$15.66
53-7061	Cleaners of Vehicles and Equipment	12,908	13,659	751	5.8%	75	685	1,152	1,912	\$10.82
53-7062	Laborers/Freight/Stock/Material Movers, Hand	111,616	119,223	7,607	6.8%	761	5,718	9,868	16,347	\$12.92
53-7063	Machine Feeders and Offbearers	3,993	3,899	-94	-2.4%	-9	212	317	520	\$11.99
53-7064	Packers and Packagers, Hand	41,664	43,514	1,850	4.4%	185	2,885	3,476	6,546	\$10.98
53-7071	Gas Compressor and Gas Pumping Station Operators	151	145	-6	-4.0%	-1	5	12	16	\$34.02
53-7072	Pump Operators, Except Wellhead Pumpers	196	215	19	9.7%	2	7	17	26	\$15.08
53-7073	Wellhead Pumpers	545	629	84	15.4%	8	21	49	78	\$18.21
53-7081	Refuse and Recyclable Material Collectors	7,230	8,207	977	13.5%	98	349	562	1,009	\$16.81
53-7121	Tank Car, Truck, and Ship Loaders	252	234	-18	-7.1%	-2	11	18	27	\$14.87
53-7199	Material Moving Workers, All Other	452	423	-29	-6.4%	-3	19	32	48	\$14.26

* Occupations with 100 or more workers.

** Certain Occupations are abbreviated.

Abbreviations:

AO = All Other

FL Sup/Mgrs = FirstLine Supervisors/Managers

M/P = Metal and Plastic

PS = Postsecondary

O/T = Operators and Tenders

S/O/T = Setters, Operators and Tenders

† National Wages

†† Certain occupations only report wages at the annual level - for elementary and secondary teachers this typically reflects a 9 1/2 month school year.

††† Annual National Wages

N/A This wage is equal or greater than \$100 per hour or \$208,000 per year.

▲ Wage data unavailable – OES consolidated these occupations in 2017.

*** Wage estimates are based on Ohio's OES surveys.

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, September 2018.

Appendix Table K
Ohio Occupational Education and Training Classification

Code	Occupational Title**	Typical Education**** Needed for Entry	Work Experience in a Related Occupation	Typical On-The-Job Training Needed to Attain Competency in the Occupation	Median Wage*** May 2017
00-0000	Total, All Occupations				\$17.55
11-0000	Management Occupations				\$45.76
11-1011	Chief Executives	Bachelor's degree	5 years or more	None	\$91.62
11-1021	General and Operations Managers	Bachelor's degree	5 years or more	None	\$44.77
11-1031	Legislators	Bachelor's degree	Less than 5 years	None	\$19,190 ††
11-2011	Advertising and Promotions Managers	Bachelor's degree	Less than 5 years	None	\$39.96
11-2021	Marketing Managers	Bachelor's degree	5 years or more	None	\$57.03
11-2022	Sales Managers	Bachelor's degree	Less than 5 years	None	\$56.88
11-2031	Public Relations Managers	Bachelor's degree	5 years or more	None	\$48.33
11-3011	Administrative Services Managers	Bachelor's degree	Less than 5 years	None	\$40.52
11-3021	Computer and Information Systems Managers	Bachelor's degree	5 years or more	None	\$59.26
11-3031	Financial Managers	Bachelor's degree	5 years or more	None	\$55.81
11-3051	Industrial Production Managers	Bachelor's degree	5 years or more	None	\$46.23
11-3061	Purchasing Managers	Bachelor's degree	5 years or more	None	\$54.81
11-3071	Transportation, Storage, and Distribution Managers	High school diploma or equivalent	5 years or more	None	\$41.85
11-3111	Compensation and Benefits Managers	Bachelor's degree	5 years or more	None	\$53.53
11-3121	Human Resources Managers	Bachelor's degree	5 years or more	None	\$50.18
11-3131	Training and Development Managers	Bachelor's degree	5 years or more	None	\$47.66
11-9013	Farmers, Ranchers, and Other Agricultural Managers	High school diploma or equivalent	5 years or more	None	\$35.11
11-9021	Construction Managers	Bachelor's degree	None	Moderate-term on-the-job training	\$43.66
11-9031	Education Admin., Pre & Child Care Center/Prog.	Bachelor's degree	Less than 5 years	None	\$18.60
11-9032	Education Admin., Elem. & Secondary School	Master's degree	5 years or more	None	\$86,230 ††
11-9033	Education Administrators, Postsecondary	Master's degree	Less than 5 years	None	\$44.19
11-9039	Education Administrators, All Other	Bachelor's degree	Less than 5 years	None	\$37.76
11-9041	Engineering Managers	Bachelor's degree	5 years or more	None	\$60.84
11-9051	Food Service Managers	High school diploma or equivalent	Less than 5 years	None	\$23.28
11-9061	Funeral service Managers	Associate's degree	Less than 5 years	None	\$39.07
11-9081	Lodging Managers	High school diploma or equivalent	Less than 5 years	None	\$19.49
11-9111	Medical and Health Services Managers	Bachelor's degree	Less than 5 years	None	\$43.67
11-9121	Natural Sciences Managers	Bachelor's degree	5 years or more	None	\$58.40
11-9131	Postmasters and Mail Superintendents	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$36.53
11-9141	Property, Real Estate & Community Assn Mgrs	High school diploma or equivalent	Less than 5 years	None	\$24.32
11-9151	Social and Community Service Managers	Bachelor's degree	Less than 5 years	None	\$32.21
11-9161	Emergency Management Directors	Bachelor's degree	5 years or more	None	\$30.82
11-9199	Managers, All Other	Bachelor's degree	Less than 5 years	None	\$47.61
13-0000	Business & Financial Operations Occupations				\$30.20
13-1011	Agents/Business Mgrs. Artist/Performer/Athlete	Bachelor's degree	Less than 5 years	None	\$21.33
13-1021	Purchasing Agents and Buyers, Farm Products	Bachelor's degree	None	Moderate-term on-the-job training	▲
13-1022	Wholesale and Retail Buyers, Except Farm Products	Bachelor's degree	None	Moderate-term on-the-job training	▲
13-1023	Purchasing Agents, ex. Whole., Retail, & Farm	Bachelor's degree	None	Moderate-term on-the-job training	▲
13-1031	Claims Adjusters, Examiners, and Investigators	High school diploma or equivalent	None	Long-term on-the-job training	\$31.10
13-1032	Insurance Appraisers, Auto Damage	Postsecondary non-degree award	None	Moderate-term on-the-job training	\$28.69
13-1041	Compl. Off., ex. Agric, Con, Hlth/Safety, & Trans.	Bachelor's degree	None	Moderate-term on-the-job training	\$28.46
13-1051	Cost Estimators	Bachelor's degree	None	Moderate-term on-the-job training	\$28.53

**Appendix Table K – cont'd.
Ohio Occupational Education and Training Classification**

Code	Occupational Title**	Typical Education**** Needed for Entry	Work Experience in a Related Occupation	Typical On-The-Job Training Needed to Attain Competency in the Occupation	Median Wage*** May 2017
13-1071	Human Resource Specialists	Bachelor's degree	None	None	\$27.14
13-1075	Labor Relations Specialists	Bachelor's degree	Less than 5 years	None	\$9.51
13-1081	Logisticians	Bachelor's degree	None	None	\$35.46
13-1111	Management Analysts	Bachelor's degree	Less than 5 years	None	\$35.71
13-1121	Meeting and Convention Planners	Bachelor's degree	None	None	\$21.25
13-1131	Fundraisers	Bachelor's degree	None	None	\$24.74
13-1141	Compensation, Benefits, and Job Analysis Specialists	Bachelor's degree	Less than 5 years	None	\$27.83
13-1151	Training and Development Specialists	Bachelor's degree	Less than 5 years	None	\$26.47
13-1161	Market Research Analysts and Marketing Specialists	Bachelor's degree	None	None	\$28.87
13-1199	Business Operations Specialists, All Other	Bachelor's degree	None	None	\$31.24
13-2011	Accountants and Auditors	Bachelor's degree	None	None	\$31.02
13-2021	Appraisers and Assessors of Real Estate	Bachelor's degree	None	Long-term on-the-job training	\$26.76
13-2041	Credit Analysts	Bachelor's degree	None	None	\$32.39
13-2051	Financial Analysts	Bachelor's degree	None	None	\$34.98
13-2052	Personal Financial Advisors	Bachelor's degree	None	Long-term on-the-job training	\$39.12
13-2053	Insurance Underwriters	Bachelor's degree	None	Moderate-term on-the-job training	\$33.60
13-2061	Financial Examiners	Bachelor's degree	None	Long-term on-the-job training	\$32.70
13-2072	Loan Officers	Bachelor's degree	None	Moderate-term on-the-job training	\$31.50
13-2081	Tax Examiners, Collectors, and Revenue Agents	Bachelor's degree	None	Moderate-term on-the-job training	\$28.94
13-2082	Tax Preparers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.03
13-2099	Financial Specialists, All Other	Bachelor's degree	None	Moderate-term on-the-job training	\$35.22
15-0000	Computer & Mathematical Occupations				\$36.89
15-1111	Computer & Information Research Scientists	Master's degree	None	None	\$50.96
15-1121	Computer Systems Analysts	Bachelor's degree	None	None	\$40.67
15-1122	Information Security Analysts	Bachelor's degree	Less than 5 years	None	\$42.62
15-1131	Computer Programmers	Bachelor's degree	None	None	\$33.21
15-1132	Software Developers, Applications	Bachelor's degree	None	None	\$42.89
15-1133	Software Developers, Systems Software	Bachelor's degree	None	None	\$45.64
15-1134	Web Developers	Associate's degree	None	None	\$27.30
15-1141	Database Administrators	Bachelor's degree	None	None	\$40.03
15-1142	Network and Comp. Systems Architects and Admins	Bachelor's degree	None	None	\$35.21
15-1143	Computer Network Architects	Bachelor's degree	5 years or more	None	\$45.80
15-1151	Computer User Support Specialists	Some college, no degree	None	None	\$21.68
15-1152	Computer Network Support Specialists	Associate's degree	None	None	\$27.76
15-1199	Computer Occupations, All Other	Bachelor's degree	None	None	\$38.15
15-2011	Actuaries	Bachelor's degree	None	Long-term on-the-job training	\$45.23
15-2031	Operations Research Analysts	Bachelor's degree	None	None	\$38.74
15-2041	Statisticians	Master's degree	None	None	\$40.31
17-0000	Architecture & Engineering Occupations				\$35.60
17-1011	Architects, Except Landscape and Naval	Bachelor's degree	None	Internship/residency	\$34.68
17-1012	Landscape Architects	Bachelor's degree	None	Internship/residency	\$28.36
17-1022	Surveyors	Bachelor's degree	None	Internship/residency	\$28.08
17-2011	Aerospace Engineers	Bachelor's degree	None	None	\$54.95
17-2031	Biomedical Engineers	Bachelor's degree	None	None	\$35.20

