








# RMLA Region 2 Public Community Colleges

Program Demand Gap Analysis:  
Economic Overview and  
Review of Academic Programs

December 2020

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Emsi is a leading provider of labor market data to professionals in higher education, economic development, workforce development, talent acquisition, and site selection. Our data, which cover more than 99% of the U.S. workforce, are compiled from a wide variety of government sources, job postings, and online profiles and résumés. Our data are used to solve a variety of problems: align programs with regional needs, equip students with career visions, understand regional economic and workforce activity, and find and hire the right talent. We serve clients across the U.S., the UK, and Canada.



# Executive Summary

The RMLA Region 2 has three public, two-year postsecondary educational institutions. These include Baton Rouge Community College (BRCC), Northshore Technical Community College (NTCC), and River Parishes Community College (RPCC). To further their goal of providing the region with well-trained and well-educated residents, the colleges continually pursue improvement in various forms. An up-to-date understanding of the regional economy and the demand for skilled labor is vital to the planning efforts of the colleges as they seek to adapt their program offerings to the requirements of an ever-changing workforce. The colleges partnered with Emsi, a leading provider of labor market data, to complete a program demand gap analysis, which assesses regional job openings against educational program completions.

## RECOMMENDATIONS

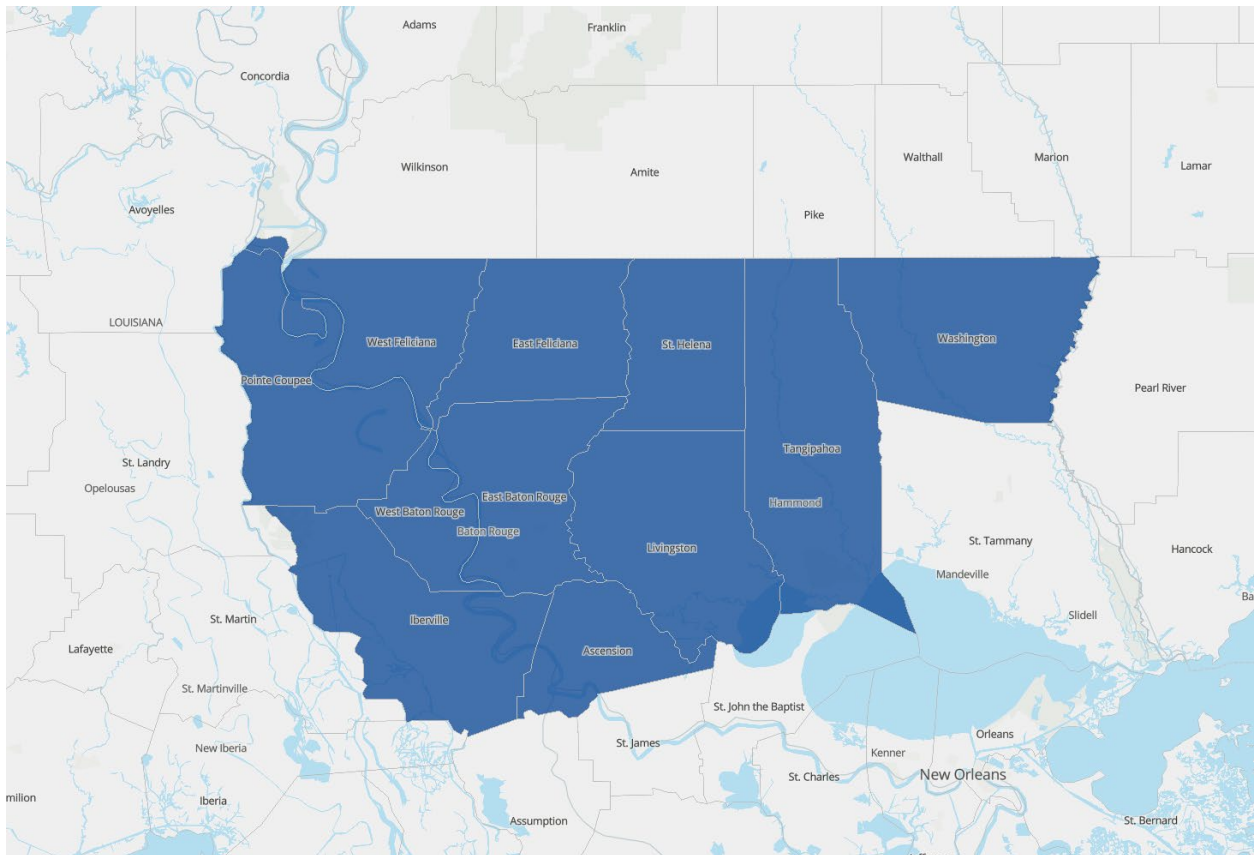
<p><b>HIGH DEMAND, LOW SUPPLY</b></p> <p><i>How can we expand these program opportunities?</i></p> <p>Construction Trades, General (CERT)</p> <p>Criminal Justice/Safety Studies (CERT &amp; ASSOC)</p> <p>Accounting Technology/Technician &amp; Bookkeeping (CERT)</p> <p>Industrial Mechanics &amp; Maintenance Technology (ASSOC)</p> <p>Culinary Arts/Chef Training (ASSOC)</p>	<p><b>HIGH DEMAND, HIGH SUPPLY</b></p> <p><i>Can we maintain focus on program quality &amp; student success?</i></p> <p>Licensed Practical/Vocational Nurse Training (CERT)</p> <p>Welding Technology/Welder (CERT)</p> <p>Culinary Arts/Chef Training (ASSOC)</p> <p>Computer Science (T-T)</p>
<p><b>LOW DEMAND, LOW SUPPLY</b></p> <p><i>Should we discontinue these programs?</i></p> <p>Pipefitting/Pipefitter &amp; Sprinkler Fitter (CERT)</p> <p>Barbering/Barber (CERT)</p> <p>Drafting &amp; Design Technology/Technician, General (T-T)</p>	<p><b>LOW DEMAND, HIGH SUPPLY</b></p> <p><i>Are we connecting these programs to opportunities outside the parish?</i></p> <p>Medical/Clinical Assistant (CERT)</p> <p>Drafting &amp; Design Technology/Technician, General (CERT &amp; ASSOC)</p> <p>Industrial Production Technologies/Technicians, Other (CERT &amp; ASSOC)</p>

Source: Emsi program demand gap model.

## INTRODUCTION

For purposes of the program demand gap analysis, the colleges serve a region, called the RMLA Region 2, which is comprised of eleven parishes in Louisiana: East Baton Rouge, Ascension, Livingston, Tangipahoa, Iberville, West Baton Rouge, Washington, West Feliciana, East Feliciana, Pointe Coupee, and St. Helena. This report outlines the region's economy and uses the region's average annual projected job openings between 2020 and 2030 as a measurement of labor market demand. When job openings are compared to the region's supply of educational program completions, the analysis determines how well the colleges' program offerings satisfy regional workforce demand. In addition, this report offers recommendations for new program development. In its entirety, the analysis is a starting point for the colleges as they continue to develop programs using data-based decision-making strategies. The following figures and table display key findings of the analyses.

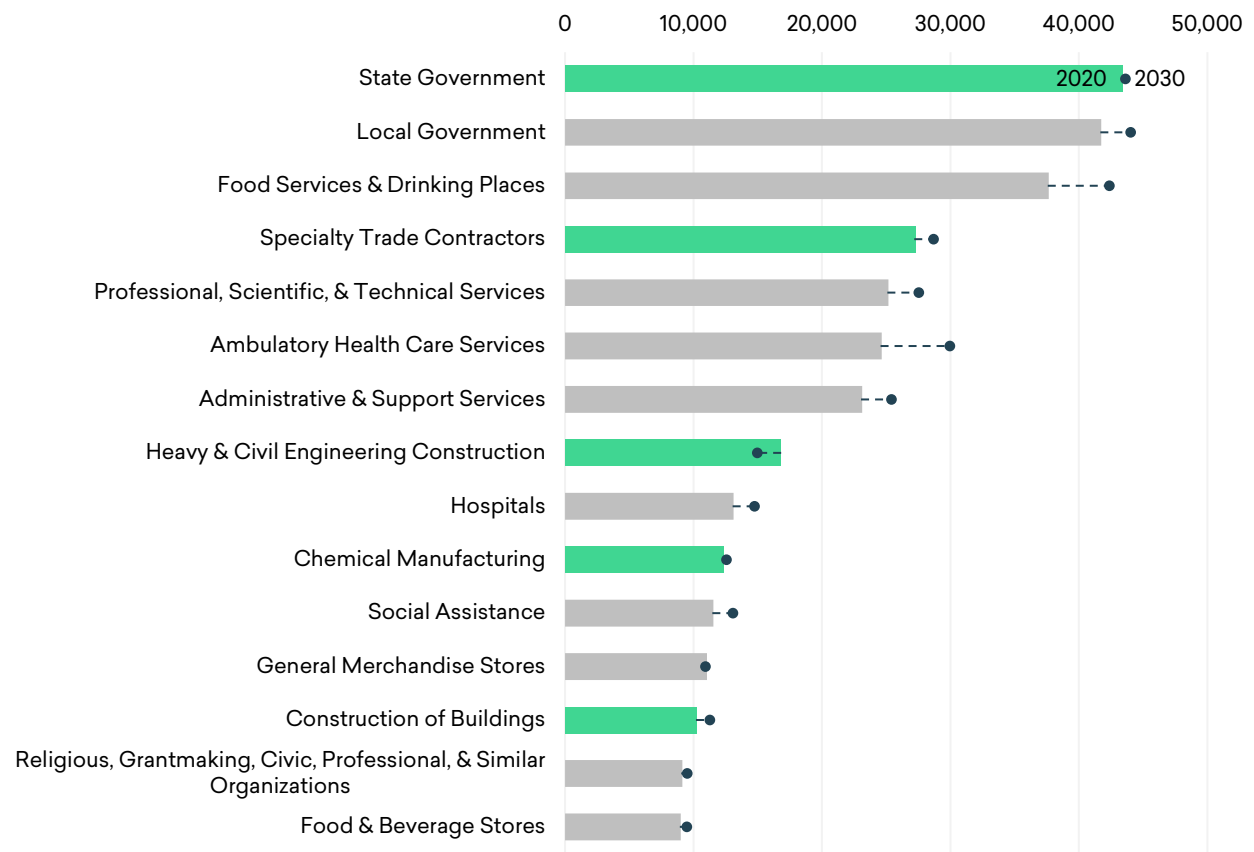
Figure 1: Map of the RMLA Region 2



Source: Emsi Analyst.

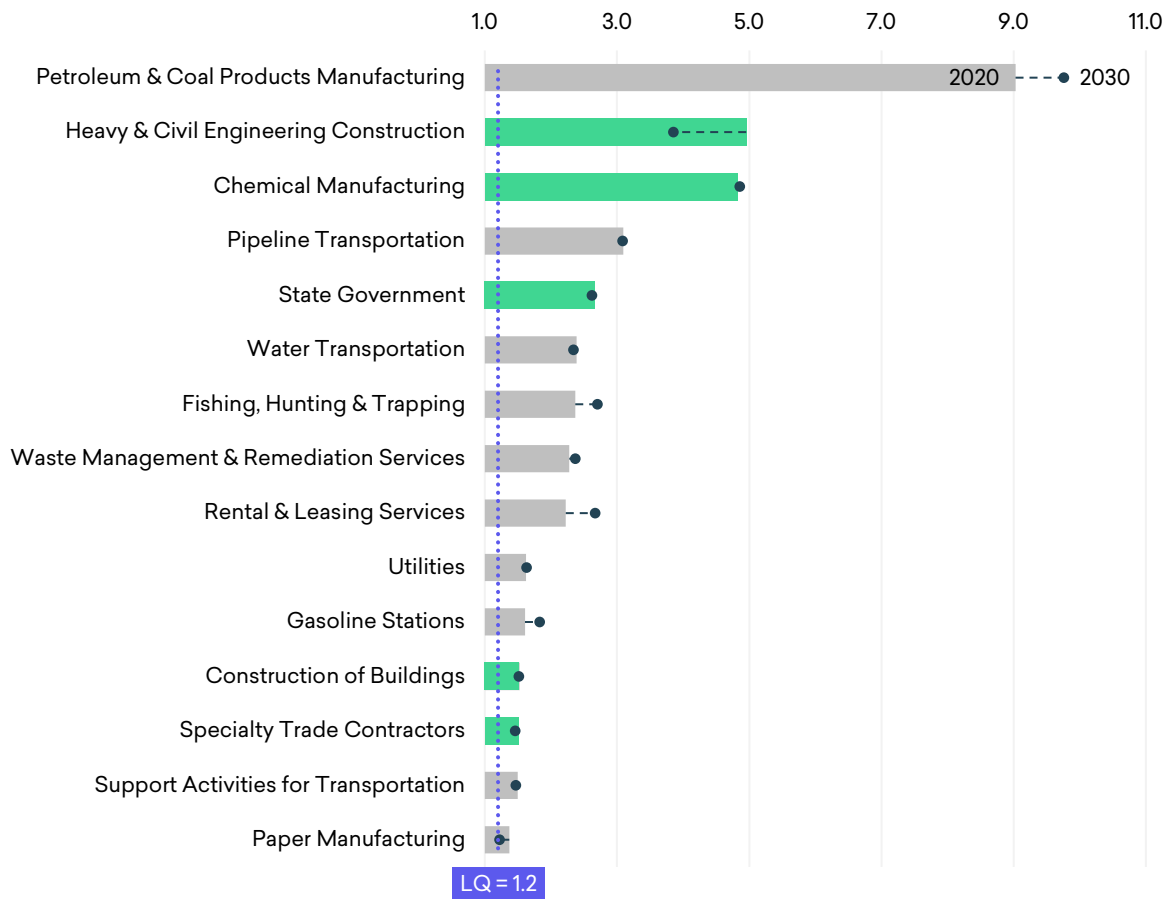
Figure 2 displays the top industry subsectors in terms of employment in the RMLA Region 2, and Figure 3 shows the top industry subsectors in terms of employment concentrations, referred to as location quotients (LQs). High LQs (usually anything greater than 1.2) are an indication that the region has a comparative advantage or specialization in certain industry subsectors relative to the rest of the nation or potentially to other regions.

Figure 2: Top Industry Subsectors in the RMLA Region 2 by Jobs



Source: Employees & Self-Employed 2020.4.

Figure 3: Top Industry Subsectors in the RMLA Region 2 by Employment Concentration (LQ)



Source: Employees & Self-Employed 2020.4.

Note the green bars in the figures. Across all of the RMLA Region 2's industry subsectors, five are within the top 15 in terms of jobs with relatively high LQs. The appearance of these industry subsectors provides an indication of their strength in the region's economy and offers the colleges insight into potential employment opportunities for their students. These industry subsectors, ranked by 2020 jobs, are:

- State Government;
- Specialty Trade Contractors;
- Heavy & Civil Engineering Construction;
- Chemical Manufacturing; and
- Construction of Buildings.

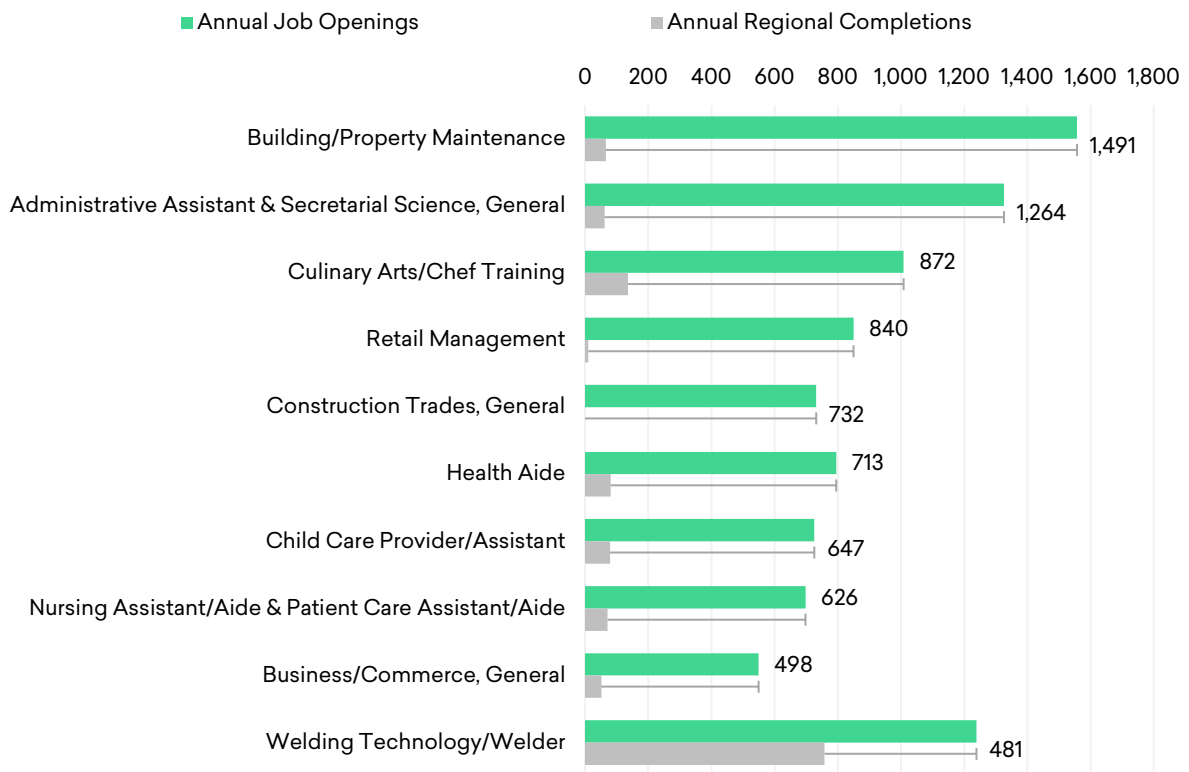


## PROGRAM DEMAND GAP ANALYSIS

The program demand gap analysis provides results across all of the colleges' certificate and degree level programs, which have been classified by their formal CIP code.<sup>1</sup> The analysis connects the colleges' program completers with the availability of regional job openings. Furthermore, the analysis focuses on the gaps and surpluses in the programs by award level. A gap or surplus larger than 300 is considered beyond normal labor market fluctuations and therefore an area of consideration for program development.

The colleges offer 46 certificate level programs, 15 of which have a significant gap above the 300-openings level of significance, as shown in Figure 5. Many should be considered for expansion, with more priority given to the programs with a significant gap and high median hourly wage. No programs at this award level have a significant surplus.

Figure 5: Top 10 Certificate Level Gaps

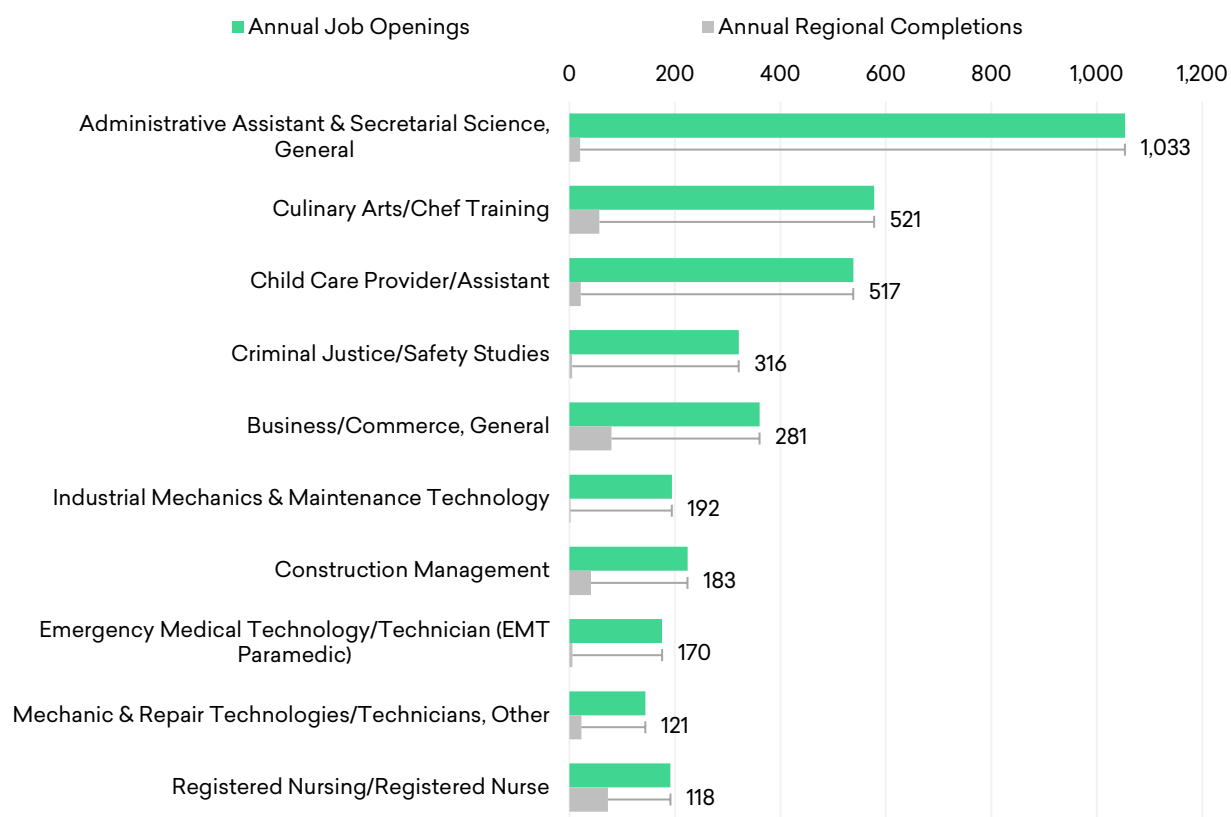


Source: Emsi program demand gap model.

<sup>1</sup> CIP refers to the Classification of Instructional Program and was originally developed by the U.S. Department of Education's National Center for Education Statistics (NCES).

At the associate degree level, four programs have a significant gap (Figure 6). Several should be considered for expansion, many of which are related to other degree level programs without a significant 300-openings gap. Furthermore, if the associate degree level program is associated with a formal industry-specific certificate, permit, or license required for employment, it is also recommended for expansion.

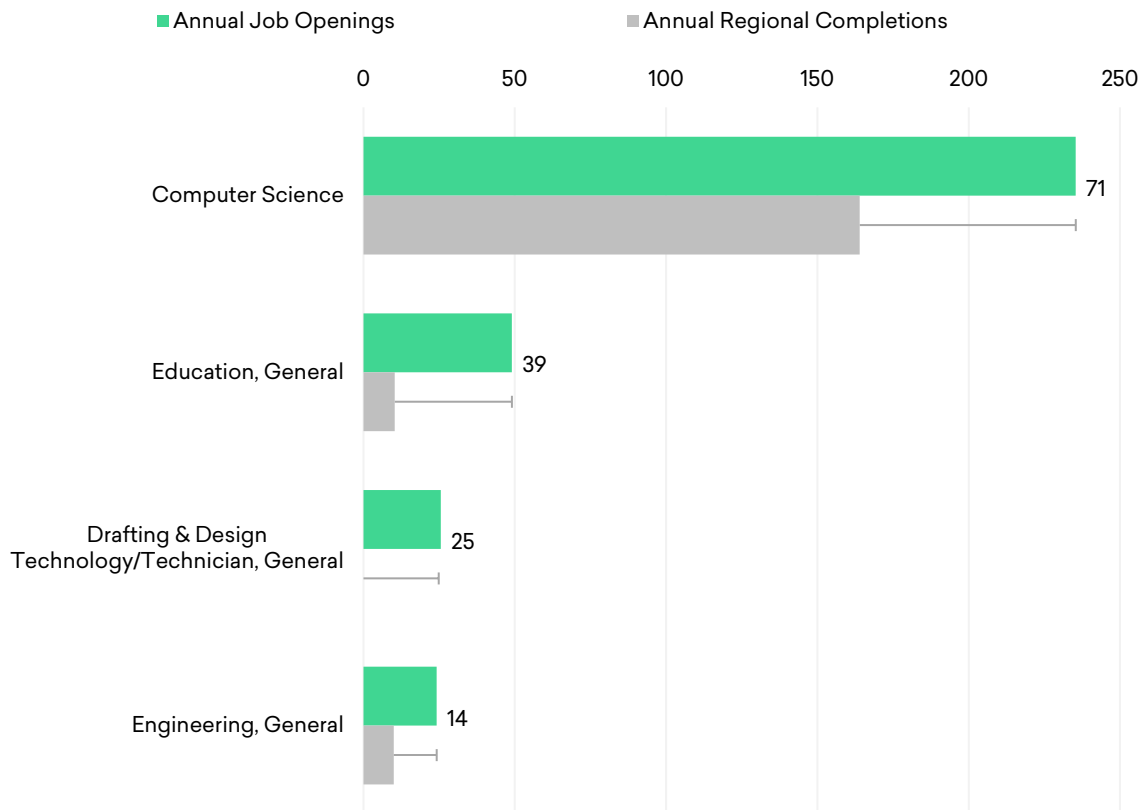
Figure 6: Top 10 Associate Degree Level Gaps



Source: Emsi program demand gap model.

The colleges offer five transfer-track degree programs. In other words, a program completer could readily transfer into a similar bachelor's degree level program at another postsecondary educational institution in the state. Of these programs, none have a significant gap above the 300-openings level of significance, as shown in Figure 7. While there are no significant gaps, some programs could merit expansion given their high median hourly wage. No programs at this award level have a significant surplus.

Figure 7: Transfer-Track Degree Level Gaps



Source: Emsi program demand gap model.

A liberal arts program expansion is not recommended at this time, but the colleges' administrators should be aware that students can find success in a variety of business-related occupations. Using Emsi's Profile Analytics database, many liberal arts program completers are currently employed as retail salespersons, administrative assistants, and customer service representatives, as well as a variety of managers and supervisors. These occupations have a considerable number of job openings in the RMLA Region 2. The colleges' liberal arts programs, therefore, serve as a starting point to students' career goals beyond an associate degree level of education.

## PROGRAM ADDITIONS

Fifty certificate level programmatic areas of opportunity have been identified in the program demand gap analysis, many of which are related to production occupations. At the associate degree level, there are fewer opportunities for new programs, considering the colleges' current offerings. Nonetheless, the colleges should consider new programs related to

healthcare practitioners & technical occupations, whether their focus is on job openings in the RMLA Region 2 or Louisiana. Another 43 programmatic areas of opportunity were identified at the transfer-track degree level, many of which are related to business & financial operations occupations, a demand which the colleges could establish or adjust existing transfer-track degrees to meet. For all award levels, many program additions are related to the colleges' current program offerings, which indicates an opportunity for a curriculum adjustment to better align with the region's current and projected labor market demand. A selection of these occupations, which have the most regional job openings by award level, appear in Table 1.