**Appendix Table K – cont'd.
Ohio Occupational Education and Training Classification**

Code	Occupational Title**	Typical Education**** Needed for Entry	Work Experience in a Related Occupation	Typical On-The-Job Training Needed to Attain Competency in the Occupation	Median Wage*** May 2017
17-2041	Chemical Engineers	Bachelor's degree	None	None	\$44.13
17-2051	Civil Engineers	Bachelor's degree	None	None	\$37.75
17-2061	Computer Hardware Engineers	Bachelor's degree	None	None	\$47.68
17-2071	Electrical Engineers	Bachelor's degree	None	None	\$39.73
17-2072	Electronics Engineers, Except Computer	Bachelor's degree	None	None	\$45.17
17-2081	Environmental Engineers	Bachelor's degree	None	None	\$44.47
17-2111	Health & Safety Engineers, ex. Mining Safety	Bachelor's degree	None	None	\$42.33
17-2112	Industrial Engineers	Bachelor's degree	None	None	\$38.24
17-2131	Materials Engineers	Bachelor's degree	None	None	\$42.56
17-2141	Mechanical Engineers	Bachelor's degree	None	None	\$36.71
17-2151	Mining & Geological Engineers, Inc Mining Safety Eng.	Bachelor's degree	None	None	\$38.17
17-2171	Petroleum Engineers	Bachelor's degree	None	None	\$38.94
17-2199	Engineers, All Other	Bachelor's degree	None	None	\$41.94
17-3011	Architectural and Civil Drafters	Associate's degree	None	None	\$24.09
17-3012	Electrical and Electronics Drafters	Associate's degree	None	None	\$25.44
17-3013	Mechanical Drafters	Associate's degree	None	None	\$25.44
17-3019	Drafters, All Other	Associate's degree	None	None	\$24.29
17-3021	Aerospace Engineering and Operations Technicians	Associate's degree	None	None	\$33.59
17-3022	Civil Engineering Technicians	Associate's degree	None	None	\$26.32
17-3023	Electrical and Electronic Engineering Technicians	Associate's degree	None	None	\$28.50
17-3024	Electro-Mechanical Technicians	Associate's degree	None	None	\$25.19
17-3025	Environmental Engineering Technicians	Associate's degree	None	None	\$23.07
17-3026	Industrial Engineering Technicians	Associate's degree	None	None	\$25.94
17-3027	Mechanical Engineering Technicians	Associate's degree	None	None	\$26.22
17-3029	Engineering Technicians, Except Drafters, All Other	Associate's degree	None	None	\$27.18
17-3031	Surveying and Mapping Technicians	High school diploma or equivalent	None	Moderate-term on-the-job training	\$20.02
19-0000	Life, Physical, & Social Science Occupations				\$28.91
19-1012	Food Scientists and Technologists	Bachelor's degree	None	None	\$31.24
19-1013	Soil and Plant Scientists	Bachelor's degree	None	None	\$22.58
19-1022	Microbiologists	Bachelor's degree	None	None	\$29.27
19-1023	Zoologists and Wildlife Biologists	Bachelor's degree	None	None	\$32.66
19-1029	Biological Scientists, All Other	Bachelor's degree	None	None	\$25.96
19-1031	Conservation Scientists	Bachelor's degree	None	None	\$24.46
19-1032	Foresters	Bachelor's degree	None	None	\$28.72
19-1041	Epidemiologists	Master's degree	None	None	\$30.20
19-1042	Medical Scientists, Except Epidemiologists	Doctoral or professional degree	None	None	\$36.17
19-2012	Physicists	Doctoral or professional degree	None	None	\$54.37
19-2031	Chemists	Bachelor's degree	None	None	\$33.50
19-2032	Materials Scientists	Bachelor's degree	None	None	\$41.70
19-2041	Environmental Scientists/Specialists, inc. Health	Bachelor's degree	None	None	\$32.25
19-2042	Geoscientists, Except Hydrologists and Geographers	Bachelor's degree	None	None	\$32.60
19-2043	Hydrologists	Bachelor's degree	None	None	\$37.69
19-2099	Physical Scientists, All Other	Bachelor's degree	None	None	\$48.58
19-3011	Economists	Master's degree	None	None	\$48.16

**Appendix Table K – cont'd.
Ohio Occupational Education and Training Classification**

Code	Occupational Title**	Typical Education**** Needed for Entry	Work Experience in a Related Occupation	Typical On-The-Job Training Needed to Attain Competency in the Occupation	Median Wage*** May 2017
19-3022	Survey Researchers	Master's degree	None	None	\$25.03
19-3031	Clinical, Counseling, and School Psychologists	Doctoral or professional degree	None	Internship/residency	\$33.43
19-3039	Psychologists, All Other	Master's degree	None	Internship/residency	\$46.87
19-3051	Urban and Regional Planners	Master's degree	None	None	\$30.60
19-3091	Anthropologists and Archeologists	Master's degree	None	None	\$28.45
19-3099	Social Scientists and Related Workers, All Other	Bachelor's degree	None	None	\$34.73
19-4011	Agricultural and Food Science Technicians	Associate's degree	None	Moderate-term on-the-job training	\$17.68
19-4021	Biological Technicians	Bachelor's degree	None	None	\$19.88
19-4031	Chemical Technicians	Associate's degree	None	Moderate-term on-the-job training	\$21.32
19-4061	Social Science Research Assistants	Bachelor's degree	None	None	\$18.77
19-4091	Environ. Science & Protection Tech., inc. Health	Associate's degree	None	None	\$20.26
19-4092	Forensic Science Technicians	Bachelor's degree	None	Moderate-term on-the-job training	\$30.34
19-4093	Forest and Conservation Technicians	Associate's degree	None	None	\$20.10
19-4099	Life, Physical, & Social Science Tech., All Other	Associate's degree	None	None	\$24.06
21-0000	Community & Social Service Occupations				\$20.52
21-1011	Substance Abuse & Behavioral Dis. Counselors	Bachelor's degree	None	None	▲
21-1012	Educational, Vocational, and School Counselors	Master's degree	None	None	\$26.02
21-1013	Marriage and Family Therapists	Master's degree	None	Internship/residency	\$23.44
21-1014	Mental Health Counselors	Master's degree	None	Internship/residency	▲
21-1015	Rehabilitation Counselors	Master's degree	None	None	\$16.74
21-1019	Counselors, All Other	Master's degree	None	None	\$21.23
21-1021	Child, Family, and School Social Workers	Bachelor's degree	None	None	\$19.28
21-1022	Medical and Public Health Social Workers	Master's degree	None	Internship/residency	\$26.65
21-1023	Mental Health and Substance Abuse Social Workers	Master's degree	None	Internship/residency	\$18.45
21-1029	Social Workers, All Other	Bachelor's degree	None	None	\$21.75
21-1091	Health Educators	Bachelor's degree	None	None	\$26.80
21-1092	Probation Officers & Correct. Treatment Spec.	Bachelor's degree	None	Short-term on-the-job training	\$23.28
21-1093	Social and Human Service Assistants	High school diploma or equivalent	None	Short-term on-the-job training	\$15.10
21-1094	Community Health Workers	High school diploma or equivalent	None	Short-term on-the-job training	\$17.94
21-1099	Community and Social Service Specialists, All Other	Bachelor's degree	None	None	\$19.30
21-2011	Clergy	Bachelor's degree	None	Moderate-term on-the-job training	\$20.99
21-2021	Directors, Religious Activities and Education	Bachelor's degree	Less than 5 years	None	\$19.50
21-2099	Religious Workers, All Other	Bachelor's degree	None	None	\$12.42
23-0000	Legal Occupations				\$31.56
23-1011	Lawyers	Doctoral or professional degree	None	None	\$45.66
23-1012	Judicial Law Clerks	Doctoral or professional degree	None	None	\$21.61
23-2021	Admin. Law Judges & Adjudicators & Hearing Officers	Doctoral or professional degree	5 years or more	Short-term on-the-job training	\$45.31
23-1022	Arbitrators, Mediators, and Conciliators	Bachelor's degree	Less than 5 years	Moderate-term on-the-job training	\$30.92
23-1023	Judges, Magistrate Judges, and Magistrates	Doctoral or professional degree	5 years or more	Short-term on-the-job training	\$31.86
23-2011	Paralegals and Legal Assistants	Associate's degree	None	None	\$21.24
23-2091	Court Reporters	Postsecondary non-degree award	None	Short-term on-the-job training	\$22.47
23-2093	Title Examiners, Abstractors, and Searchers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$22.13
23-2099	Legal Support Workers, All Other	Associate's degree	None	None	\$24.79

**Appendix Table K – cont'd.
Ohio Occupational Education and Training Classification**

Code	Occupational Title**	Typical Education**** Needed for Entry	Work Experience in a Related Occupation	Typical On-The-Job Training Needed to Attain Competency in the Occupation	Median Wage*** May 2017
25-0000	<i>Education, Training, & Library Occupations</i>				\$24.48
25-1011	Business Teachers, Postsecondary	Doctoral or professional degree	None	None	\$82,030 ††
25-1021	Computer Science Teachers, Postsecondary	Doctoral or professional degree	None	None	\$92,660 ††
25-1022	Mathematical Science Teachers, Postsecondary	Doctoral or professional degree	None	None	\$76,310 ††
25-1031	Architecture Teachers, Postsecondary	Doctoral or professional degree	None	None	\$76,160 ††
25-1032	Engineering Teachers, Postsecondary	Doctoral or professional degree	None	None	\$97,300 ††
25-1042	Biological Science Teachers, Postsecondary	Doctoral or professional degree	None	None	\$81,590 ††
25-1051	Atmos., Earth, Marine & Space Sci. Teachers, PS	Doctoral or professional degree	None	None	\$92,970 ††
25-1052	Chemistry Teachers, Postsecondary	Doctoral or professional degree	None	None	\$84,960 ††
25-1053	Environmental Science Teachers, Postsecondary	Doctoral or professional degree	None	None	\$82,520 ††
25-1054	Physics Teachers, Postsecondary	Doctoral or professional degree	None	None	\$96,020 ††
25-1061	Anthropology & Archeology Teachers, Postsecondary	Doctoral or professional degree	None	None	\$81,390 ††
25-1062	Area/Ethnic/Cultural Studies Teachers, Postsecondary	Doctoral or professional degree	None	None	\$71,130 ††
25-1063	Economics Teachers, Postsecondary	Doctoral or professional degree	None	None	\$96,860 ††
25-1064	Geography Teachers, Postsecondary	Doctoral or professional degree	None	None	\$88,130 ††
25-1065	Political Science Teachers, Postsecondary	Doctoral or professional degree	None	None	\$82,180 ††
25-1066	Psychology Teachers, Postsecondary	Doctoral or professional degree	None	None	\$70,490 ††
25-1067	Sociology Teachers, Postsecondary	Doctoral or professional degree	None	None	\$77,720 ††
25-1069	Social Sciences Teachers, Postsecondary, All Other	Doctoral or professional degree	None	None	\$74,420 ††
25-1071	Health Specialties Teachers, Postsecondary	Doctoral or professional degree	Less than 5 years	None	\$84,980 ††
25-1072	Nursing Instructors and Teachers, Postsecondary	Doctoral or professional degree	Less than 5 years	None	\$67,990 ††
25-1081	Education Teachers, Postsecondary	Doctoral or professional degree	Less than 5 years	None	\$61,490 ††
25-1082	Library Science Teachers, Postsecondary	Doctoral or professional degree	None	None	\$64,310 ††
25-1111	Criminal Justice/Law Enforcement Teachers, PS	Doctoral or professional degree	None	None	\$61,350 ††
25-1112	Law Teachers, Postsecondary	Doctoral or professional degree	Less than 5 years	None	\$103,310 ††
25-1113	Social Work Teachers, Postsecondary	Doctoral or professional degree	None	None	\$62,170 ††
25-1121	Art, Drama, and Music Teachers, Postsecondary	Master's degree	None	None	\$65,330 ††
25-1122	Communications Teachers, Postsecondary	Doctoral or professional degree	None	None	\$59,480 ††
25-1123	English Language/Literature Teachers, Postsecondary	Doctoral or professional degree	None	None	\$64,320 ††
25-1124	Foreign Language/Literature Teachers, Postsecondary	Doctoral or professional degree	None	None	\$62,140 ††
25-1125	History Teachers, Postsecondary	Doctoral or professional degree	None	None	\$74,100 ††
25-1126	Philosophy and Religion Teachers, Postsecondary	Doctoral or professional degree	None	None	\$63,670 ††
25-1191	Graduate Teaching Assistants	Bachelor's degree	None	None	\$47,030 ††
25-1194	Vocational Education Teachers, Postsecondary	Bachelor's degree	Less than 5 years	None	\$27.41
25-2011	Preschool Teachers, Except Special Education	Associate's degree	None	None	\$11.80
25-2012	Kindergarten Teachers, Except Special Education	Bachelor's degree	None	None	\$54,640 ††
25-2021	Elementary School Teachers, ex. Special Ed.	Bachelor's degree	None	None	\$59,560 ††
25-2022	Middle School Teachers, ex. Special & Voc. Ed.	Bachelor's degree	None	None	\$59,810 ††
25-2023	Vocational Education Teachers, Middle School	Bachelor's degree	Less than 5 years	None	\$68,630 ††
25-2031	Secondary Sch. Teachers, ex. Spec. & Voc. Ed.	Bachelor's degree	None	None	\$59,990 ††
25-2032	Career/Technical Education Teachers, Secondary School	Bachelor's degree	Less than 5 years	None	\$62,750 ††
25-2051	Special Education Teachers, Preschool	Bachelor's degree	None	None	\$55,700 ††
25-2052	Special Education Teachers, Kindergarten/Elementary	Bachelor's degree	None	None	\$56,030 ††
25-2053	Special Education Teachers, Middle School	Bachelor's degree	None	None	\$59,530 ††

**Appendix Table K – cont'd.
Ohio Occupational Education and Training Classification**

Code	Occupational Title**	Typical Education**** Needed for Entry	Work Experience in a Related Occupation	Typical On-The-Job Training Needed to Attain Competency in the Occupation	Median Wage*** May 2017
25-2054	Special Education Teachers, Secondary School	Bachelor's degree	None	None	\$56,730 ††
25-2059	Special Education Teachers, All Other	Bachelor's degree	None	None	\$36,780 ††
25-3011	Adult Literacy, Remedial Ed., & GED Teachers	Bachelor's degree	None	None	\$23.82
25-3021	Self-Enrichment Education Teachers	High school diploma or equivalent	Less than 5 years	None	\$16.43
25-3097	Teachers and Instructors, All Other except Substitute Teachers	Bachelor's degree	None	None	\$38,040 ††
25-3098	Substitute Teachers	Bachelor's degree	None	None	\$13.05
25-4011	Archivists	Master's degree	None	None	\$19.24
25-4012	Curators	Master's degree	None	None	\$23.21
25-4013	Museum Technicians and Conservators	Bachelor's degree	None	None	\$16.91
25-4021	Librarians	Master's degree	None	None	\$26.12
25-4031	Library Technicians	Postsecondary non-degree award	None	None	\$14.31
25-9031	Instructional Coordinators	Master's degree	5 years or more	None	\$29.38
25-9041	Teacher Assistants	Some college, no degree	None	None	\$25,520 ††
25-9099	Education, Training, and Library Workers, All Other	Bachelor's degree	None	None	\$19.36
27-0000	Arts, Design, Entertainment, Sports, & Media Occupations				\$18.97
27-1011	Art Directors	Bachelor's degree	5 years or more	None	\$38.80
27-1012	Craft Artists	No formal educational credential	None	Long-term on-the-job training	\$13.02
27-1013	Fine Artists, inc. Painters, Sculptors & Illustrators	Bachelor's degree	None	Long-term on-the-job training	\$16.16
27-1014	Multi-Media Artists and Animators	Bachelor's degree	None	None	\$25.50
27-1021	Commercial and Industrial Designers	Bachelor's degree	None	None	\$28.63
27-1023	Floral Designers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$11.50
27-1024	Graphic Designers	Bachelor's degree	None	None	\$21.51
27-1025	Interior Designers	Bachelor's degree	None	None	\$21.08
27-1026	Merchandise Displayers and Window Trimmers	High school diploma or equivalent	None	Short-term on-the-job training	\$13.62
27-1027	Set and Exhibit Designers	Bachelor's degree	None	None	\$21.36
27-1029	Designers, All Other	Bachelor's degree	None	None	\$27.66
27-2011	Actors	Some college, no degree	None	Long-term on-the-job training	\$9.43
27-2012	Producers and Directors	Bachelor's degree	Less than 5 years	None	\$23.40
27-2021	Athletes and Sports Competitors	No formal educational credential	None	Long-term on-the-job training	\$40,990 ††
27-2022	Coaches and Scouts	Bachelor's degree	None	None	\$21,800 ††
27-2023	Umpires, Referees, and Other Sports Officials	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19,300 ††
27-2031	Dancers	No formal educational credential	None	Long-term on-the-job training	\$14.63
27-2041	Music Directors and Composers	Bachelor's degree	Less than 5 years	None	\$29.70
27-2042	Musicians and Singers	No formal educational credential	None	Long-term on-the-job training	\$24.42
27-2099	Entertainers & Performers, Sports & Rel. Work., AO	No formal educational credential	None	Short-term on-the-job training	\$19.57
27-3011	Radio and Television Announcers	Bachelor's degree	None	None	\$15.56
27-3022	Reporters and Correspondents	Bachelor's degree	None	None	\$15.53
27-3031	Public Relations Specialists	Bachelor's degree	None	None	\$26.86
27-3041	Editors	Bachelor's degree	Less than 5 years	None	\$24.77
27-3042	Technical Writers	Bachelor's degree	Less than 5 years	Short-term on-the-job training	\$29.53
27-3043	Writers and Authors	Bachelor's degree	None	Long-term on-the-job training	\$21.36
27-3091	Interpreters and Translators	Bachelor's degree	None	None	\$19.78
27-3099	Media and Communication Workers, All Other	High school diploma or equivalent	None	Short-term on-the-job training	\$21.89
27-4011	Audio and Video Equipment Technicians	Postsecondary non-degree award	None	Short-term on-the-job training	\$16.30