Table 1: Program Additions by Education Level

<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>ANNUAL JOB OPENINGS</b>	<b>ANNUAL COMPL.</b>	<b>GAP</b>	<b>MEDIAN HOURLY WAGE</b>	<b>ED. LEVEL</b>
Heavy and Tractor-Trailer Truck Drivers	4,884	459	70	388	\$19.68	CERT
Operating Engineers and Other Construction Equipment Operators	2,602	240	0	240	\$23.35	CERT
Inspectors, Testers, Sorters, Samplers, and Weighers	2,006	158	0	158	\$26.39	CERT
Industrial Truck and Tractor Operators	1,702	153	0	153	\$19.08	CERT
First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	1,813	140	0	140	\$26.77	CERT
Shipping, Receiving, and Inventory Clerks	1,652	128	0	128	\$15.76	CERT
Insulation Workers, Mechanical	1,386	126	0	126	\$21.44	CERT
Petroleum Pump System Operators, Refinery Operators, and Gaugers	1,334	111	0	111	\$38.30	CERT
Chemical Plant and System Operators	1,441	110	0	110	\$34.31	CERT
Chemical Equipment Operators and Tenders	1,173	82	0	82	\$34.63	CERT
Dental Hygienists	564	29	0	29	\$33.88	ASSOC
Respiratory Therapists	422	23	0	23	\$25.41	ASSOC
Occupational Therapy Assistants	176	19	0	19	\$28.45	ASSOC
Insurance Sales Agents	2,681	153	0	153	\$18.77	BACH
Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	2,222	161	11	150	\$18.74	BACH
Human Resources Specialists	1,185	80	12	68	\$25.16	BACH
Real Estate Sales Agents	1,222	68	11	56	\$16.59	BACH
Office and Administrative Support Workers, All Other	911	56	0	56	\$18.01	BACH

SOC refers to the Standard Occupational Classification system used to classify occupations. Average annual job openings represent regional data from 2020 to 2030. Numbers may not sum due to rounding.

Source: Emsi program demand gap model





# Introduction

An efficient labor market requires a seamless flow of skilled workers, the postsecondary educational institutions that educate and train them, and the employers that hire them. One factor behind workforce misalignment stems from when the needs of the employers evolve differently than the programs that train their workers. These misalignments may happen at different times and for different reasons:

- Employer training becomes more tailored and comprehensive;
- Businesses come and go, and certain educational programs become more or less pertinent to a specific region;
- Rapid advances in technology and business create curriculum needs that few educational institutions possess; and
- As economic conditions shift, businesses have different hiring requirements of their employees.

In light of these dynamics, an up-to-date understanding of the economy and the demand for skilled labor is vital to the planning efforts of colleges and universities seeking to adapt their program offerings to the requirements of an ever-changing workforce.

To gain better insight into economic conditions and workforce trends, the RMLA Region 2 Public Community Colleges, which includes Baton Rouge Community College (BRCC), Northshore Technical Community College (NTCC), and River Parishes Community College (RPCC), partnered with Emsi, a labor market analytics firm, serving higher education, economic and workforce development, talent acquisition, and site selection. In this report, Emsi conducts an overview of the region's economy, provides a program demand gap analysis of the colleges' program offerings, and makes recommendations for new program development.

The program demand gap analysis is performed by assessing the supply and demand of skilled workers and identifying the educational programs that need to be adapted in order to fill any existing or future gaps. The analysis weighs the educational output of the colleges and other postsecondary educational institutions in the region against the number of job openings related to the colleges' program offerings to determine whether a deficit or an oversupply of skilled workers exists. The goal of the analysis is to provide the colleges with relevant data and information they can use when solving problems and making decisions about current and future program development.



## IMPORTANT NOTE

This analysis is intended to serve as a starting point for the colleges as they discuss regional workforce needs. A deficit (gap) or oversupply (surplus) of workers in a particular occupation category represents a potential problem for the region, making it important for each program and occupation group to be evaluated by the colleges on a case-by-case basis. The purpose of this analysis is, therefore, to initiate the conversation on evaluating program effectiveness. Once evaluated internally within the colleges, specific implications may be considered for programs with substantial gaps or surpluses.

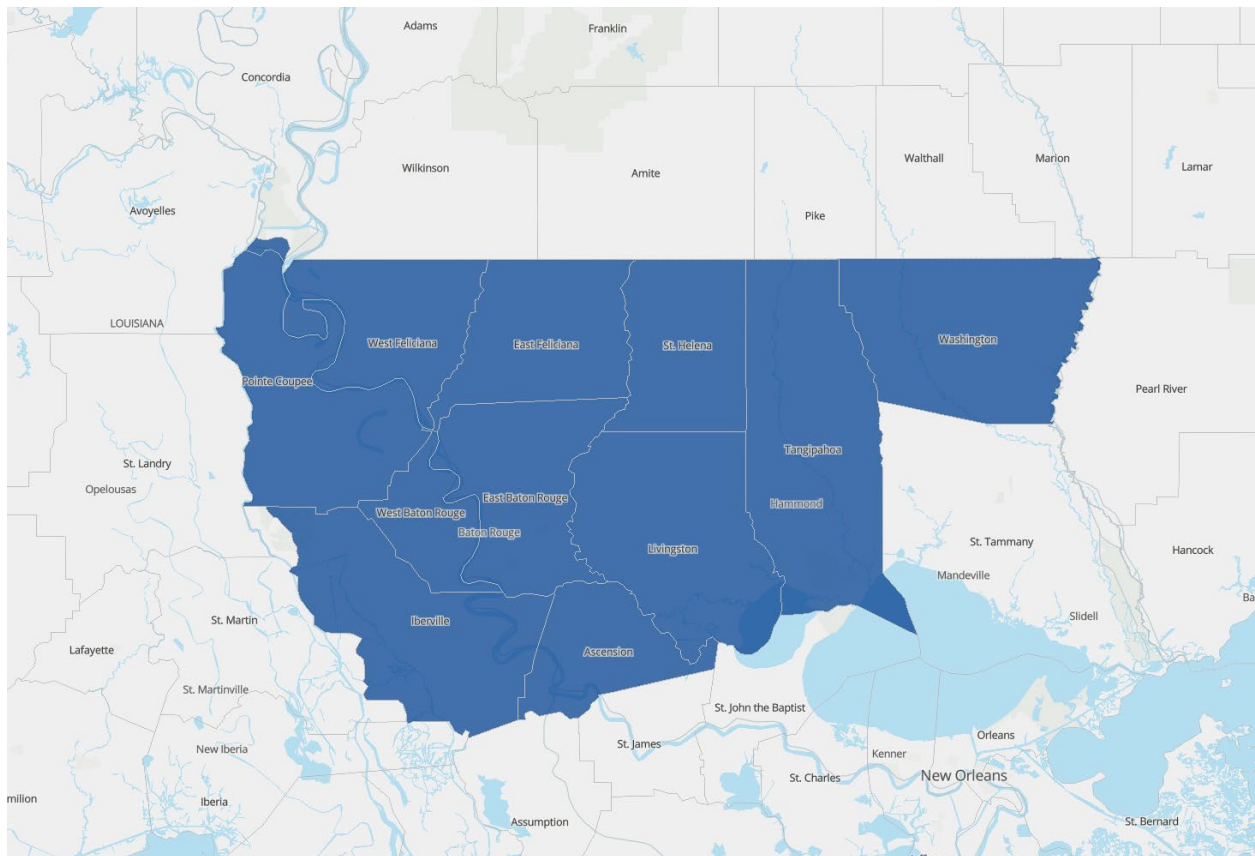
It must be noted that our analysis does have its limitations in that only the education supply pipeline is considered. This is due to data availability at the region and institutional levels. However, other sources—unemployed workers, industry trained pipelines, workers migrating to the region, and job changers from other occupational categories—can also be a source of skilled workers. These types of considerations are useful when evaluating specific types of occupations. Publicly available data sources are limited in accounting for this, and consequently these labor sources are unavailable for Emsi analysis. Primary data collection methods (i.e., interviews and surveys) are among the only ways to obtain information on the other sources for skilled workers.



# Economic Overview

Before looking at the results of the program demand gap analysis, the colleges should first consider the economic structure of their region, referred to in this report as the RMLA Region 2 and defined as East Baton Rouge, Ascension, Livingston, Tangipahoa, Iberville, West Baton Rouge, Washington, West Feliciana, East Feliciana, Pointe Coupee, and St. Helena parishes in Louisiana (Figure 2.1). Identifying the driving industries within the region is an important first step for three reasons: 1) it helps the colleges understand where they should logically target their efforts, 2) it helps to reveal whether there are industries that may be overlooked as a result of recent economic growth, and 3) it helps identify the top occupations within those key driving industries.

Figure 2.1: Map of the RMLA Region 2



Source: Emsi Analyst.



In addition to knowing the industry structure of the region, it is important to have an understanding of the workforce—how connected the region’s workers are to the surrounding community and the educational attainment of workers in the region. To these ends, this chapter provides an overview of the RMLA Region 2’s industry composition, shows common occupations in the region’s key industries, illustrates worker commuting patterns, and discusses the highest educational attainments of the region’s adult residents. Supporting data tables are found in Appendix 3.

## INDUSTRY COMPOSITION

Evaluating current and future employment by industry provides information on the region’s economic diversity. Understanding the industry mix is important for drawing connections to the occupations and companies that are in-demand, and students are likely to find employment in the largest regional industries. The North American Industry Classification System (NAICS) is the structure used by federal agencies to classify business establishments based on their production process (although the final product or service is usually similar for the firms in a given industry). NAICS applies a six-digit hierarchical coding system to organize nearly 1,000 detailed industries in the U.S. For the analysis in this section, Emsi has aggregated industries into their three-digit NAICS codes, referred to as industry subsectors.<sup>2</sup>

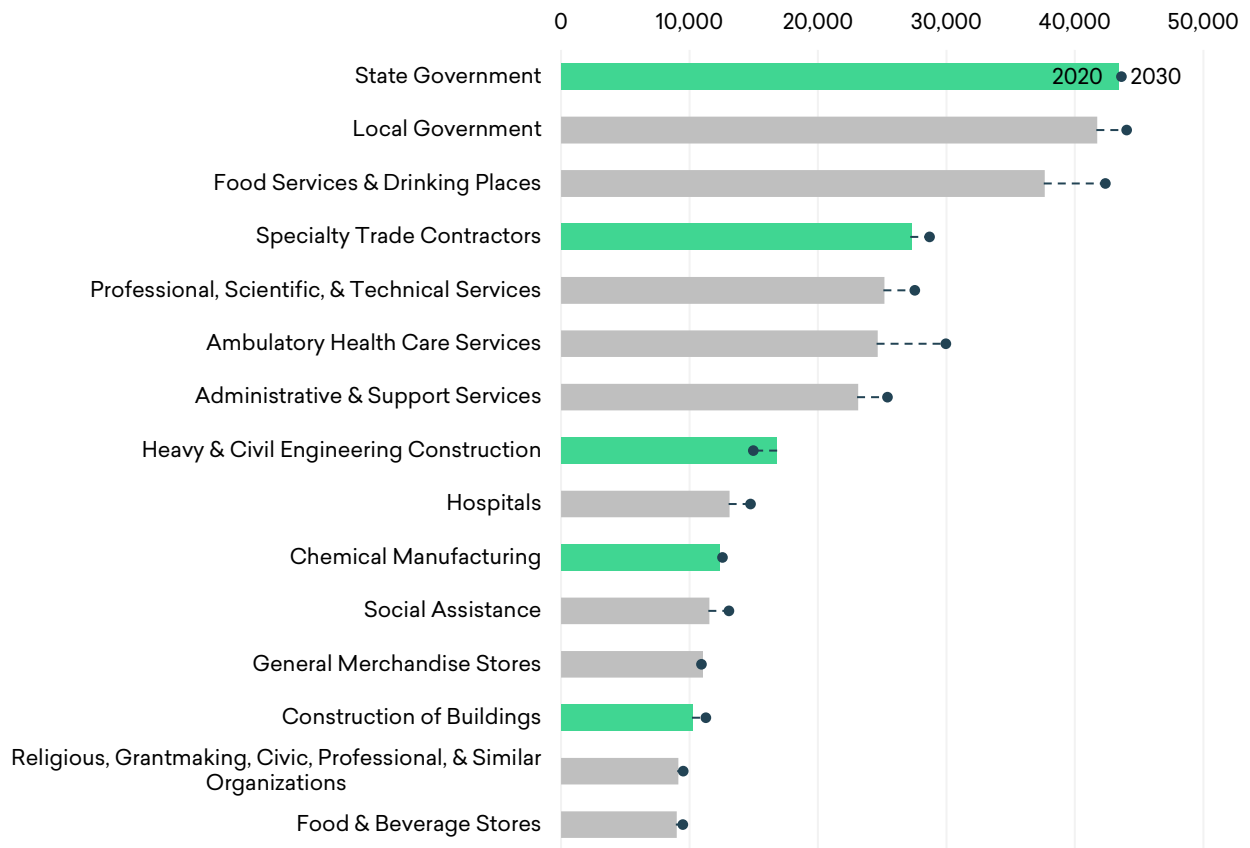
Figure 2.2 presents the 15 largest industry subsectors in the RMLA Region 2, by their 2020 job counts and also shows the industry subsectors’ projected change over the next decade. The region supported 493,120 jobs in 2020, and by 2030, it is projected to add 31,620 new jobs for a 6.4% job increase. As shown in the figure, State Government is the largest employer, with 43,410 jobs in 2020. The Local Government and Food Services & Drinking Places industry subsectors are the next largest, with 41,740 and 37,650 jobs in 2020, respectively. As for growth, Ambulatory Health Care Services is projected to add the most jobs of the top 15 industry subsectors, with a 10-year increase of 5,320 new jobs for a 21.6% job growth. On the other hand, two of the top 15 industry subsectors are expected to contract between 2020 and 2030. They are Heavy & Civil Engineering Construction and General Merchandise Stores.

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2 In Emsi data, all establishments in the main NAICS hierarchy are private-sector only. Jobs in Educational Services and Ambulatory Health Care Services, for example, are not associated with local, state, or federal government jobs. Jobs for public school teachers and city firefighters are in Local Government, whereas college professors and forest firefighters are commonly employed by State Government. Mail carriers and transportation security screeners are examples of jobs in Federal Government.