**Appendix Table K – cont'd.
Ohio Occupational Education and Training Classification**

Code	Occupational Title**	Typical Education**** Needed for Entry	Work Experience in a Related Occupation	Typical On-The-Job Training Needed to Attain Competency in the Occupation	Median Wage*** May 2017
27-4012	Broadcast Technicians	Associate's degree	None	Short-term on-the-job training	\$14.88
27-4014	Sound Engineering Technicians	Postsecondary non-degree award	None	Short-term on-the-job training	\$19.77
27-4021	Photographers	High school diploma or equivalent	None	Long-term on-the-job training	\$13.56
27-4031	Camera Operators, TV, Video & Motion Picture	Bachelor's degree	None	None	\$25.54
27-4032	Film and Video Editors	Bachelor's degree	None	None	\$20.74
27-4099	Media & Communication Equip. Workers, AO	High school diploma or equivalent	None	Short-term on-the-job training	\$28.11
29-0000	Healthcare Practitioners & Technical Occupations				\$28.78
29-1011	Chiropractors	Doctoral or professional degree	None	None	\$37.37
29-1021	Dentists, General	Doctoral or professional degree	None	None	\$84.51
29-1022	Oral and Maxillofacial Surgeons	Doctoral or professional degree	None	Internship/residency	N/A
29-1023	Orthodontists	Doctoral or professional degree	None	Internship/residency	N/A
29-1029	Dentists, All Other Specialists	Doctoral or professional degree	None	Internship/residency	\$91.75 †††
29-1031	Dietitians and Nutritionists	Bachelor's degree	None	Internship/residency	\$27.59
29-1041	Optometrists	Doctoral or professional degree	None	None	\$55.58
29-1051	Pharmacists	Doctoral or professional degree	None	None	\$57.98
29-1061	Anesthesiologists	Doctoral or professional degree	None	Internship/residency	N/A
29-1062	Family and General Practitioners	Doctoral or professional degree	None	Internship/residency	\$91.12
29-1063	Internists, General	Doctoral or professional degree	None	Internship/residency	\$92.75 †
29-1064	Obstetricians and Gynecologists	Doctoral or professional degree	None	Internship/residency	N/A
29-1065	Pediatricians, General	Doctoral or professional degree	None	Internship/residency	\$75.41
29-1066	Psychiatrists	Doctoral or professional degree	None	Internship/residency	\$89.33
29-1067	Surgeons	Doctoral or professional degree	None	Internship/residency	N/A
29-1069	Physicians and Surgeons, All Other	Doctoral or professional degree	None	Internship/residency	N/A
29-1071	Physician Assistants	Master's degree	None	None	\$49.40
29-1081	Podiatrists	Doctoral or professional degree	None	Internship/residency	\$60.33
29-1122	Occupational Therapists	Master's degree	None	None	\$40.13
29-1123	Physical Therapists	Doctoral or professional degree	None	None	\$41.25
29-1124	Radiation Therapists	Associate's degree	None	None	\$35.79
29-1125	Recreational Therapists	Bachelor's degree	None	None	\$22.57
29-1126	Respiratory Therapists	Associate's degree	None	None	\$26.49
29-1127	Speech-Language Pathologists	Master's degree	None	Internship/residency	\$35.65
29-1128	Exercise Physiologists	Bachelor's degree	None	None	\$22.85
29-1129	Therapists, All Other	Bachelor's degree	None	None	\$31.55
29-1131	Veterinarians	Doctoral or professional degree	None	None	\$44.27
29-1141	Registered Nurses	Bachelor's degree	None	None	\$30.43
29-1151	Nurse Anesthetists	Master's degree	None	None	\$72.73
29-1161	Nurse Midwives	Master's degree	None	None	\$46.21
29-1171	Nurse Practitioners	Master's degree	None	None	\$47.65
29-1181	Audiologists	Doctoral or professional degree	None	None	\$34.07
29-1199	Health Diagnosing and Treating Practitioners, All Other	Master's degree	None	None	\$38.03
29-2011	Medical and Clinical Laboratory Technologists	Bachelor's degree	None	None	▲
29-2012	Medical and Clinical Laboratory Technicians	Associate's degree	None	None	▲
29-2021	Dental Hygienists	Associate's degree	None	None	\$32.74
29-2031	Cardiovascular Technologists and Technicians	Associate's degree	None	None	\$26.50

**Appendix Table K – cont'd.
Ohio Occupational Education and Training Classification**

Code	Occupational Title**	Typical Education**** Needed for Entry	Work Experience in a Related Occupation	Typical On-The-Job Training Needed to Attain Competency in the Occupation	Median Wage*** May 2017
29-2032	Diagnostic Medical Sonographers	Associate's degree	None	None	\$30.30
29-2033	Nuclear Medicine Technologists	Associate's degree	None	None	\$33.70
29-2034	Radiologic Technologists	Associate's degree	None	None	\$26.38
29-2035	Magnetic Resonance Imaging Technologists	Associate's degree	Less than 5 years	None	\$31.12
29-2041	Emergency Medical Technicians and Paramedics	Postsecondary non-degree award	None	None	\$14.11
29-2051	Dietetic Technicians	Associate's degree	None	None	\$14.23
29-2052	Pharmacy Technicians	High school diploma or equivalent	None	Moderate-term on-the-job training	\$13.82
29-2053	Psychiatric Technicians	Postsecondary non-degree award	Less than 5 years	Short-term on-the-job training	\$15.90
29-2055	Surgical Technologists	Postsecondary non-degree award	None	None	\$20.67
29-2056	Veterinary Technologists and Technicians	Associate's degree	None	None	\$15.12
29-2057	Ophthalmic Medical Technicians	Postsecondary non-degree award	None	None	\$17.03
29-2061	Licensed Practical and Licensed Vocational Nurses	Postsecondary non-degree award	None	None	\$20.21
29-2071	Medical Records and Health Information Technicians	Postsecondary non-degree award	None	None	\$18.09
29-2081	Opticians, Dispensing	High school diploma or equivalent	None	Long-term on-the-job training	\$17.98
29-2092	Hearing Aid Specialists	High school diploma or equivalent	None	Moderate-term on-the-job training	\$27.84
29-2099	Health Technologists and Technicians, All Other	Postsecondary non-degree award	None	None	\$18.25
29-9011	Occupational Health and Safety Specialists	Bachelor's degree	None	None	\$33.67
29-9012	Occupational Health and Safety Technicians	High school diploma or equivalent	None	Moderate-term on-the-job training	\$24.56
29-9091	Athletic Trainers	Bachelor's degree	None	None	\$46,570 ††
29-9092	Genetic Counselors	Master's degree	None	None	\$32.02
29-9099	Healthcare Practitioners and Technical Workers, All Other	Postsecondary non-degree award	None	None	\$27.35
31-0000	Healthcare Support Occupations				\$12.32
31-1011	Home Health Aides	High school diploma or equivalent	None	Short-term on-the-job training	\$10.33
31-1013	Psychiatric Aides	High school diploma or equivalent	None	Short-term on-the-job training	\$16.36
31-1014	Nursing Assistants	Postsecondary non-degree award	None	None	\$12.54
31-1015	Orderlies	High school diploma or equivalent	None	Short-term on-the-job training	\$12.36
31-2011	Occupational Therapist Assistants	Associate's degree	None	None	\$28.19
31-2021	Physical Therapist Assistants	Associate's degree	None	None	\$27.63
31-2022	Physical Therapist Aides	High school diploma or equivalent	None	Short-term on-the-job training	\$13.10
31-9011	Massage Therapists	Postsecondary non-degree award	None	None	\$16.58
31-9091	Dental Assistants	Postsecondary non-degree award	None	None	\$17.58
31-9092	Medical Assistants	Postsecondary non-degree award	None	None	\$14.72
31-9093	Medical Equipment Preparers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.92
31-9094	Medical Transcriptionists	Postsecondary non-degree award	None	None	\$17.57
31-9095	Pharmacy Aides	High school diploma or equivalent	None	Short-term on-the-job training	\$12.77
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	High school diploma or equivalent	None	Short-term on-the-job training	\$11.72
31-9097	Phlebotomists	Postsecondary non-degree award	None	None	\$15.56
31-9099	Healthcare Support Workers, All Other	High school diploma or equivalent	None	None	\$16.26
33-0000	Protective Service Occupations				\$19.18
33-1011	First-Line Supervisors/Mgrs of Correctional Officers	High school diploma or equivalent	Less than 5 years	None	\$30.98
33-1012	First-Line Superv./Mgrs of Police & Detectives	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$38.22
33-1021	FL Sup/Mgrs of Fire Fighting & Prev. Workers	Postsecondary non-degree award	Less than 5 years	Moderate-term on-the-job training	\$34.20
33-1099	First-Line Sup/Mgrs, Protective Serv. Work., AO	High school diploma or equivalent	Less than 5 years	None	\$18.84
33-2011	Fire Fighters	Postsecondary non-degree award	None	Long-term on-the-job training	\$22.29

Appendix Table K – cont'd.
Ohio Occupational Education and Training Classification

Code	Occupational Title**	Typical Education**** Needed for Entry	Work Experience in a Related Occupation	Typical On-The-Job Training Needed to Attain Competency in the Occupation	Median Wage*** May 2017
33-3011	Bailiffs	High school diploma or equivalent	None	Moderate-term on-the-job training	\$21.20
33-3012	Correctional Officers and Jailers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$20.81
33-3021	Detectives and Criminal Investigators	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$31.49
33-3031	Fish and Game Wardens	Bachelor's degree	None	Moderate-term on-the-job training	\$28.99
33-3041	Parking Enforcement Workers	High school diploma or equivalent	None	Short-term on-the-job training	\$18.22
33-3051	Police and Sheriff's Patrol Officers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$29.21
33-3052	Transit and Railroad Police	High school diploma or equivalent	None	Moderate-term on-the-job training	\$30.00
33-9011	Animal Control Workers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.63
33-9021	Private Detectives and Investigators	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$17.97
33-9031	Gaming Surveillance Officers and Gaming Investigators	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$23.43
33-9032	Security Guards	High school diploma or equivalent	None	Short-term on-the-job training	\$11.95
33-9091	Crossing Guards	No formal educational credential	None	Short-term on-the-job training	\$12.52
33-9092	Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers	No formal educational credential	None	Short-term on-the-job training	\$9.29
33-9093	Transportation Security Screeners	High school diploma or equivalent	None	Short-term on-the-job training	\$18.62
33-9099	Protective Service Workers, All Other	High school diploma or equivalent	None	Short-term on-the-job training	\$13.17
35-0000	Food Preparation & Serving Related Occupations				\$9.45
35-1011	Chefs and Head Cooks	High school diploma or equivalent	5 years or more	None	\$17.95
35-1012	FL Sup/Mgrs of Food Prep. & Serving Workers	High school diploma or equivalent	Less than 5 years	None	\$14.93
35-2011	Cooks, Fast Food	No formal educational credential	None	Short-term on-the-job training	\$9.38
35-2012	Cooks, Institution and Cafeteria	No formal educational credential	None	Short-term on-the-job training	\$12.12
35-2014	Cooks, Restaurant	No formal educational credential	Less than 5 years	Moderate-term on-the-job training	\$11.40
35-2015	Cooks, Short Order	No formal educational credential	None	Short-term on-the-job training	\$9.69
35-2021	Food Preparation Workers	No formal educational credential	None	Short-term on-the-job training	\$9.69
35-3011	Bartenders	No formal educational credential	None	Short-term on-the-job training	\$9.21
35-3021	Comb. Food Prep. & Serv. Work, inc. Fast Food	No formal educational credential	None	Short-term on-the-job training	\$9.21
35-3022	Counter Attend., Café/Food Concess/Coffee Sh.	No formal educational credential	None	Short-term on-the-job training	\$9.38
35-3031	Waiters and Waitresses	No formal educational credential	None	Short-term on-the-job training	\$9.25
35-3041	Food Servers, Nonrestaurant	No formal educational credential	None	Short-term on-the-job training	\$9.72
35-9011	Dining Room & Cafeteria Attend. & Bar Helpers	No formal educational credential	None	Short-term on-the-job training	\$9.24
35-9021	Dishwashers	No formal educational credential	None	Short-term on-the-job training	\$9.35
35-9031	Hosts & Hostesses, Rest./Lounge/Coffee Shop	No formal educational credential	None	Short-term on-the-job training	\$9.21
35-9099	Food Preparation and Serving Related Workers, All Other	No formal educational credential	None	Short-term on-the-job training	\$9.70
37-0000	Building & Grounds Cleaning & Maintenance Occupations				\$11.70
37-1011	FL Sup/Mgrs of Housekping & Janitorial Workers	High school diploma or equivalent	Less than 5 years	None	\$20.24
37-1012	FL Sup/Mgrs of Lndscap./Lawn Ser/Groundskp	High school diploma or equivalent	Less than 5 years	None	\$20.91
37-2011	Janitors & Cleaners, ex. Maids/Hseking Cleaners	No formal educational credential	None	Short-term on-the-job training	\$11.50
37-2012	Maids and Housekeeping Cleaners	No formal educational credential	None	Short-term on-the-job training	\$10.13
37-2019	Building Cleaning Workers, All Other	No formal educational credential	None	Short-term on-the-job training	\$11.52
37-2021	Pest Control Workers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.52
37-3011	Landscaping and Groundskeeping Workers	No formal educational credential	None	Short-term on-the-job training	\$12.67
37-3012	Pesticide Handlers/Sprayers/Applicators, Veg.	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.44
37-3013	Tree Trimmers and Pruners	High school diploma or equivalent	None	Short-term on-the-job training	\$17.90
37-3019	Grounds Maintenance Workers, All Other	No formal educational credential	None	Short-term on-the-job training	\$22.46

**Appendix Table K – cont'd.
Ohio Occupational Education and Training Classification**

Code	Occupational Title**	Typical Education**** Needed for Entry	Work Experience in a Related Occupation	Typical On-The-Job Training Needed to Attain Competency in the Occupation	Median Wage*** May 2017
39-0000	<i>Personal Care & Service Occupations</i>				\$10.66
39-1011	Gaming Supervisors	High school diploma or equivalent	Less than 5 years	None	▲
39-1012	Slot Supervisors	High school diploma or equivalent	Less than 5 years	None	▲
39-1021	First-Line Sup/Mgrs of Personal Serv. Workers	High school diploma or equivalent	Less than 5 years	None	\$16.67
39-2011	Animal Trainers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$12.28
39-2021	Nonfarm Animal Caretakers	High school diploma or equivalent	None	Short-term on-the-job training	\$9.86
39-3012	Gaming and Sports Book Writers and Runners	High school diploma or equivalent	None	Short-term on-the-job training	13.68
39-3031	Ushers, Lobby Attendants, and Ticket Takers	No formal educational credential	None	Short-term on-the-job training	\$9.45
39-3091	Amusement and Recreation Attendants	No formal educational credential	None	Short-term on-the-job training	\$9.30
39-3092	Costume Attendants	High school diploma or equivalent	None	Short-term on-the-job training	\$17.38
39-3093	Locker Room, Coatroom, & Dressing Room Attendants	High school diploma or equivalent	None	Short-term on-the-job training	\$9.71
39-4021	Funeral Attendants	High school diploma or equivalent	None	Short-term on-the-job training	\$11.86
39-5012	Hairdressers, Hairstylists, and Cosmetologists	Postsecondary non-degree award	None	None	\$10.86
39-5092	Manicurists and Pedicurists	Postsecondary non-degree award	None	None	\$11.23
39-5093	Shampooers	No formal educational credential	None	Short-term on-the-job training	\$9.12
39-5094	Skin Care Specialists	Postsecondary non-degree award	None	None	\$14.37
39-6011	Baggage Porters and Bellhops	High school diploma or equivalent	None	Short-term on-the-job training	\$9.45
39-6012	Concierges	High school diploma or equivalent	None	Moderate-term on-the-job training	\$11.09
39-9011	Child Care Workers	High school diploma or equivalent	None	Short-term on-the-job training	\$9.86
39-9021	Personal and Home Care Aides	High school diploma or equivalent	None	Short-term on-the-job training	\$10.61
39-9031	Fitness Trainers and Aerobics Instructors	High school diploma or equivalent	None	Short-term on-the-job training	\$12.43
39-9032	Recreation Workers	High school diploma or equivalent	None	Short-term on-the-job training	\$11.18
39-9041	Residential Advisors	High school diploma or equivalent	None	Short-term on-the-job training	\$13.28
39-9099	Personal Care and Service Workers, All Other	High school diploma or equivalent	None	Short-term on-the-job training	\$10.34
41-0000	<i>Sales & Related Occupations</i>				\$12.46
41-1011	First-Line Superv./Mgrs of Retail Sales Workers	High school diploma or equivalent	Less than 5 years	None	\$17.60
41-1012	First-Line Sup./Mgrs of Non-Retail Sales Workers	High school diploma or equivalent	Less than 5 years	None	\$31.91
41-2011	Cashiers	No formal educational credential	None	Short-term on-the-job training	\$9.31
41-2012	Gaming Change Persons and Booth Cashiers	No formal educational credential	None	Short-term on-the-job training	\$11.33
41-2021	Counter and Rental Clerks	No formal educational credential	None	Short-term on-the-job training	\$11.18
41-2022	Parts Salespersons	No formal educational credential	None	Moderate-term on-the-job training	\$13.15
41-2031	Retail Salespersons	No formal educational credential	None	Short-term on-the-job training	\$10.67
41-3011	Advertising Sales Agents	High school diploma or equivalent	None	Moderate-term on-the-job training	\$22.21
41-3021	Insurance Sales Agents	High school diploma or equivalent	None	Moderate-term on-the-job training	\$22.38
41-3031	Securities/Commodities/Fin. Serv. Sales Agents	Bachelor's degree	None	Moderate-term on-the-job training	\$29.03
41-3041	Travel Agents	High school diploma or equivalent	None	Moderate-term on-the-job training	\$14.42
41-3099	Sales Representatives, Services, All Other	High school diploma or equivalent	None	Moderate-term on-the-job training	\$23.53
41-4011	Sales Rep., Wholesale & Mfg, Tech./Sci. Prod.	Bachelor's degree	None	Moderate-term on-the-job training	\$33.84
41-4012	Sales Rep., Wholesale/Mfg, ex. Tech./Sci. Prod.	High school diploma or equivalent	None	Moderate-term on-the-job training	\$27.59
41-9011	Demonstrators and Product Promoters	No formal educational credential	None	Short-term on-the-job training	\$12.26
41-9021	Real Estate Brokers	High school diploma or equivalent	Less than 5 years	None	\$39.91
41-9022	Real Estate Sales Agents	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.57
41-9031	Sales Engineers	Bachelor's degree	None	Moderate-term on-the-job training	\$40.04

Appendix Table K – cont'd.
Ohio Occupational Education and Training Classification

Code	Occupational Title**	Typical Education**** Needed for Entry	Work Experience in a Related Occupation	Typical On-The-Job Training Needed to Attain Competency in the Occupation	Median Wage*** May 2017
41-9041	Telemarketers	No formal educational credential	None	Short-term on-the-job training	\$11.11
41-9091	Door-To-Door Sales, News/St. Vendors, & Rel.	No formal educational credential	None	Short-term on-the-job training	\$10.96
41-9099	Sales and Related Workers, All Other	High school diploma or equivalent	None	None	\$13.19
43-0000	Office & Administrative Support Occupations				\$16.22
43-1011	First-Line Sup/Mgrs of Office & Admin. Support	High school diploma or equivalent	Less than 5 years	None	\$25.52
43-2011	Switchboard Operators, Including Answering Service	High school diploma or equivalent	None	Short-term on-the-job training	\$13.06
43-2021	Telephone Operators	High school diploma or equivalent	None	Short-term on-the-job training	\$17.69
43-3011	Bill and Account Collectors	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.91
43-3021	Billing and Posting Clerks and Machine Operators	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.36
43-3031	Bookkeeping, Accounting, and Auditing Clerks	Some college, no degree	None	Moderate-term on-the-job training	\$18.13
43-3041	Gaming Cage Workers	High school diploma or equivalent	None	Short-term on-the-job training	\$13.21
43-3051	Payroll and Timekeeping Clerks	High school diploma or equivalent	None	Moderate-term on-the-job training	\$20.33
43-3061	Procurement Clerks	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.41
43-3071	Tellers	High school diploma or equivalent	None	Short-term on-the-job training	\$12.59
43-3099	Financial Clerks, All Other	High school diploma or equivalent	None	Short-term on-the-job training	\$18.08
43-4011	Brokerage Clerks	High school diploma or equivalent	None	Moderate-term on-the-job training	\$21.53
43-4021	Correspondence Clerks	High school diploma or equivalent	None	Short-term on-the-job training	\$16.68
43-4031	Court, Municipal, and License Clerks	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.38
43-4041	Credit Authorizers, Checkers, and Clerks	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.54
43-4051	Customer Service Representatives	High school diploma or equivalent	None	Short-term on-the-job training	\$15.50
43-4061	Eligibility Interviewers, Government Programs	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.85
43-4071	File Clerks	High school diploma or equivalent	None	Short-term on-the-job training	\$15.46
43-4081	Hotel, Motel, and Resort Desk Clerks	High school diploma or equivalent	None	Short-term on-the-job training	\$9.67
43-4111	Interviewers, Except Eligibility and Loan	High school diploma or equivalent	None	Short-term on-the-job training	\$15.06
43-4121	Library Assistants, Clerical	High school diploma or equivalent	None	Short-term on-the-job training	\$11.58
43-4131	Loan Interviewers and Clerks	High school diploma or equivalent	None	Short-term on-the-job training	\$17.57
43-4141	New Accounts Clerks	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.47
43-4151	Order Clerks	High school diploma or equivalent	None	Short-term on-the-job training	\$15.36
43-4161	Human Resources Assis., ex. Payroll & Timekp	Associate's degree	None	None	\$18.47
43-4171	Receptionists and Information Clerks	High school diploma or equivalent	None	Short-term on-the-job training	\$12.29
43-4181	Reservation/Trans. Ticket Agents & Travel Clerks	High school diploma or equivalent	None	Short-term on-the-job training	\$11.90
43-4199	Information and Record Clerks, All Other	High school diploma or equivalent	None	Short-term on-the-job training	\$19.51
43-5011	Cargo and Freight Agents	High school diploma or equivalent	None	Short-term on-the-job training	\$19.04
43-5021	Couriers and Messengers	High school diploma or equivalent	None	Short-term on-the-job training	\$12.50
43-5031	Police, Fire, and Ambulance Dispatchers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$20.91
43-5032	Dispatchers, Except Police, Fire, and Ambulance	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.76
43-5041	Meter Readers, Utilities	High school diploma or equivalent	None	Short-term on-the-job training	\$21.38
43-5051	Postal Service Clerks	High school diploma or equivalent	None	Short-term on-the-job training	\$28.15
43-5052	Postal Service Mail Carriers	High school diploma or equivalent	None	Short-term on-the-job training	\$26.39
43-5053	Postal Service Mail Sorters/Proc/Proc Mach. Op	High school diploma or equivalent	None	Short-term on-the-job training	\$27.53
43-5061	Production, Planning, and Expediting Clerks	High school diploma or equivalent	None	Moderate-term on-the-job training	\$22.47
43-5071	Shipping, Receiving, and Traffic Clerks	High school diploma or equivalent	None	Short-term on-the-job training	\$15.21
43-5081	Stock Clerks and Order Fillers	High school diploma or equivalent	None	Short-term on-the-job training	\$11.56
43-5111	Weighers/Meas./Checkers/Samplers, Recordkp	High school diploma or equivalent	None	Short-term on-the-job training	\$15.65