Figure 2.2: Jobs by Industry Subsector in the RMLA Region 2, 2020 and 2030

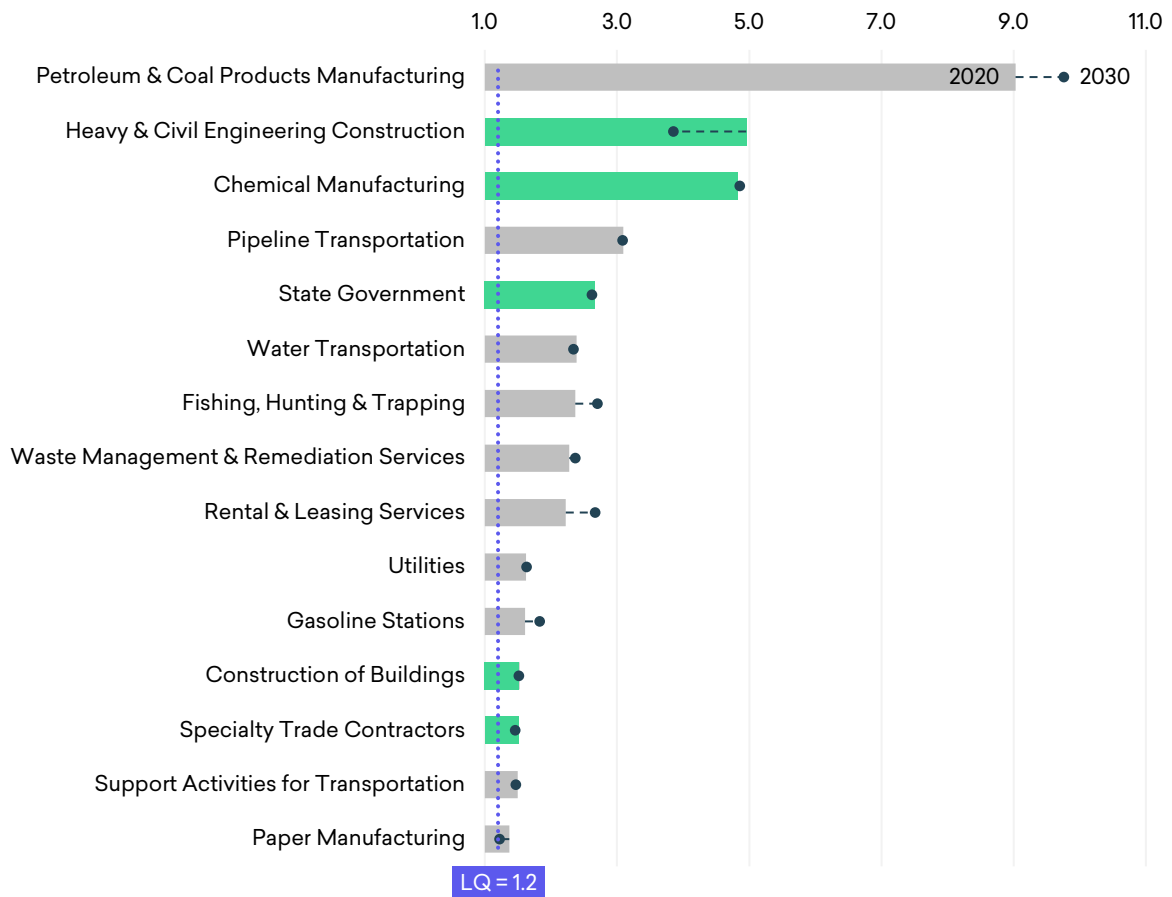


Source: Employees & Self-Employed 2020.4.  
 The green bars represent key industry subsectors in RMLA Region 2.

The employment concentration of the RMLA Region 2's industry subsectors is measured by a location quotient (LQ). LQs are used to assess competitiveness by comparing the concentration of employment in an industry in the region against the employment concentration for that same industry in the U.S. An LQ equal to 1.0 means that the percentage of total employment comprised by an industry in the RMLA Region 2 matches the percentage of total employment of that industry in the U.S. An LQ greater than 1.0 means that the industry has a greater employment share relative to that of the U.S. High LQs, which are typically greater than 1.2, are an indication that the region has a comparative advantage or specialization in an industry.



Figure 2.3: Employment Concentration (LQ) by Industry Subsector in the RMLA Region 2, 2020 and 2030



Source: Employees & Self-Employed 2020.4.  
 The green bars represent key industry subsectors in RMLA Region 2.

The industry subsectors with the 15 highest LQs in the RMLA Region 2 are shown in Figure 2.3. The Petroleum & Coal Products Manufacturing industry subsector had the highest LQ in 2020 at 9.0. The industry subsector is expected to increase in employment concentration between 2020 and 2030 but remain the industry subsector with the largest LQ. The Heavy & Civil Engineering Construction; Chemical Manufacturing; and Pipeline Transportation industry subsectors also have relatively large employment concentrations, with LQs of 5.0, 4.8, and 3.1 in 2020, respectively. As for 10-year growth, Rental & Leasing Services is projected to increase in LQ by 20.0% from an LQ of 2.2 to an LQ of 2.7, which is the largest percent increase among the top 15 industry subsectors in the figure. On the other hand, eight industry subsectors are expected to drop in LQ between 2020 and 2030. Heavy & Civil Engineering Construction has the largest percent decrease (22.2%). Despite the declines, all the region's top 15 industry subsectors will remain above the 1.2 high-LQ threshold.

## OCCUPATIONS WITHIN KEY INDUSTRY SUBSECTORS

Five industry subsectors are found in both Figures 2.2 and 2.3 because they are large employers and have high LQs. Altogether, the industry subsectors represent 22.3% of the RMLA Region 2's jobs. These industry subsectors, in descending order of 2020 jobs, are:

- State Government;
- Specialty Trade Contractors;
- Heavy & Civil Engineering Construction;
- Chemical Manufacturing; and
- Construction of Buildings.

Their appearance in the figures provides an indication of their relative strength in the RMLA Region 2, and thus, we identified the most common occupations within the five industry subsectors, called a staffing pattern.<sup>3</sup> The industry subsectors' staffing patterns provide insight into not only the region's labor market demand, but by extension, the demand for the colleges' program offerings.

The State Government industry subsector in the region supported 43,410 jobs in 2020 and had a LQ of 2.7. It is comprised of five industries at the six-digit NAICS code level. The largest industry is the Colleges, Universities, & Professional Schools (State Government) industry, with 51.1% of jobs in the industry subsector. The top occupation employed by the State Government industry subsector is postsecondary teachers, which constitutes 8.6% of the industry subsector's jobs. It is followed by educational instruction & library workers, all other (6.4%) and office clerks, general (5.9%). Out of the top 25 occupations within the industry subsector, the top five highest paying occupations that require an associate degree or below, in terms of median hourly earnings, are:

- first-line supervisors of correctional officers (\$26.25);
- executive secretaries & executive administrative assistants (\$19.07);
- maintenance & repair workers, general (\$18.80);
- bookkeeping, accounting, & auditing clerks (\$18.54); and
- correctional officers & jailers (\$16.86).

The top three highest paying occupations that require a bachelor's degree are:

- personal service managers, all other; entertainment & recreation managers, except gambling; & managers, all other (\$37.58);

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3 The top occupations, in terms of the percent of total jobs in an industry, are identified using data from the National Occupational Employment Statistics program, projections from the National Industry-Occupation Employment Matrix, and Emsi's proprietary employment data.



- education administrators, postsecondary (\$37.24); and
- postsecondary teachers (\$32.71).

The Specialty Trade Contractors industry subsector in the region supported 27,260 jobs in 2020 and had a LQ of 1.5. It is comprised of 19 industries at the six-digit NAICS code level. The largest industry is the Electrical Contractors & Other Wiring Installation Contractors industry, with 27.7% of jobs in the industry subsector. The top occupation employed by the Specialty Trade Contractors industry subsector is electricians, which constitutes 12.7% of the industry subsector's jobs. It is followed by construction laborers (10.5%) and plumbers, pipefitters, & steamfitters (6.9%). Out of the top 25 occupations within the industry subsector, the top five highest paying occupations that require an associate degree or below, in terms of median hourly earnings, are:

- welders, cutters, solderers, & brazers (\$31.54);
- first-line supervisors of construction trades & extraction workers (\$28.77);
- plumbers, pipefitters, & steamfitters (\$27.46);
- structural iron & steel workers (\$25.07); and
- electricians (\$24.36).

The top three highest paying occupations that require a bachelor's degree are:

- general & operations managers (\$43.28);
- personal service managers, all other; entertainment & recreation managers, except gambling; & managers, all other (\$37.58); and
- construction managers (\$36.81).

The Heavy & Civil Engineering Construction industry subsector in the region supported 16,740 jobs in 2020 and had a LQ of 5.0. It is comprised of six industries at the six-digit NAICS code level. The largest industry is the Other Heavy & Civil Engineering Construction industry, with 42.2% of jobs in the industry subsector. The top occupation employed by the Heavy & Civil Engineering Construction industry subsector is construction laborers, which constitutes 17.6% of the industry subsector's jobs. It is followed by first-line supervisors of construction trades & extraction workers (9.9%) and operating engineers & other construction equipment operators (7.8%). Out of the top 25 occupations within the industry subsector, the top five highest paying occupations that require an associate degree or below, in terms of median hourly earnings, are:

- welders, cutters, solderers, & brazers (\$31.54);
- boilermakers (\$30.18);
- first-line supervisors of construction trades & extraction workers (\$28.77);
- plumbers, pipefitters, & steamfitters (\$27.46); and
- crane & tower operators (\$26.50).

The top three highest paying occupations that require a bachelor's degree are:

- general & operations managers (\$43.28);
- construction managers (\$36.81); and
- cost estimators (\$31.87).

The Chemical Manufacturing industry subsector in the region supported 12,320 jobs in 2020 and had a LQ of 4.8. It is comprised of 29 industries at the six-digit NAICS code level. The largest industry is the Petrochemical Manufacturing industry, with 30.3% of jobs in the industry subsector. The top occupation employed by the Chemical Manufacturing industry subsector is chemical plant & system operators, which constitutes 10.9% of the industry subsector's jobs. It is followed by chemical equipment operators & tenders (9.2%) and first-line supervisors of production & operating workers (5.2%). Out of the top 25 occupations within the industry subsector, the top five highest paying occupations that require an associate degree or below, in terms of median hourly earnings, are:

- first-line supervisors of production & operating workers (\$39.88);
- chemical equipment operators & tenders (\$34.63);
- chemical plant & system operators (\$34.31);
- first-line supervisors of mechanics, installers, & repairers (\$31.57); and
- industrial machinery mechanics (\$30.40).

The top three highest paying occupations that require a bachelor's degree are:

- chemical engineers (\$59.51);
- industrial production managers (\$51.90); and
- general & operations managers (\$43.28).

The Construction of Buildings industry subsector in the region supported 10,270 jobs in 2020 and had a LQ of 1.5. It is comprised of six industries at the six-digit NAICS code level. The largest industry is the Industrial Building Construction industry, with 37.9% of jobs in the industry subsector. The top occupation employed by the Construction of Buildings industry subsector is carpenters, which constitutes 25.2% of the industry subsector's jobs. It is followed by construction laborers (11.8%) and first-line supervisors of construction trades & extraction workers (11.0%). Out of the top 25 occupations within the industry subsector, the top five highest paying occupations that require an associate degree or below, in terms of median hourly earnings, are:

- welders, cutters, solderers, & brazers (\$31.54);
- boilermakers (\$30.18);
- first-line supervisors of construction trades & extraction workers (\$28.77);
- plumbers, pipefitters, & steamfitters (\$27.46); and
- millwrights (\$27.18).

The top three highest paying occupations that require a bachelor's degree are:

- civil engineers (\$44.99);
- general & operations managers (\$43.28); and
- personal service managers, all other; entertainment & recreation managers, except gambling; & managers, all other (\$37.58).