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Ohio Occupational Education and Training Classification**

Code	Occupational Title**	Typical Education**** Needed for Entry	Work Experience in a Related Occupation	Typical On-The-Job Training Needed to Attain Competency in the Occupation	Median Wage*** May 2017
43-6011	Executive Secretaries and Administrative Assistants	High school diploma or equivalent	Less than 5 years	None	\$25.74
43-6012	Legal Secretaries	High school diploma or equivalent	None	Moderate-term on-the-job training	\$20.72
43-6013	Medical Secretaries	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.52
43-6014	Secretaries, Except Legal, Medical, and Executive	High school diploma or equivalent	None	Short-term on-the-job training	\$16.62
43-9011	Computer Operators	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.83
43-9021	Data Entry Keyers	High school diploma or equivalent	None	Short-term on-the-job training	\$14.46
43-9022	Word Processors and Typists	High school diploma or equivalent	None	Short-term on-the-job training	\$18.72
43-9041	Insurance Claims and Policy Processing Clerks	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.11
43-9051	Mail Clerks & Mail Machine Op., ex. Postal Serv.	High school diploma or equivalent	None	Short-term on-the-job training	\$13.92
43-9061	Office Clerks, General	High school diploma or equivalent	None	Short-term on-the-job training	\$14.88
43-9071	Office Machine Operators, Except Computer	High school diploma or equivalent	None	Short-term on-the-job training	\$13.18
43-9111	Statistical Assistants	Bachelor's degree	None	None	\$20.16
43-9199	Office and Administrative Support Workers, All Other	High school diploma or equivalent	None	Short-term on-the-job training	\$17.74
45-0000	Farming, Fishing, & Forestry Occupations				\$13.51
45-1011	FL Sup/Mgrs of Farming/Fishing/Forestry Wrks.	High school diploma or equivalent	Less than 5 years	None	\$20.63
45-2011	Agricultural Inspectors	Bachelor's degree	None	Moderate-term on-the-job training	\$23.97
45-2041	Graders and Sorters, Agricultural Products	No formal educational credential	None	Short-term on-the-job training	\$11.26
45-2091	Agricultural Equipment Operators	No formal educational credential	None	Moderate-term on-the-job training	\$17.21
45-2092	Farmworkers/Laborers, Crop/Nursery/Greenhse	No formal educational credential	None	Short-term on-the-job training	\$11.85
45-2093	Farmworkers, Farm and Ranch Animals	No formal educational credential	None	Short-term on-the-job training	\$11.75
45-4021	Fallers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.56 †††
45-4022	Logging Equipment Operators	High school diploma or equivalent	None	Moderate-term on-the-job training	\$14.17
47-0000	Construction & Extraction Occupations				\$22.36
47-1011	First-Line Sup/Mgrs of Con. Trades/Extract. Work	High school diploma or equivalent	5 years or more	None	\$30.05
47-2011	Boilermakers	High school diploma or equivalent	None	Apprenticeship	\$33.82
47-2021	Brickmasons and Blockmasons	High school diploma or equivalent	None	Apprenticeship	\$25.64
47-2031	Carpenters	High school diploma or equivalent	None	Apprenticeship	\$21.88
47-2041	Carpet Installers	No formal educational credential	None	Short-term on-the-job training	\$16.78
47-2042	Floor Layers, Except Carpet, Wood, and Hard Tiles	No formal educational credential	None	Moderate-term on-the-job training	\$18.99
47-2044	Tile and Marble Setters	No formal educational credential	None	Long-term on-the-job training	\$21.54
47-2051	Cement Masons and Concrete Finishers	No formal educational credential	None	Moderate-term on-the-job training	\$21.21
47-2061	Construction Laborers	No formal educational credential	None	Short-term on-the-job training	\$18.75
47-2071	Paving, Surfacing, and Tamping Equipment Operators	High school diploma or equivalent	None	Moderate-term on-the-job training	\$22.51
47-2073	Operating Engineers & Other Con. Equip. Op.	High school diploma or equivalent	None	Moderate-term on-the-job training	\$26.15
47-2081	Drywall and Ceiling Tile Installers	No formal educational credential	None	Moderate-term on-the-job training	\$18.22
47-2082	Tapers	No formal educational credential	None	Moderate-term on-the-job training	\$25.73
47-2111	Electricians	High school diploma or equivalent	None	Apprenticeship	\$24.17
47-2121	Glaziers	High school diploma or equivalent	None	Apprenticeship	\$19.02
47-2131	Insulation Workers, Floor, Ceiling, and Wall	No formal educational credential	None	Short-term on-the-job training	\$18.67
47-2132	Insulation Workers, Mechanical	High school diploma or equivalent	None	Apprenticeship	\$27.52
47-2141	Painters, Construction and Maintenance	No formal educational credential	None	Moderate-term on-the-job training	\$18.61
47-2142	Paperhangers	No formal educational credential	None	Long-term on-the-job training	\$17.42
47-2151	Pipelayers	No formal educational credential	None	Short-term on-the-job training	\$21.91
47-2152	Plumbers, Pipefitters, and Steamfitters	High school diploma or equivalent	None	Apprenticeship	\$25.15

Appendix Table K – cont'd.
Ohio Occupational Education and Training Classification

Code	Occupational Title**	Typical Education**** Needed for Entry	Work Experience in a Related Occupation	Typical On-The-Job Training Needed to Attain Competency in the Occupation	Median Wage*** May 2017
47-2161	Plasterers and Stucco Masons	No formal educational credential	None	Long-term on-the-job training	\$22.33
47-2171	Reinforcing Iron and Rebar Workers	High school diploma or equivalent	None	Apprenticeship	\$26.03
47-2181	Roofers	No formal educational credential	None	Moderate-term on-the-job training	\$17.53
47-2211	Sheet Metal Workers	High school diploma or equivalent	None	Apprenticeship	\$25.04
47-2221	Structural Iron and Steel Workers	High school diploma or equivalent	None	Apprenticeship	\$28.63
47-3011	Helpers--Brick/Block/Stone/Tile & Marble Setters	No formal educational credential	None	Short-term on-the-job training	\$16.86
47-3012	Helpers--Carpenters	No formal educational credential	None	Short-term on-the-job training	\$13.39
47-3013	Helpers--Electricians	High school diploma or equivalent	None	Short-term on-the-job training	\$13.51
47-3015	Helpers--Pipelayers/Plumbers/Pipefitters/Steamf	High school diploma or equivalent	None	Short-term on-the-job training	\$12.58
47-3016	Helpers--Roofers	No formal educational credential	None	Short-term on-the-job training	\$14.09
47-4011	Construction and Building Inspectors	High school diploma or equivalent	5 years or more	Moderate-term on-the-job training	\$26.56
47-4021	Elevator Installers and Repairers	High school diploma or equivalent	None	Apprenticeship	\$36.60
47-4031	Fence Erectors	No formal educational credential	None	Moderate-term on-the-job training	\$16.75
47-4041	Hazardous Materials Removal Workers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$21.00
47-4051	Highway Maintenance Workers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.24
47-4071	Septic Tank Servicers and Sewer Pipe Cleaners	High school diploma or equivalent	None	Moderate-term on-the-job training	\$20.42
47-4099	Construction and Related Workers, All Other	High school diploma or equivalent	None	Moderate-term on-the-job training	▲
47-5012	Rotary Drill Operators, Oil and Gas	No formal educational credential	None	Moderate-term on-the-job training	\$24.21
47-5013	Service Unit Operators, Oil, Gas, and Mining	No formal educational credential	None	Moderate-term on-the-job training	\$20.35
47-5021	Earth Drillers, Except Oil and Gas	High school diploma or equivalent	None	Moderate-term on-the-job training	\$20.17
47-5041	Continuous Mining Machine Operators	No formal educational credential	None	Moderate-term on-the-job training	\$28.05
47-5042	Mine Cutting and Channeling Machine Operators	High school diploma or equivalent	None	Moderate-term on-the-job training	\$21.01
47-5051	Rock Splitters, Quarry	No formal educational credential	None	Short-term on-the-job training	\$14.93
47-5071	Roustabouts, Oil and Gas	No formal educational credential	None	Moderate-term on-the-job training	\$16.92
47-5081	Helpers--Extraction Workers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$12.96
49-0000	Installation, Maintenance, & Repair Occupations				\$21.02
49-1011	FL Sup/Mgrs of Mechanics/Installers/Repairers	High school diploma or equivalent	Less than 5 years	None	\$29.66
49-2011	Computer, ATM, & Office Machine Repairers	Some college, no degree	None	Short-term on-the-job training	\$16.54
49-2021	Radio Mechanics	Associate's degree	None	Moderate-term on-the-job training	\$27.43
49-2022	Telecomm. Equip. Install/Repair, ex. Line Install	Postsecondary non-degree award	None	Moderate-term on-the-job training	\$23.05
49-2091	Avionics Technicians	Associate's degree	None	None	\$24.69
49-2092	Electric Motor, Power Tool, and Related Repairers	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$21.64
49-2093	Electrical/Electronics Install/Repair, Trans. Equip.	Postsecondary non-degree award	None	Long-term on-the-job training	\$24.31
49-2094	Electrical/Electronics Repair, Comm/Indus Equip.	Postsecondary non-degree award	None	Long-term on-the-job training	\$27.09
49-2095	Electrical/Electronics Repair, Pwrhse/Substa/Rly	Postsecondary non-degree award	Less than 5 years	Moderate-term on-the-job training	\$36.00
49-2096	Electronic Equipment Install/Repair, Motor Veh.	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.04
49-2097	Electronic Home Entertainm Equip. Install/Repair	Postsecondary non-degree award	None	Short-term on-the-job training	\$13.37
49-2098	Security and Fire Alarm Systems Installers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$21.62
49-3011	Aircraft Mechanics and Service Technicians	Postsecondary non-degree award	None	None	\$26.32
49-3021	Automotive Body and Related Repairers	High school diploma or equivalent	None	Long-term on-the-job training	\$18.56
49-3022	Automotive Glass Installers and Repairers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.21
49-3023	Automotive Service Technicians and Mechanics	Postsecondary non-degree award	None	Short-term on-the-job training	\$18.02
49-3031	Bus & Truck Mechanics & Diesel Engine Spec.	High school diploma or equivalent	None	Long-term on-the-job training	\$21.74
49-3041	Farm Equipment Mechanics	High school diploma or equivalent	None	Long-term on-the-job training	\$17.18