## WORKFORCE COMMUTING PATTERNS

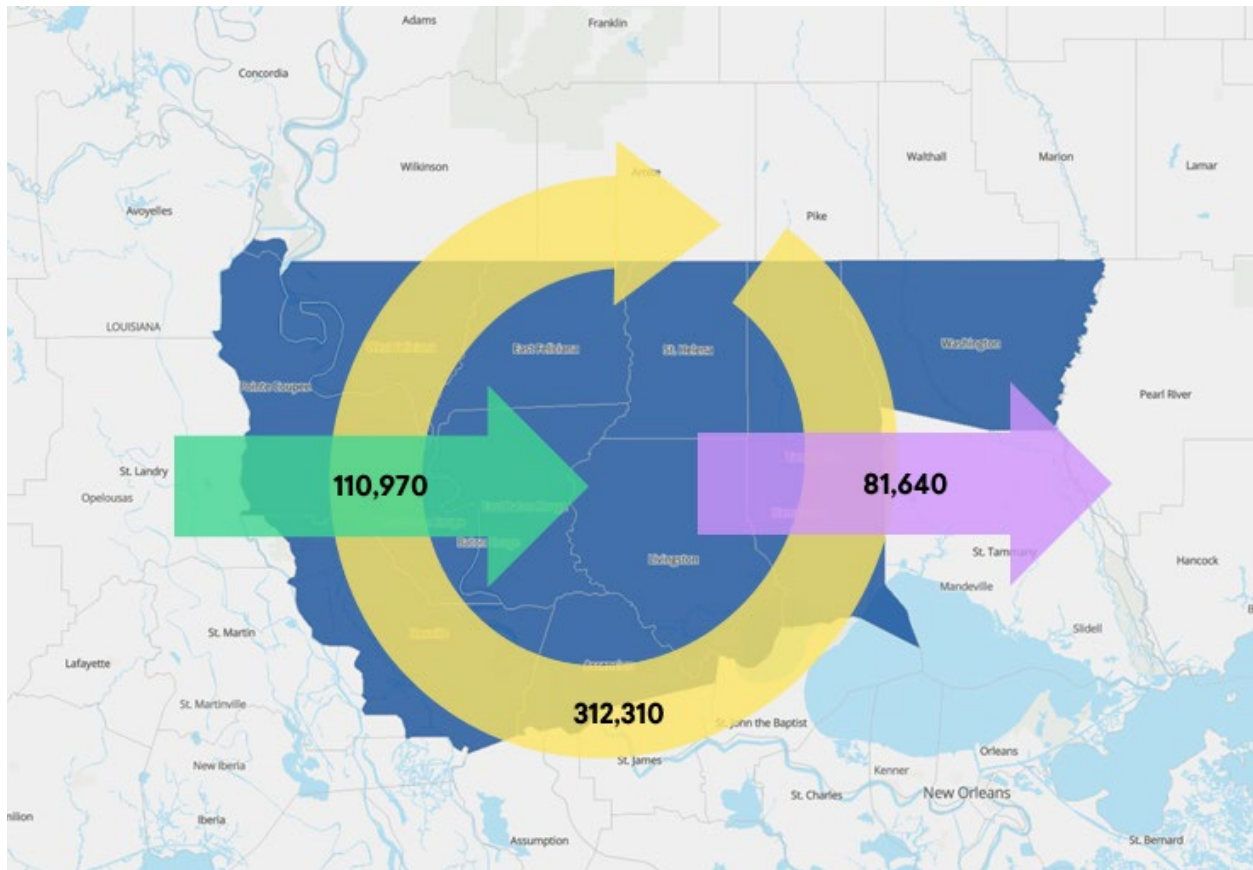
The Longitudinal Employer-Household Dynamics (LEHD) program<sup>4</sup> at the U.S. Census Bureau provides information on the residential and employment locations of workers. Such data show the commuting patterns of regional employees. More specifically, the LEHD data demonstrate the extent to which employees commute to the RMLA Region 2 for work and how many residents commute to surrounding communities for work. Workers from outside the region could be filling current employment gaps, or the region's residents could be out-commuting when there is a surplus of available jobs. The concepts of a "gap" and "surplus" are discussed in greater detail in the first section of Chapter 3.

Figure 2.4 presents the inflow and outflow of jobs to and from the RMLA Region 2. LEHD data identify 423,280 jobs in the region, with 312,310 jobs filled by residents and 110,970 jobs filled by people living outside the region. In addition, 81,640 jobs are held by the region's residents outside the RMLA Region 2. In other words, 81,640 residents commute outside the region for work. The job counts represent primary jobs, as opposed to all jobs, and differ slightly from job counts in the previous sections, which use Emsi's complete employment data (see industry data in Appendix 2). As shown in the figure, fewer workers out-commute than in-commute.

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4 LEHD is an innovative program that uses modern statistical and computing techniques to combine federal and state administrative data on employers and employees with core Census Bureau censuses and surveys while protecting the confidentiality of people and firms that provide the data.

Figure 2.4: RMLA Region 2 Job Inflow and Outflow



- 110,970** Employed in but living outside the region
- 312,310** Living and employed in the region
- 81,640** Living in the region but employed outside

Source: Census Bureau, Center for Economic Studies.

Table 2.1 provides further insight into the places where the region’s residents work. As shown in the figure, the region’s residents are out-commuting to neighboring parishes for work, but the greatest number of residents work in East Baton Rouge Parish (49% of all jobs). Table 2.2 also shows commuting patterns, except the data highlight the parishes in which the region’s workers reside.

Table 2.1: Parishes where RMLA Region 2 Residents Work

PARISH OF EMPLOYMENT	JOBS	% JOBS
East Baton Rouge Parish, LA	193,860	49%
Ascension Parish, LA	30,120	8%
Tangipahoa Parish, LA	28,210	7%
Livingston Parish, LA	19,850	5%
Jefferson Parish, LA	15,500	4%
Iberville Parish, LA	11,750	3%
St. Tammany Parish, LA	11,080	3%
Orleans Parish, LA	10,210	3%
West Baton Rouge Parish, LA	9,360	2%
Washington Parish, LA	6,960	2%
All Other	57,060	14%
<b>Total Primary Jobs, Residents</b>	<b>393,950</b>	<b>100%</b>

Source: Census Bureau, Center for Economic Studies.

Table 2.2: Parishes where RMLA Region 2 Workers Live

PARISH OF RESIDENCE	JOBS	% JOBS
East Baton Rouge Parish, LA	150,370	36%
Livingston Parish, LA	44,280	10%
Ascension Parish, LA	40,500	10%
Tangipahoa Parish, LA	29,880	7%
Jefferson Parish, LA	11,210	3%
St. Tammany Parish, LA	11,160	3%
Iberville Parish, LA	9,950	2%
West Baton Rouge Parish, LA	9,760	2%
Washington Parish, LA	8,620	2%
Orleans Parish, LA	7,430	2%
All Other	100,130	24%
<b>Total Primary Jobs, Workers</b>	<b>423,280</b>	<b>100%</b>

Source: Census Bureau, Center for Economic Studies.





# EDUCATIONAL ATTAINMENT

Educational attainment data are useful for targeting specific population groups with low education levels. The population and educational attainment numbers in this section are based on Emsi’s demographic data and publicly available sources from state and federal agencies. Sources include annual population estimates and population projections from the U.S. Census Bureau and birth and mortality rates from the U.S. Health Department. In addition, demographic information relies on the annual results of the American Community Survey. Educational attainment data cover the population in the RMLA Region 2 aged 25 years or more, referred to as adults, and indicate the highest award level achieved.

Demographic information is presented by gender and the major race and ethnic groups, and educational attainment data are broken out according to the following award categories:

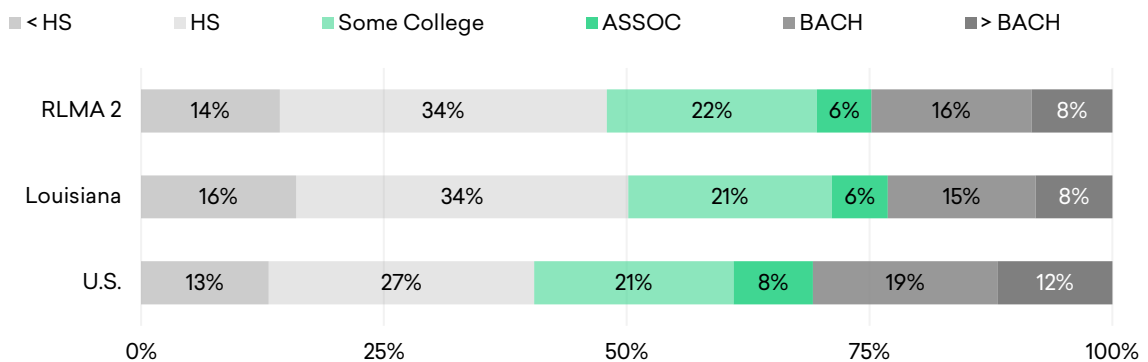
- Less than a high school diploma (<HS);
- High school diploma or equivalent (HS);
- Some college;<sup>5</sup>
- Associate degree (Assoc);
- Bachelor’s degree (Bach);
- Greater than a bachelor’s degree (>Bach).

About 671,930 adults live in the RMLA Region 2, and Figure 2.5 displays their educational attainments, without reference to gender and the major race and ethnic groups. State and national data are also presented for context. In the region, 48.0% of adults have a high school diploma or less, which is less than the state average (50.1%) and more than the national average (40.5%). Out of all the award categories in the figure, the people who are most likely to seek education and training from the colleges are those in the “Less than High School Diploma,” “High School Diploma,” and “Some College” categories. Together, these categories total 467,540 people, or 69.6% of the region’s adults.

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5 The “Some College” category includes individuals who attended college but did not successfully obtain a degree and individuals who have received a postsecondary vocational award or professional certification but did not receive an associate or bachelor’s degree.

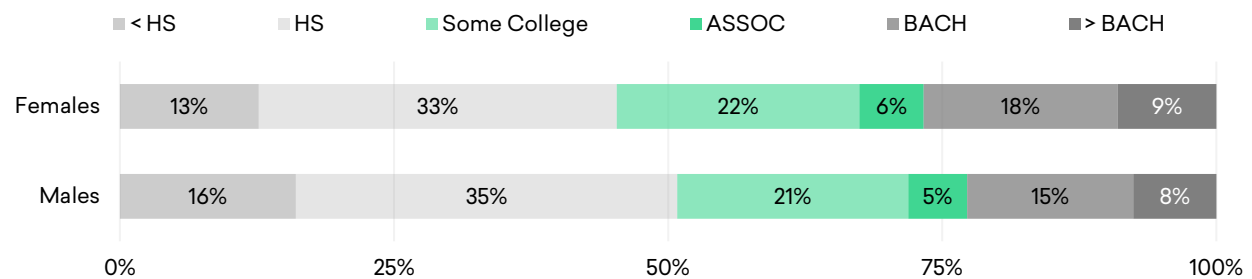
Figure 2.5: Highest Educational Attainments of Adults in the RMLA Region 2, Louisiana, and the U.S.



Numbers may not sum due to rounding.  
 Source: Emsi demographics data and U.S. Census Bureau, American Community Survey.

Between female and male adults in the RMLA Region 2, there is little variation in the distribution of their award categories. Twenty-two percent of the region’s female adults and 21.1% of the region’s male adults have some college education but no degree, which represent 77,360 females and 67,890 males. Six percent of female adults and 5.4% of male adults in the region have an associate degree as their highest award level. This information appears in Figure 2.6.

Figure 2.6: Highest Educational Attainments of Adults in the RMLA Region 2 by Gender



Numbers may not sum due to rounding.  
 Source: Emsi demographics data and U.S. Census Bureau, American Community Survey.

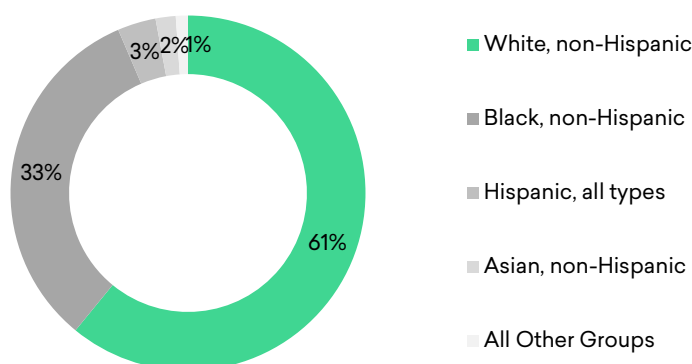
Table 2.3 and Figure 2.7 show the adults in the RMLA Region 2 by the major race and ethnic groups. As shown, 60.9% of the region’s adults are White, non-Hispanic. Another 32.6% of adults are Black, non-Hispanic and 3.5% are Hispanic, all types, the next largest groups. Altogether, less than 3% percent of the region’s adults are Asian, non-Hispanic; Two or more races, non-Hispanic; American Indian or Alaskan Native, non-Hispanic; and Native Hawaiian or Pacific Islander, non-Hispanic.

Table 2.3: Adults in the RMLA Region 2 by Major Race and Ethnic Groups

GROUP	POPULATION	% POPULATION
White, non-Hispanic	409,349	60.9%
Black, non-Hispanic	219,366	32.6%
Hispanic, all types	23,486	3.5%
Asian, non-Hispanic	12,313	1.8%
Two or more races, non-Hispanic	5,249	0.8%
American Indian or Alaskan Native, non-Hispanic	1,970	0.3%
Native Hawaiian or Pacific Islander, non-Hispanic	198	0.0%
<b>Total</b>	<b>671,932</b>	<b>100%</b>

Source: Emsi demographics data and U.S. Census Bureau, American Community Survey.

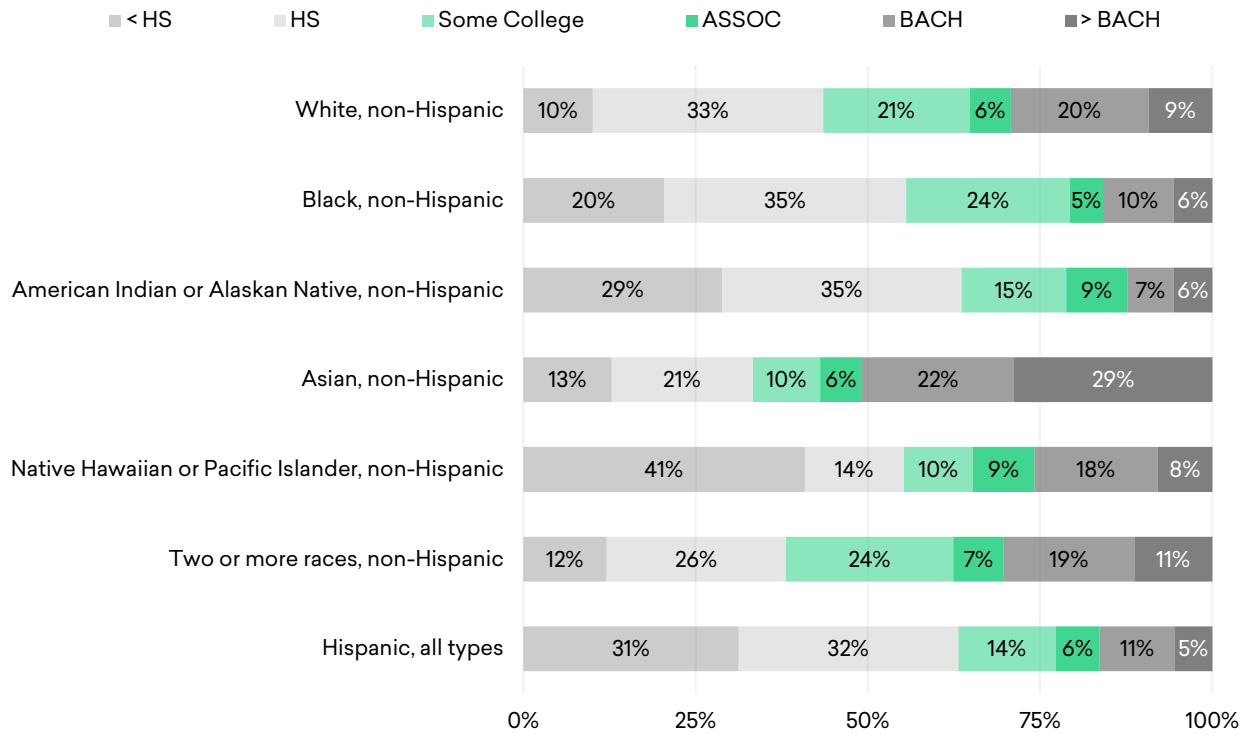
Figure 2.7: Adults in the RMLA Region 2 by Major Race and Ethnic Groups



Source: Emsi demographics data and U.S. Census Bureau, American Community Survey.