Appendix Table K – cont'd.
Ohio Occupational Education and Training Classification

Code	Occupational Title**	Typical Education**** Needed for Entry	Work Experience in a Related Occupation	Typical On-The-Job Training Needed to Attain Competency in the Occupation	Median Wage*** May 2017
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	High school diploma or equivalent	None	Long-term on-the-job training	\$26.07
49-3043	Rail Car Repairers	High school diploma or equivalent	None	Long-term on-the-job training	\$18.00
49-3051	Motorboat Mechanics	High school diploma or equivalent	None	Long-term on-the-job training	\$17.48
49-3052	Motorcycle Mechanics	Postsecondary non-degree award	None	Short-term on-the-job training	\$16.68
49-3053	Outdoor Power Equip. & Other Sm Engine Mech.	High school diploma or equivalent	None	Moderate-term on-the-job training	\$14.63
49-3091	Bicycle Repairers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$13.10
49-3092	Recreational Vehicle Service Technicians	High school diploma or equivalent	None	Long-term on-the-job training	\$16.89
49-3093	Tire Repairers and Changers	High school diploma or equivalent	None	Short-term on-the-job training	\$11.64
49-9011	Mechanical Door Repairers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.32
49-9012	Control & Valve Install/Repair, ex. Mech. Door	High school diploma or equivalent	None	Moderate-term on-the-job training	\$29.40
49-9021	Heating, AC, & Refrigeration Mechanics/Installers	Postsecondary non-degree award	None	Long-term on-the-job training	\$22.19
49-9031	Home Appliance Repairers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.67
49-9041	Industrial Machinery Mechanics	High school diploma or equivalent	None	Long-term on-the-job training	\$24.14
49-9043	Maintenance Workers, Machinery	High school diploma or equivalent	None	Long-term on-the-job training	\$21.00
49-9044	Millwrights	High school diploma or equivalent	None	Apprenticeship	\$29.47
49-9051	Electrical Power-Line Installers and Repairers	High school diploma or equivalent	None	Long-term on-the-job training	\$33.43
49-9052	Telecommunications Line Installers and Repairers	High school diploma or equivalent	None	Long-term on-the-job training	\$22.62
49-9062	Medical Equipment Repairers	Associate's degree	None	Moderate-term on-the-job training	\$23.32
49-9063	Musical Instrument Repairers and Tuners	High school diploma or equivalent	None	Apprenticeship	\$15.63
49-9064	Watch Repairers	High school diploma or equivalent	None	Long-term on-the-job training	\$24.93
49-9069	Precision Instrument/Equipment Repairers, AO	High school diploma or equivalent	None	Long-term on-the-job training	\$28.54
49-9071	Maintenance and Repair Workers, General	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.87
49-9091	Coin/Vending/Amusement Machine Serv/Repair	High school diploma or equivalent	None	Short-term on-the-job training	\$16.03
49-9094	Locksmiths and Safe Repairers	High school diploma or equivalent	None	Long-term on-the-job training	\$16.53
49-9095	Manufactured Building and Mobile Home Installers	High school diploma or equivalent	None	Short-term on-the-job training	\$16.35
49-9096	Riggers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.17
49-9098	Helpers--Installation, Maintenance, and Repair Workers	High school diploma or equivalent	None	Short-term on-the-job training	\$14.61
49-9099	Installation, Maintenance, and Repair Workers, All Other	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.74
51-0000	Production Occupations				\$17.08
51-1011	FL Sup/Mgrs of Production/Operating Workers	High school diploma or equivalent	Less than 5 years	None	\$28.16
51-2011	Aircraft Struct., Surfaces, Rigging, & Systems Assemblers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$21.02
51-2021	Coil Winders, Tapers, and Finishers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.42
51-2022	Electrical and Electronic Equipment Assemblers	High school diploma or equivalent	None	Moderate-term on-the-job training	▲
51-2023	Electromechanical Equipment Assemblers	High school diploma or equivalent	None	Moderate-term on-the-job training	▲
51-2031	Engine and Other Machine Assemblers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$23.14
51-2041	Structural Metal Fabricators and Fitters	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.64
51-2091	Fiberglass Laminators and Fabricators	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.77
51-2092	Team Assemblers	High school diploma or equivalent	None	Moderate-term on-the-job training	▲
51-2099	Assemblers and Fabricators, All Other	High school diploma or equivalent	None	Moderate-term on-the-job training	▲
51-3011	Bakers	No formal educational credential	None	Long-term on-the-job training	\$12.12
51-3021	Butchers and Meat Cutters	No formal educational credential	None	Long-term on-the-job training	\$17.20
51-3022	Meat, Poultry, and Fish Cutters and Trimmers	No formal educational credential	None	Short-term on-the-job training	\$13.28
51-3023	Slaughterers and Meat Packers	No formal educational credential	None	Short-term on-the-job training	\$12.94
51-3091	Food and Tobacco Roasting, Baking, and Drying Machine Operators/Tenders	No formal educational credential	None	Moderate-term on-the-job training	\$16.18

Appendix Table K – cont'd.
Ohio Occupational Education and Training Classification

Code	Occupational Title**	Typical Education**** Needed for Entry	Work Experience in a Related Occupation	Typical On-The-Job Training Needed to Attain Competency in the Occupation	Median Wage*** May 2017
51-3092	Food Batchmakers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.48
51-3093	Food Cooking Machine Operators/Tenders	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.88
51-3099	Food Processing Workers, All Other	No formal educational credential	None	Moderate-term on-the-job training	\$11.87
51-4011	Computer-Controlled Machine Tool Oper., M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.28
51-4012	Numerical Tool and Process Control Programmers	Postsecondary non-degree award	None	Moderate-term on-the-job training	\$23.71
51-4021	Extruding & Drawing Machine Setters, O/T, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.91
51-4022	Forging Mach. Setters/Operators/Tenders, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.59
51-4023	Rolling Machine Setters/Operators/Tenders, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.92
51-4031	Cutting/Punching/Press Machine S/O/T, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.71
51-4032	Drilling & Boring Machine Tool Setters, O/T, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.00
51-4033	Grind/Lapping/Polish/Buff Mach.Tool S/O/T, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.40
51-4034	Lathe & Turning Machine Tool Setters, O/T, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.39
51-4035	Milling & Planing Machine Setters, O/T, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$22.14
51-4041	Machinists	High school diploma or equivalent	None	Long-term on-the-job training	\$20.20
51-4051	Metal-Refining Furnace Operators/Tenders	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.97
51-4052	Pourers and Casters, Metal	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.63
51-4061	Model Makers, Metal and Plastic	High school diploma or equivalent	None	Moderate-term on-the-job training	\$24.57
51-4062	Patternmakers, Metal and Plastic	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.53
51-4071	Foundry Mold and Coremakers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.63
51-4072	Molding/Coremaking/Casting Mach. S/O/T, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$14.70
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.45
51-4111	Tool and Die Makers	Postsecondary non-degree award	None	Long-term on-the-job training	\$24.70
51-4121	Welders, Cutters, Solderers, and Brazers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.58
51-4122	Welding/Soldering/Brazing Machine Setters, O/T	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.97
51-4191	Heat Treating Equip. Setters, O/T, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.12
51-4192	Lay-Out Workers, Metal and Plastic	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.42
51-4193	Plating & Coating Machine Setters, O/T, M/P	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.75
51-4194	Tool Grinders, Filers, and Sharpeners	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.35
51-4199	Metal Workers and Plastic Workers, All Other	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.24
51-5111	Prepress Technicians and Workers	Postsecondary non-degree award	None	None	\$18.33
51-5112	Printing Press Operators and Job Printers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.42
51-5113	Print Binding and Finishing Workers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$13.95
51-6011	Laundry and Dry-Cleaning Workers	No formal educational credential	None	Short-term on-the-job training	\$9.88
51-6021	Pressers, Textile, Garment, and Related Materials	No formal educational credential	None	Short-term on-the-job training	\$9.88
51-6031	Sewing Machine Operators	No formal educational credential	None	Short-term on-the-job training	\$11.80
51-6041	Shoe and Leather Workers and Repairers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$11.36
51-6062	Textile Cutting Machine Setters, Operators, & Tenders	High school diploma or equivalent	None	Moderate-term on-the-job training	\$14.28
51-6063	Textile Knitting and Weaving Machine Setters, O/T	High school diploma or equivalent	None	Short-term on-the-job training	\$13.94
51-6091	Extrud/Form Mach S/O/T, Synthetic/Glass Fibers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.13
51-6093	Upholsterers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$13.90
51-6099	Textile, Apparel, and Furnishings Workers, All Other	High school diploma or equivalent	None	Short-term on-the-job training	\$14.45
51-7011	Cabinetmakers and Bench Carpenters	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.58
51-7021	Furniture Finishers	High school diploma or equivalent	None	Short-term on-the-job training	\$14.50
51-7041	Sawing Mach. Setters/Operators/Tenders, Wood	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.28