Figure 2.8 displays the highest educational attainment of the RMLA Region 2's adults by their major race and ethnic groups. Asian, non-Hispanic adults have the highest percentage of adults with a postsecondary education (66.7%) among all the groups. However, the group accounts for a relatively small portion of the region's adults. The Two or more races, non-Hispanic group follows with 61.9%. American Indian or Alaskan Native, non-Hispanic adults and Hispanic, all types adults have the lowest levels of educational attainment in the region. For these groups, only 36.4% and 36.9%, respectively, of the adults in the groups have had education beyond high school. Across all groups, these data suggest that there are many opportunities to increase the educational attainments of the region's adults, whether such actions involve outreach to local high schools or supporting the colleges' students who plan to transfer into a bachelor's degree level program.

Figure 2.8: Highest Educational Attainments of Adults in the RMLA Region 2 by Major Race and Ethnic Groups



Numbers may not sum due to rounding.

Source: Emsi demographics data and U.S. Census Bureau, American Community Survey.





# Program Demand Gap Analysis

With the region's top industry subsectors and workforce in mind, the program demand gap analysis can now be conducted, answering the following question:

*Where are there misalignments between the workforce demand and the supply of the colleges' completions?*

This chapter outlines the deficit of the colleges' program completers to the workforce (gap), as well as the oversupply of completions to the workforce (surplus). The occupations directly related or mapped to the significant gaps are also displayed. Figure 3.1, below, provides a high level overview of the colleges' programs and their alignment with the RMLA Region 2 workforce.

**High demand, low supply** programs are those that have a high number of annual job openings but lack of adequate regional completers. These programs have large gaps and should be considered for expansion since there is a demand for people with these skill sets. Consideration should be given to the median hourly wage of the program.

**High demand, high supply** programs are those that have a high number of annual job openings as well as a high number of regional completers. These programs are satisfying the region's labor market demands and are worth continuing offering.

**Low demand, low supply** programs are those that lack both annual job openings and completers in the RMLA Region 2. Since there is not an apparent need for these skill sets in the regional workforce, it is worth reevaluating the need for offering these programs.

**Low demand, high supply** programs are those that produce far more regional completers than there are annual job openings. Large surpluses could suggest that completers are finding employment outside of the region. It may be beneficial to track where completers are finding work to evaluate the skills being sought by employers to better prepare completers for in-region employment.



Figure 3.1: Key Findings on Program Alignment with the RMLA Region 2 Workforce

<p><b>HIGH DEMAND, LOW SUPPLY</b></p> <p><i>How can we expand these program opportunities?</i></p> <p>Construction Trades, General (CERT)</p> <p>Criminal Justice/Safety Studies (CERT &amp; ASSOC)</p> <p>Accounting Technology/Technician &amp; Bookkeeping (CERT)</p> <p>Industrial Mechanics &amp; Maintenance Technology (ASSOC)</p> <p>Culinary Arts/Chef Training (ASSOC)</p>	<p><b>HIGH DEMAND, HIGH SUPPLY</b></p> <p><i>Can we maintain focus on program quality &amp; student success?</i></p> <p>Licensed Practical/Vocational Nurse Training (CERT)</p> <p>Welding Technology/Welder (CERT)</p> <p>Culinary Arts/Chef Training (ASSOC)</p> <p>Computer Science (T-T)</p>
<p><b>LOW DEMAND, LOW SUPPLY</b></p> <p><i>Should we discontinue these programs?</i></p> <p>Pipefitting/Pipefitter &amp; Sprinkler Fitter (CERT)</p> <p>Barbering/Barber (CERT)</p> <p>Drafting &amp; Design Technology/Technician, General (T-T)</p>	<p><b>LOW DEMAND, HIGH SUPPLY</b></p> <p><i>Are we connecting these programs to opportunities outside the parish?</i></p> <p>Medical/Clinical Assistant (CERT)</p> <p>Drafting &amp; Design Technology/Technician, General (CERT &amp; ASSOC)</p> <p>Industrial Production Technologies/Technicians, Other (CERT &amp; ASSOC)</p>

Source: Emsi program demand gap model.

## INTERPRETATION

The terms used in the analysis are as follows:

**Gap** Represents a deficit, or when there are more job openings in an occupation than there are completions. If left unaddressed, a gap may lead to missed opportunities for economic growth and put stress on local businesses to find the necessary talent elsewhere. Significant gaps translate into higher human resources costs and decreased efficiencies in the economic system. They also provide an opportunity for postsecondary educational institutions to develop new programs and/or strengthen their current programs.

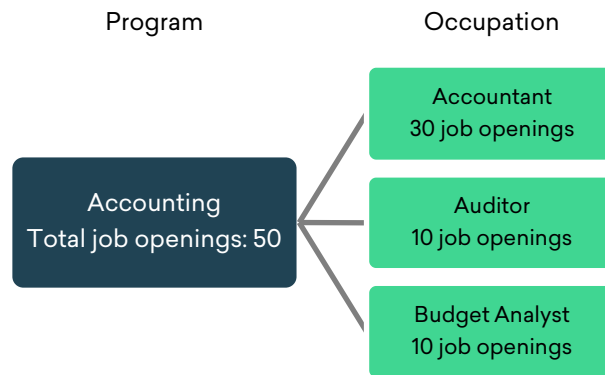
**Surplus** Represents an oversupply, or when there are more completions than there are job openings in an occupation. If left unaddressed, significant surpluses may lead to higher unemployment rates or higher attrition rates—the colleges could be educating a workforce that is leaving the region after program completion because of a lack of job opportunities.

When reviewing the results of the analysis, consider that not all gaps or surpluses indicate necessary program adjustments. Due to labor market inefficiencies, it is common for most programs to face a certain level of gap or surplus. This means only significant gaps or

surpluses should be reviewed or further developed. Given the size and characteristics of the RMLA Region 2, any gap or surplus within 300 jobs either above or below zero should be considered within the normal range of labor market fluctuations. In the following sections, the program gaps and surpluses are discussed by award level and presented as figures and tables.

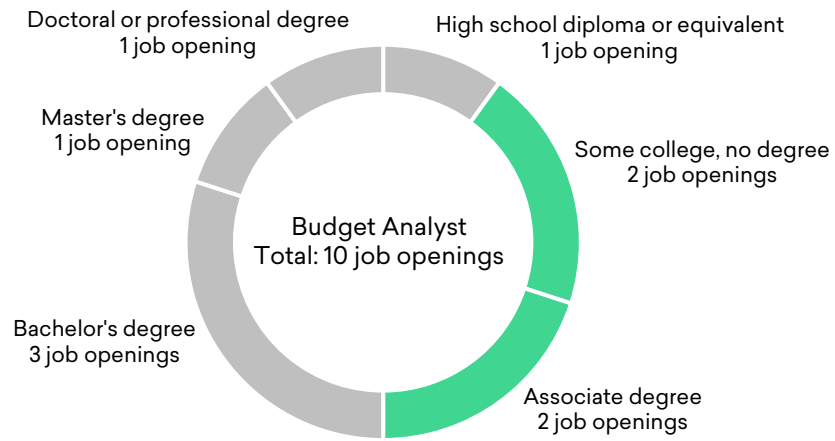
The figures show the gap between job demand and the supply of program completions. An explanation of job demand is warranted here, and a more detailed description can be found in Appendix 5. A program's job demand is measured as its total number of annual job openings, on average, from 2020 to 2030. The total is calculated as the sum of the regional job openings for each occupation mapped to the program, as illustrated in Figure 3.2.

Figure 3.2: Example of One Program Mapped to Three Occupations



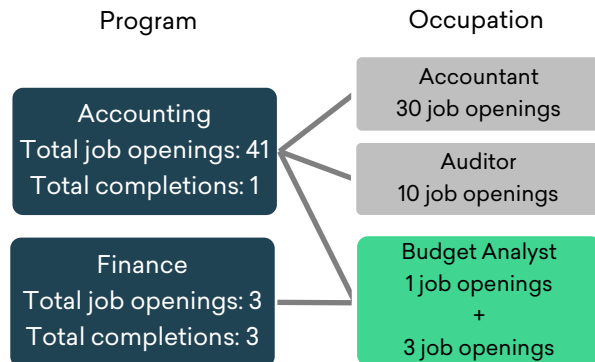
Furthermore, an occupation's job openings are not a gross measure of job openings available in the region. For every occupation, job openings have been weighted by the program's award level and one level below and account for the highest educational attainments of those employed in the position. The educational attainments in this chapter (and the following) are for adults less than 34 years, which differ from the previous chapter but better reflect the colleges' student population. Figure 3.3 illustrates how this methodology applies to an occupation's total job openings. For example, four job openings or 40% of total job openings are available to budget analysts at the associate degree level, seeing that there are a total of 10 job openings, 20% of those working in the occupation have an associate degree level of education, and another 20% have some college education and no degree.

Figure 3.3: Example of an Occupation's Weighted Job Openings by Award Level



Finally, job openings are de-duplicated and scaled across programs, when an occupation is mapped to more than one program. As illustrated in Figure 3.4, budget analysts, which have four total job openings, are mapped to two programs. However, the Finance program is three-times the size of the Accounting program, measured in terms of completions. Thus, one job opening is portioned to the Accounting program and three job openings to the Finance program.

Figure 3.4: Example of Two Programs with One Shared Occupation





Supply is shown as the average number of program completions in the region, by award level, between 2017 and 2019.<sup>6</sup> BRCC, NTCC, and RPCC are not the only postsecondary educational institutions in the RMLA Region 2 reporting to IPEDS,<sup>7</sup> the source of the completions data. The gap, then, is the difference between job openings and program completions. Appendix 4 has the colleges' program to occupation map with adjusted employment, and Appendix 5 identifies all the certificate and degree-granting institutions in the RMLA Region 2.

A great amount of data is presented in the tables. The first set shows the gaps and surpluses across all the programs offered at the colleges by award level. The tables include the Classification of Instructional Program (CIP) code and title, the average annual number of job openings associated with the program (which have been de-duplicated using the process outlined in Appendix 5), the average annual program completions from the region and from the colleges, and the gap or surplus for the RMLA Region 2. The programs' median hourly wage rates are specific to the RMLA Region 2.

The second set of tables identify the occupations mapped to the programs with a significant gap, by award level, and show detailed occupational data. The tables include the CIP code, CIP title, and occupations mapped to the program, by their Standard Occupational Classification (SOC) codes and titles. The regional job counts, by occupation, are shown for 2020 and 2030 with the change in jobs and average annual job openings for those years. The occupations' median hourly wage rates are specific to the RMLA Region 2. See Appendix 6 for a complete list of job projections and Appendix 7 for unemployment information by industry and occupation.

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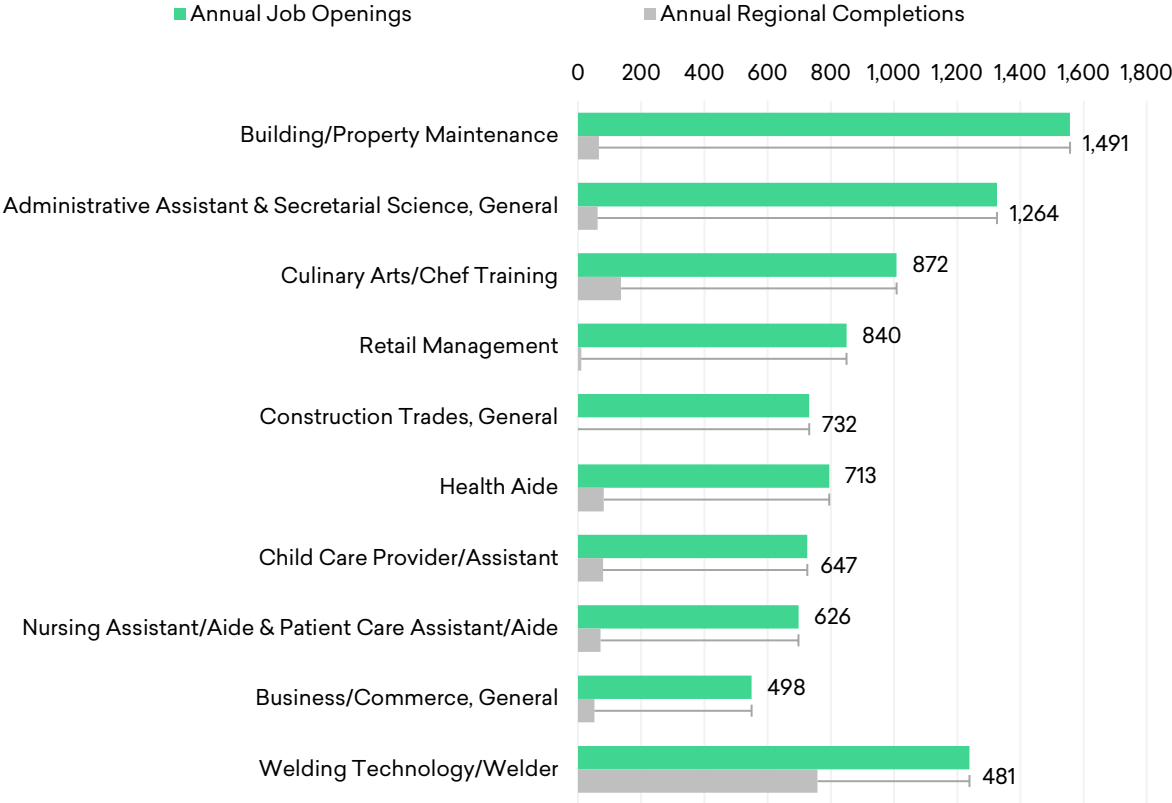
6 The average annual completions data for the colleges were updated to the years 2018 to 2020 and reviewed for accuracy by the colleges.

7 IPEDS refers to the Integrated Postsecondary Education Data System, which gathers information from every college, university, and technical and vocational institution that participates in the federal student financial aid program.

### CERTIFICATE LEVEL ANALYSIS

Certificates are reported to IPEDS as awards of less than one academic year and awards of at least one but less than two academic years. In this section, the colleges’ unique certificate level programs aggregate into 46 programs, when they are classified by their six-digit CIP codes. Average projected annual job openings consider someone with a high school diploma level of education and some college education but no degree. Furthermore, an occupation’s job openings are weighted by the number of other programs mapped to an occupation and scaled according to a program’s completions.

Figure 3.5: Top 10 Certificate Level Programs with a Gap



Source: Emsi program demand gap model.

The largest certificate level gap, at 1,491 job openings, is in the Building/Property Maintenance program (Figure 3.5). Within the program, the colleges have 66 average annual completions and are the only regional institutions with completers in this program. Table 3.1 shows all the award level’s program gaps and surpluses. There are no programs with a significant surplus of program completions above the 300-openings level of significance. Programs with a significant gap have been highlighted in Table 3.1.

Table 3.1: Gaps and Surpluses for Certificate Level Programs

CIP CODE	CIP TITLE	ANNUAL JOB OPENINGS	ANNUAL COMPLETIONS		GAP OR SURPLUS	MEDIAN HOURLY WAGE
			REGION	THE COLLEGES		
46.0401	Building/Property Maintenance	1,557	66	66	1,491	\$12.09
52.0401	Administrative Assistant & Secretarial Science, General	1,326	62	44	1,264	\$14.22
12.0503	Culinary Arts/Chef Training	1,008	136	106	872	\$13.51
52.0212	Retail Management	850	10	10	840	\$15.28
46.0000	Construction Trades, General	732	<1	<1	732	\$21.87
51.2601	Health Aide	795	82	82	713	\$9.46
19.0709	Child Care Provider/Assistant	726	79	79	647	\$9.62
51.3902	Nursing Assistant/Aide & Patient Care Assistant/Aide	698	72	67	626	\$9.46
52.0101	Business/Commerce, General	549	52	52	498	\$39.32
48.0508	Welding Technology/Welder	1,239	758	681	481	\$26.43
46.0201	Carpentry/Carpenter	554	94	94	460	\$21.43
52.0302	Accounting Technology/Technician & Bookkeeping	440	11	11	429	\$19.02
43.0104	Criminal Justice/Safety Studies	398	9	9	389	\$20.71
47.0201	Heating, Air Conditioning, Ventilation & Refrigeration Maintenance Technology/Technician	514	149	115	364	\$22.71
46.0302	Electrician	457	107	96	349	\$23.33
51.3901	Licensed Practical/Vocational Nurse Training	503	251	174	252	\$15.45
01.0601	Applied Horticulture/Horticulture Operations, General	282	51	51	231	\$14.48
52.0411	Customer Service Support/Call Center/Teleservice Operation	231	3	3	228	\$15.62
48.0501	Machine Tool Technology/Machinist	227	21	21	206	\$24.82
51.0904	Emergency Medical Technology/Technician (EMT Paramedic)	220	25	25	195	\$13.26
46.0301	Electrical & Power Transmission Installation/Installer, General	223	30	30	194	\$24.10
47.0303	Industrial Mechanics & Maintenance Technology	127	13	13	114	\$27.49
12.0401	Cosmetology/Cosmetologist, General	347	233	9	114	\$11.35
49.0399	Marine Transportation, Other	110	3	3	107	\$23.59
47.0604	Automobile/Automotive Mechanics Technology/Technician	272	185	185	87	\$21.92
50.0710	Printmaking	69	<1	<1	69	\$21.25



CIP CODE	CIP TITLE	ANNUAL JOB OPENINGS	ANNUAL COMPLETIONS		GAP OR SURPLUS	MEDIAN HOURLY WAGE
			REGION	THE COLLEGES		
51.0808	Veterinary/Animal Health Technology/Technician & Veterinary Assistant	68	9	9	60	\$11.94
47.0605	Diesel Mechanics Technology/Technician	89	33	33	56	\$22.16
50.0402	Commercial & Advertising Art	56	5	5	50	\$19.00
51.1009	Phlebotomy Technician/Phlebotomist	46	18	1	28	\$16.73
49.0199	Aeronautics/Aviation/Aerospace Science & Technology, General	28	<1	<1	28	\$21.36
47.0603	Autobody/Collision & Repair Technology/Technician	37	11	11	26	\$19.84
51.0805	Pharmacy Technician/Assistant	99	74	22	25	\$14.71
51.0707	Health Information/Medical Records Technology/Technician	21	6	6	15	\$19.62
10.0303	Prepress/Desktop Publishing & Digital Imaging Design	13	1	1	11	\$20.78
47.0607	Airframe Mechanics & Aircraft Maintenance Technology/Technician	14	4	4	10	\$31.82
47.0608	Aircraft Powerplant Technology/Technician	11	4	4	8	\$31.55
11.1001	Network & System Administration/Administrator	15	8	8	7	\$24.95
46.0502	Pipefitting/Pipefitter & Sprinkler Fitter	1	<1	<1	(0)	\$25.78
15.0404	Instrumentation Technology/Technician	102	107	89	(4)	\$28.28
48.0303	Upholstery/Upholsterer	3	14	14	(11)	\$10.80
12.0402	Barbering/Barber	2	22	<1	(20)	\$10.10
15.1301	Drafting & Design Technology/Technician, General	43	102	102	(59)	\$26.31
11.0901	Computer Systems Networking & Telecommunications	169	242	242	(72)	\$29.68
51.0801	Medical/Clinical Assistant	147	314	62	(167)	\$15.12
15.0699	Industrial Production Technologies/Technicians, Other	10	208	208	(198)	\$39.38

Numbers may not sum due to rounding.  
Source: Emsi program demand gap model.

Several occupations mapped to Building/Property Maintenance, such as janitors & cleaners, except maids & housekeeping cleaners; maids & housekeeping cleaners; and landscaping & groundskeeping workers (Table 3.2). The median hourly wage for the Building/Property Maintenance program is \$12.09, when weighted by the openings and median hourly wages for each occupation mapped to the program. For context, the Louisiana state minimum



wage is \$7.25<sup>8</sup> per hour, and the state’s living wage is \$11.28 per hour for a household with one working adult and no children.<sup>9</sup> Program expansion is not currently recommended given the low median hourly wage of the program, at the current level of completions there appears to be enough graduates to fill the higher wage occupations mapped to the program.<sup>10</sup>

This step-by-step analysis of evaluating a program by its occupational job openings, job counts, and wage rates can be applied to the other programs in Table 3.2. In general, occupations with high wages are more noteworthy than those with low wages. Also, if occupational forecasts are not positive, program development may not be a priority at this time. Keep in mind that there could be other sources of skilled workers filling the gaps, such as unemployed workers or workers from outside the RMLA Region 2.

Table 3.2: Occupations Mapped to Certificate Level Programs with a Significant Gap

SOC CODE	SOC TITLE	2020 JOBS	2030 JOBS	JOB CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Building/Property Maintenance (CIP Code 46.0401)						
37-2011	Janitors & Cleaners, Except Maids & Housekeeping Cleaners	7,923	8,927	1,005	826	\$10.13
37-2012	Maids & Housekeeping Cleaners	3,613	3,923	309	315	\$9.83
37-3011	Landscaping & Groundskeeping Workers	3,501	3,690	189	159	\$13.38
47-2141	Painters, Construction & Maintenance	2,202	2,097	(105)	131	\$19.76
37-1011	First-Line Supervisors of Housekeeping & Janitorial Workers	542	613	72	46	\$15.59
49-9071	Maintenance & Repair Workers, General	5,754	6,186	432	25	\$18.80
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	5,298	5,335	37	24	\$28.77
49-1011	First-Line Supervisors of Mechanics, Installers, & Repairers	2,228	2,325	98	17	\$31.57
37-1012	First-Line Supervisors of Landscaping, Lawn Service, & Groundskeeping Workers	396	404	8	14	\$16.65
Administrative Assistant & Secretarial Science, General (CIP Code 52.0401)						
43-9061	Office Clerks, General	10,396	10,558	162	491	\$12.05

8 The Louisiana minimum wage as of January 1, 2020 is \$7.25 per hour. Source: Emsi Complete Employment Data.

9 Living wage calculations provided by Dr. Amy K. Glasmeier and the Massachusetts Institute of Technology. See Appendix 8.

10 Further research must be conducted before making a final determination, such as top employer identification within the region; business surveys to verify the data; resume and job postings analysis to determine trending skills for individuals with similar educations; industry recommendations on curriculum development; and analysis of the strengths, weaknesses, and capacities of similar programs at other regional higher education institutions. Emsi is available to conduct this research; see your Emsi contact for details.



<b>SOC CODE</b>	<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>JOB CHANGE</b>	<b>ANNUAL JOB OPENINGS</b>	<b>MEDIAN HOURLY WAGE</b>
43-6014	Secretaries & Administrative Assistants, Except Legal, Medical, & Executive	7,285	7,076	(209)	406	\$15.48
43-4171	Receptionists & Information Clerks	3,308	3,612	303	220	\$12.88
43-6011	Executive Secretaries & Executive Administrative Assistants	3,446	2,880	(567)	178	\$19.07
43-9021	Data Entry Keyers	608	498	(111)	15	\$14.76
43-4071	File Clerks	243	225	(18)	11	\$11.60
43-9022	Word Processors & Typists	87	70	(17)	5	\$14.80
<b>Culinary Arts/Chef Training (CIP Code 12.0503)</b>						
35-1012	First-Line Supervisors of Food Preparation & Serving Workers	3,274	3,724	449	409	\$14.80
35-2014	Cooks, Restaurant	2,550	3,186	636	303	\$11.87
35-2015	Cooks, Short Order	1,233	1,250	17	117	\$10.05
35-2012	Cooks, Institution & Cafeteria	1,033	1,132	99	106	\$10.32
11-9051	Food Service Managers	612	694	83	54	\$23.88
35-1011	Chefs & Head Cooks	223	262	39	19	\$21.42
35-2013	Cooks, Private Household	6	7	1	1	\$18.00
<b>Retail Management (CIP Code 52.0212)</b>						
53-7065	Stockers and Order Fillers	5,315	5,547	232	525	\$11.39
41-1011	First-Line Supervisors of Retail Sales Workers	4,539	4,636	97	204	\$17.28
11-1021	General & Operations Managers	6,768	7,429	661	45	\$43.28
33-9098	School Bus Monitors and Protective Service Workers, All Other	203	213	10	41	\$16.26
13-1028	Buyers & Purchasing Agents	745	744	(1)	32	\$24.62
*13-1198	Project Management Specialists and Business Operations Specialists, All Other	5,245	5,525	280	3	\$25.85
<b>Construction Trades, General (CIP Code 46.0000)</b>						
47-2061	Construction Laborers	7,501	7,719	218	555	\$16.24
51-1011	First-Line Supervisors of Production & Operating Workers	2,404	2,525	121	172	\$39.88
41-4012	Sales Representatives, Wholesale & Manufacturing, Except Technical & Scientific Products	4,101	4,359	258	3	\$26.15
47-2031	Carpenters	6,107	6,202	96	0	\$21.82
11-1021	General & Operations Managers	6,768	7,429	661	0	\$43.28
47-2111	Electricians	4,155	4,307	152	0	\$24.36
*11-9198	Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	4,124	4,395	271	0	\$37.58
11-9021	Construction Managers	1,595	1,655	60	0	\$36.81
13-1051	Cost Estimators	666	726	60	0	\$31.87