Appendix Table K – cont'd.
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Code	Occupational Title**	Typical Education**** Needed for Entry	Work Experience in a Related Occupation	Typical On-The-Job Training Needed to Attain Competency in the Occupation	Median Wage*** May 2017
51-7042	Woodworking Machine Setters, O/T, Except Sawing	High school diploma or equivalent	None	Moderate-term on-the-job training	\$14.46
51-8012	Power Distributors and Dispatchers	High school diploma or equivalent	None	Long-term on-the-job training	\$38.13
51-8013	Power Plant Operators	High school diploma or equivalent	None	Long-term on-the-job training	\$34.70
51-8021	Stationary Engineers and Boiler Operators	High school diploma or equivalent	None	Long-term on-the-job training	\$27.02
51-8031	Water/Liquid Waste Treatment Plant/System Op.	High school diploma or equivalent	None	Long-term on-the-job training	\$23.05
51-8091	Chemical Plant and System Operators	High school diploma or equivalent	None	Moderate-term on-the-job training	\$28.30
51-8093	Petroleum Pump System Oper./Refinery Oper./Gaugers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$30.80
51-8099	Plant and System Operators, All Other	High school diploma or equivalent	None	Moderate-term on-the-job training	\$25.00
51-9011	Chemical Equipment Operators/Tenders	High school diploma or equivalent	None	Moderate-term on-the-job training	\$21.30
51-9012	Sep./Filter/Clarify/Precipitating/Still Mach. S/O/T	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.66
51-9021	Crushing/Grinding/Polishing Machine S/O/T	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.96
51-9022	Grinding and Polishing Workers, Hand	No formal educational credential	None	Moderate-term on-the-job training	\$14.65
51-9023	Mixing/Blending Machine Setters/Operators/Tenders	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.81
51-9032	Cutting/Slicing Mach. Setters/Operators/Tenders	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.80
51-9041	Extrud/Form/Pressing/Compacting Mach. S/O/T	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.89
51-9051	Furnace/Kiln/Oven/Drier/Kettle Oper./Tenders	High school diploma or equivalent	None	Moderate-term on-the-job training	\$17.20
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.11
51-9071	Jewelers and Precious Stone and Metal Workers	High school diploma or equivalent	None	Long-term on-the-job training	\$18.89
51-9081	Dental Laboratory Technicians	High school diploma or equivalent	None	Moderate-term on-the-job training	\$19.10
51-9082	Medical Appliance Technicians	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.11
51-9083	Ophthalmic Laboratory Technicians	High school diploma or equivalent	None	Moderate-term on-the-job training	\$13.80
51-9111	Packaging and Filling Machine Operators/Tenders	High school diploma or equivalent	None	Moderate-term on-the-job training	\$14.74
51-9121	Coating/Painting/Spraying Machine Setters, O/T	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.54
51-9122	Painters, Transportation Equipment	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.63
51-9141	Semiconductor Processors	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.81
51-9151	Photographic Process Workers and Processing Machine Operators	High school diploma or equivalent	None	Short-term on-the-job training	\$13.84
51-9191	Cementing and Gluing Machine Operators/Tenders	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.87
51-9192	Cleaning/Washing/Metal Pickling Equipment O/T	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.27
51-9193	Cooling and Freezing Equipment Operators/Tenders	High school diploma or equivalent	None	Moderate-term on-the-job training	\$13.69
51-9194	Etchers and Engravers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$16.34
51-9195	Molders/Shapers/Casters, ex. Metal & Plastic	High school diploma or equivalent	None	Long-term on-the-job training	\$15.59
51-9196	Paper Goods Machine Setters, Operators, and Tenders	High school diploma or equivalent	None	Moderate-term on-the-job training	\$18.24
51-9197	Tire Builders	High school diploma or equivalent	None	Moderate-term on-the-job training	\$24.31
51-9198	Helpers--Production Workers	High school diploma or equivalent	None	Short-term on-the-job training	\$13.85
51-9199	Production Workers, All Other	High school diploma or equivalent	None	Moderate-term on-the-job training	\$14.26
53-0000	Transportation & Material Moving Occupations				\$14.64
53-1021	FL Sup/Mgrs of Help/Labor/Mat. Movers, Hand	High school diploma or equivalent	Less than 5 years	None	▲
53-1031	FL Sup/Mgr of Trans/Mat.-Mov. Mach & Veh Op	High school diploma or equivalent	Less than 5 years	None	▲
53-2011	Airline Pilots, Copilots, and Flight Attendants	Bachelor's degree	Less than 5 years	Moderate-term on-the-job training	\$90,890 ††
53-2012	Commercial Pilots	High school diploma or equivalent	None	Moderate-term on-the-job training	\$77,510 ††
53-2021	Air Traffic Controllers	Associate's degree	None	Long-term on-the-job training	\$65.96
53-2022	Airfield Operations Specialists	High school diploma or equivalent	None	Long-term on-the-job training	\$20.12
53-2031	Flight Attendants	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$50,720 ††
53-3011	Ambulance Drivers & Attendants, Ex. EMT	High school diploma or equivalent	None	Moderate-term on-the-job training	\$10.83

Appendix Table K – cont'd.
Ohio Occupational Education and Training Classification

Code	Occupational Title**	Typical Education**** Needed for Entry	Work Experience in a Related Occupation	Typical On-The-Job Training Needed to Attain Competency in the Occupation	Median Wage*** May 2017
53-3021	Bus Drivers, Transit and Intercity	High school diploma or equivalent	None	Moderate-term on-the-job training	\$20.18
53-3022	Bus Drivers, School	High school diploma or equivalent	None	Short-term on-the-job training	\$15.44
53-3031	Driver/Sales Workers	High school diploma or equivalent	None	Short-term on-the-job training	\$9.47
53-3032	Truck Drivers, Heavy and Tractor-Trailer	Postsecondary non-degree award	None	Short-term on-the-job training	\$20.09
53-3033	Truck Drivers, Light or Delivery Services	High school diploma or equivalent	None	Short-term on-the-job training	\$14.27
53-3041	Taxi Drivers and Chauffeurs	No formal educational credential	None	Short-term on-the-job training	\$10.39
53-3099	Motor Vehicle Operators, All Other	No formal educational credential	None	Short-term on-the-job training	\$10.04
53-4013	Rail Yard Engineers, Dinkey Operators, & Hostlers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$26.15
53-4021	Railroad Brake, Signal, and Switch Operators	High school diploma or equivalent	None	Moderate-term on-the-job training	\$23.95
53-5011	Sailors and Marine Oilers	No formal educational credential	None	Moderate-term on-the-job training	\$17.26
53-5021	Captains, Mates, and Pilots of Water Vessels	Postsecondary non-degree award	Less than 5 years	None	\$24.32
53-6011	Bridge and Lock Tenders	High school diploma or equivalent	None	Short-term on-the-job training	\$25.38
53-6021	Parking Lot Attendants	No formal educational credential	None	Short-term on-the-job training	\$9.88
53-6031	Service Station Attendants	No formal educational credential	None	Short-term on-the-job training	\$10.82
53-6041	Traffic Technicians	High school diploma or equivalent	None	Moderate-term on-the-job training	\$23.98
53-6051	Transportation Inspectors	High school diploma or equivalent	None	Moderate-term on-the-job training	\$26.66
53-6061	Transportation Attendants, Except Flight Attendants	High school diploma or equivalent	None	Short-term on-the-job training	\$12.33
53-6099	Transportation Workers, All Other	High school diploma or equivalent	None	Short-term on-the-job training	\$15.00
53-7011	Conveyor Operators/Tenders	No formal educational credential	None	Short-term on-the-job training	\$14.91
53-7021	Crane and Tower Operators	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$19.73
53-7032	Excavating & Loading Machine & Dragline Oper.	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$19.58
53-7041	Hoist and Winch Operators	No formal educational credential	None	Short-term on-the-job training	\$17.77
53-7051	Industrial Truck and Tractor Operators	No formal educational credential	None	Short-term on-the-job training	\$15.66
53-7061	Cleaners of Vehicles and Equipment	No formal educational credential	None	Short-term on-the-job training	\$10.82
53-7062	Laborers/Freight/Stock/Material Movers, Hand	No formal educational credential	None	Short-term on-the-job training	\$12.92
53-7063	Machine Feeders and Offbearers	No formal educational credential	None	Short-term on-the-job training	\$11.99
53-7064	Packers and Packagers, Hand	No formal educational credential	None	Short-term on-the-job training	\$10.98
53-7071	Gas Compressor and Gas Pumping Station Operators	High school diploma or equivalent	None	Moderate-term on-the-job training	\$34.02
53-7072	Pump Operators, Except Wellhead Pumpers	High school diploma or equivalent	None	Moderate-term on-the-job training	\$15.08
53-7073	Wellhead Pumpers	High school diploma or equivalent	Less than 5 years	Moderate-term on-the-job training	\$18.21
53-7081	Refuse and Recyclable Material Collectors	No formal educational credential	None	Short-term on-the-job training	\$16.81
53-7121	Tank Car, Truck, and Ship Loaders	No formal educational credential	None	Short-term on-the-job training	\$14.87
53-7199	Material Moving Workers, All Other	No formal educational credential	None	Short-term on-the-job training	\$14.26

* Occupations with 100 or more workers.

** Certain Occupations are abbreviated.

Abbreviations:

AO = All Other

FL Sup/Mgrs = FirstLine Supervisors/Managers

M/P = Metal and Plastic

PS = Postsecondary

O/T = Operators and Tenders

S/O/T = Setters, Operators and Tenders

† National Wages

†† Certain occupations only report wages at the annual level - for elementary and secondary teachers this typically reflects a 9 1/2 month school year.

††† Annual National Wages

N/A This wage is equal or greater than \$100 per hour or \$208,000 per year.

▲ Wage data unavailable – OES consolidated these occupations in 2017.

*** Wage estimates are based on Ohio's OES surveys.

**** Education, experience and training levels associated with occupations were based on national data provided by the BLS.

Source: Ohio Department of Job and Family Services, Bureau of Labor Market Information, September 2018.

Ohio Department of Job and Family Services
Office of Workforce Development
P.O. Box 1618
Columbus, OH 43216-1618



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John R. Kasich, Governor

State of Ohio

<http://Ohio.gov>

Cynthia C. Dungey, Director

Ohio Department of Job and Family Services

<http://jfs.ohio.gov>

Office of Workforce Development

<http://jfs.ohio.gov/owd/>

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