SOC CODE	SOC TITLE	2020 JOBS	2030 JOBS	JOB CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
49-9071	Maintenance & Repair Workers, General	5,754	6,186	432	0	\$18.80
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	5,298	5,335	37	0	\$28.77
47-2152	Plumbers, Pipefitters, & Steamfitters	3,867	3,813	(54)	0	\$27.46
49-1011	First-Line Supervisors of Mechanics, Installers, & Repairers	2,228	2,325	98	0	\$31.57
11-1011	Chief Executives	388	407	19	0	\$81.12
Health Aide (CIP Code 51.2601)						
31-1128	Home Health and Personal Care Aides	9,615	11,921	2,306	704	\$9.21
31-1131	Nursing Assistants	4,229	4,648	420	79	\$11.38
31-1133	Psychiatric Aides	182	199	17	9	\$11.30
31-1132	Orderlies	91	99	8	4	\$11.21
Child Care Provider/Assistant (CIP Code 19.0709)						
39-9011	Childcare Workers	4,161	4,315	153	404	\$9.29
25-9045	Teaching Assistants, Except Postsecondary	4,244	4,525	281	291	\$9.50
21-1093	Social & Human Service Assistants	552	652	100	28	\$14.54
21-1021	Child, Family, & School Social Workers	207	243	36	3	\$18.65
Nursing Assistant/Aide & Patient Care Assistant/Aide (CIP Code 51.3902)						
31-1128	Home Health and Personal Care Aides	9,615	11,921	2,306	617	\$9.21
31-1131	Nursing Assistants	4,229	4,648	420	69	\$11.38
31-1133	Psychiatric Aides	182	199	17	8	\$11.30
31-1132	Orderlies	91	99	8	4	\$11.21
Business/Commerce, General (CIP Code 52.0101)						
11-1021	General & Operations Managers	6,768	7,429	661	226	\$43.28
*11-9198	Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	4,124	4,395	271	81	\$37.58
11-9021	Construction Managers	1,595	1,655	60	52	\$36.81
11-3011	Administrative Services Managers	1,120	1,216	96	43	\$29.77
13-1051	Cost Estimators	666	726	60	32	\$31.87
11-3071	Transportation, Storage, & Distribution Managers	455	487	32	23	\$37.53
13-1111	Management Analysts	1,115	1,280	166	18	\$36.92
*13-1198	Project Management Specialists and Business Operations Specialists, All Other	5,245	5,525	280	17	\$25.85
11-3051	Industrial Production Managers	494	538	43	16	\$51.90
11-2022	Sales Managers	655	731	76	13	\$42.59



SOC CODE	SOC TITLE	2020 JOBS	2030 JOBS	JOB CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
11-9151	Social & Community Service Managers	656	712	55	11	\$36.35
11-1011	Chief Executives	388	407	19	6	\$81.12
13-1121	Meeting, Convention, & Event Planners	123	154	31	6	\$21.43
*15-1299	Computer Occupations, All Other	939	1,017	78	5	\$29.52
Welding Technology/Welder (CIP Code 48.0508)						
49-9071	Maintenance & Repair Workers, General	5,754	6,186	432	282	\$18.80
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	5,298	5,335	37	281	\$28.77
47-2152	Plumbers, Pipefitters, & Steamfitters	3,867	3,813	(54)	277	\$27.46
51-4121	Welders, Cutters, Solderers, & Brazers	3,232	3,252	20	269	\$31.54
47-2221	Structural Iron & Steel Workers	514	566	52	52	\$25.07
47-2211	Sheet Metal Workers	651	707	56	50	\$22.79
47-2171	Reinforcing Iron & Rebar Workers	275	288	13	22	\$29.91
51-4122	Welding, Soldering, & Brazing Machine Setters, Operators, & Tenders	80	77	(3)	6	\$28.28
Carpentry/Carpenter (CIP Code 46.0201)						
47-2031	Carpenters	6,107	6,202	96	428	\$21.82
47-3012	Helpers--Carpenters	420	435	15	40	\$18.04
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	5,298	5,335	37	35	\$28.77
51-7011	Cabinetmakers & Bench Carpenters	290	314	24	24	\$12.61
51-7041	Sawing Machine Setters, Operators, & Tenders, Wood	123	134	11	11	\$15.83
51-7042	Woodworking Machine Setters, Operators, & Tenders, Except Sawing	75	87	12	9	\$17.12
47-4011	Construction & Building Inspectors	226	249	24	6	\$25.79
51-7031	Model Makers, Wood	2	4	1	<1	\$17.08
51-7032	Patternmakers, Wood	1	1	(0)	<1	\$17.06
Accounting Technology/Technician & Bookkeeping (CIP Code 52.0302)						
43-3031	Bookkeeping, Accounting, & Auditing Clerks	5,325	5,337	12	375	\$18.54
43-3051	Payroll & Timekeeping Clerks	522	519	(3)	30	\$18.99
13-2011	Accountants & Auditors	3,319	3,602	283	19	\$28.00
13-2082	Tax Preparers	168	176	8	8	\$15.14
43-4011	Brokerage Clerks	147	141	(6)	8	\$23.85
43-9111	Statistical Assistants	5	7	2	<1	\$24.31
Criminal Justice/Safety Studies (CIP Code 43.0104)						
33-3012	Correctional Officers & Jailers	2,803	2,638	(164)	161	\$16.86





SOC CODE	SOC TITLE	2020 JOBS	2030 JOBS	JOB CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
33-3051	Police & Sheriff's Patrol Officers	2,662	2,841	179	92	\$20.64
43-5031	Public Safety Telecommunicators	485	517	32	32	\$15.76
33-1011	First-Line Supervisors of Correctional Officers	615	573	(42)	25	\$26.25
13-1041	Compliance Officers	1,049	1,105	56	22	\$25.41
33-1012	First-Line Supervisors of Police & Detectives	602	633	31	20	\$28.80
*11-9198	Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	4,124	4,395	271	14	\$37.58
13-2098	Financial and Investment Analysts, Financial Risk Specialists, and Financial Specialists, All Other	1,024	1,085	60	11	\$27.95
33-3021	Detectives & Criminal Investigators	443	456	13	5	\$23.14
33-2021	Fire Inspectors & Investigators	61	63	3	4	\$28.72
21-1092	Probation Officers & Correctional Treatment Specialists	226	233	7	4	\$23.85
33-3011	Bailiffs	60	60	0	3	\$15.03
*13-1198	Project Management Specialists and Business Operations Specialists, All Other	5,245	5,525	280	3	\$25.85
33-9021	Private Detectives & Investigators	61	63	1	1	\$23.72
11-9161	Emergency Management Directors	51	54	2	1	\$32.16
33-3052	Transit & Railroad Police	15	17	2	1	\$31.08
21-1021	Child, Family, & School Social Workers	207	243	36	<1	\$18.65
15-1212	Information Security Analysts	115	161	46	<1	\$30.99
Heating, Air Conditioning, Ventilation & Refrigeration Maintenance Technology/Technician (CIP Code 47.0201)						
47-4098	Miscellaneous Construction & Related Workers	1,413	1,474	61	132	\$22.11
49-9021	Heating, Air Conditioning, & Refrigeration Mechanics & Installers	1,099	1,185	86	89	\$21.70
49-9071	Maintenance & Repair Workers, General	5,754	6,186	432	55	\$18.80
47-2152	Plumbers, Pipefitters, & Steamfitters	3,867	3,813	(54)	55	\$27.46
*13-1198	Project Management Specialists and Business Operations Specialists, All Other	5,245	5,525	280	48	\$25.85
49-1011	First-Line Supervisors of Mechanics, Installers, & Repairers	2,228	2,325	98	38	\$31.57
49-9098	Helpers--Installation, Maintenance, & Repair Workers	535	573	38	35	\$14.69
47-2151	Pipelayers	230	238	8	23	\$14.41
49-2094	Electrical & Electronics Repairers, Commercial & Industrial Equipment	378	379	1	13	\$32.12
47-4011	Construction & Building Inspectors	226	249	24	10	\$25.79
47-2211	Sheet Metal Workers	651	707	56	10	\$22.79
49-9031	Home Appliance Repairers	63	65	2	5	\$15.06
Electrician (CIP Code 46.0302)						



SOC CODE	SOC TITLE	2020 JOBS	2030 JOBS	JOB CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
47-2111	Electricians	4,155	4,307	152	289	\$24.36
47-3013	Helpers--Electricians	1,188	1,164	(25)	82	\$14.66
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	5,298	5,335	37	40	\$28.77
49-1011	First-Line Supervisors of Mechanics, Installers, & Repairers	2,228	2,325	98	27	\$31.57
49-2098	Security & Fire Alarm Systems Installers	227	240	14	17	\$21.25
49-9097	Signal & Track Switch Repairers	24	28	4	2	\$31.96

\* See Appendix 2 for job postings related to this occupation.

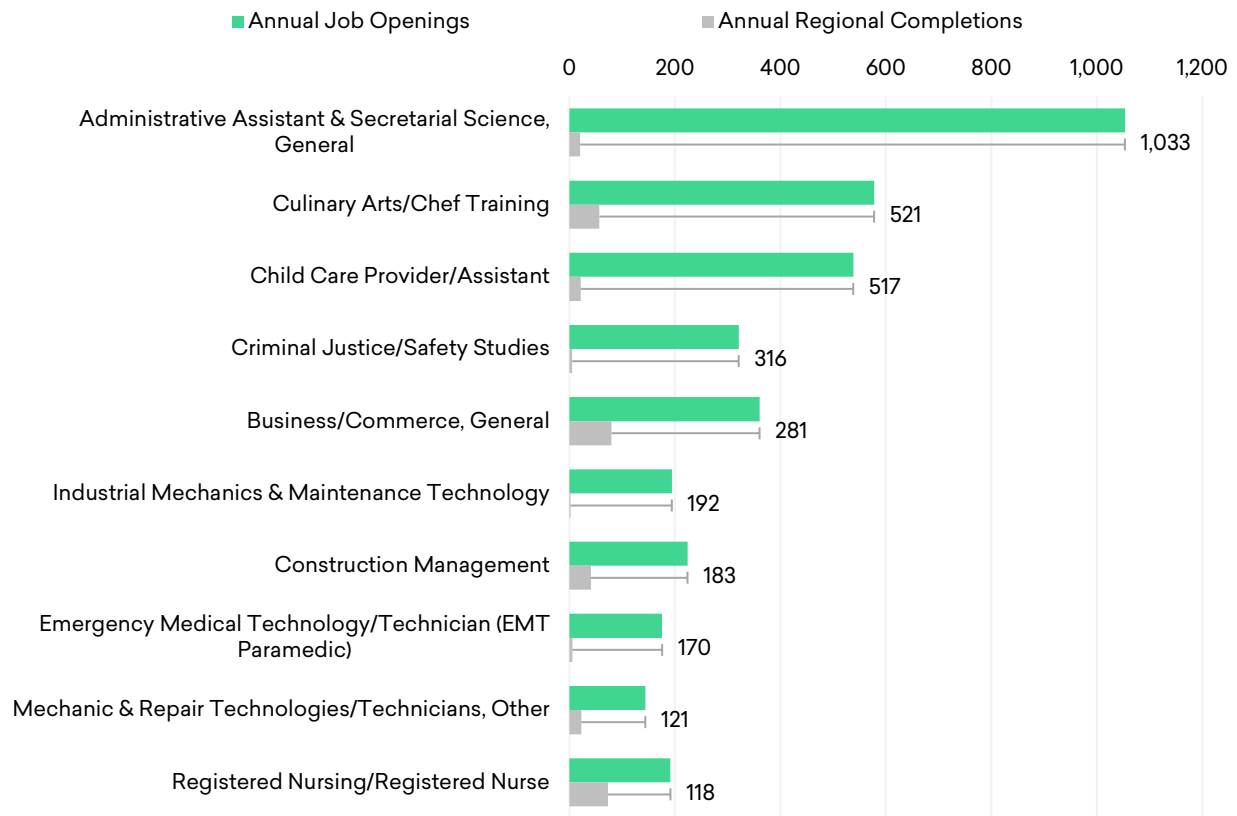
Numbers may not sum due to rounding.

Source: Emsi program demand gap model.

## ASSOCIATE DEGREE LEVEL ANALYSIS

The colleges offer 25 programs in which students receive an Associate in Applied Science (AAS), Art (AA), Fine Arts (AFA), or Science (AS) degrees in one of many subject areas, when the programs are classified by their six-digit CIP codes. Like the previous section, job openings consider this award level and one below – an associate degree and some college education in this section. An occupation’s job openings are weighted by the number of other programs mapped to the occupation and scaled according to a program’s completions.

Figure 3.6: Top 10 Associate Degree Level Programs with a Gap



Source: Emsi program demand gap model.

As shown in Figure 3.6, four programs have a significant gap above the 300-openings level of significance. The Administrative Assistant & Secretarial Science, General program has the largest, followed by the Culinary Arts/Chef Training and Child Care Provider/Assistant programs. As shown in Table 3.3, the Administrative Assistant & Secretarial Science, General program has 1,053 average annual job openings, considering the region’s labor market. On average, the colleges have 16 annual completions, and combined with the other postsecondary educational institutions in the region, there are a total of 20 annual completions. There are no programs with a significant surplus of program completions above the 300-openings level of significance. Programs with a significant gap have been highlighted in Table 3.3.

Table 3.3: Gaps and Surpluses for Associate Degree Level Programs

CIP CODE	CIP TITLE	ANNUAL JOB OPENINGS	ANNUAL COMPLETIONS		GAP OR SURPLUS	MEDIAN HOURLY WAGE
			REGION	THE COLLEGES		
52.0401	Administrative Assistant & Secretarial Science, General	1,053	20	16	1,033	\$13.96
12.0503	Culinary Arts/Chef Training	578	57	2	521	\$13.93
19.0709	Child Care Provider/Assistant	538	21	21	517	\$9.69
43.0104	Criminal Justice/Safety Studies	321	5	5	316	\$20.44
52.0101	Business/Commerce, General	361	80	80	281	\$35.09
47.0303	Industrial Mechanics & Maintenance Technology	194	2	2	192	\$26.43
52.2001	Construction Management	224	41	37	183	\$28.95
51.0904	Emergency Medical Technology/Technician (EMT Paramedic)	176	6	6	170	\$14.54
47.9999	Mechanic & Repair Technologies/Technicians, Other	144	23	23	121	\$22.07
51.3801	Registered Nursing/Registered Nurse	192	73	41	118	\$32.76
47.0604	Automobile/Automotive Mechanics Technology/Technician	95	7	7	88	\$21.21
22.0302	Legal Assistant/Paralegal	105	19	19	86	\$21.96
47.0613	Medium/Heavy Vehicle & Truck Technology/Technician	79	6	6	73	\$21.28
11.0901	Computer Systems Networking & Telecommunications	81	27	17	55	\$30.40
51.0808	Veterinary/Animal Health Technology/Technician & Veterinary Assistant	64	18	18	45	\$12.06
50.0102	Digital Arts	29	5	5	24	\$19.01
49.0101	Aeronautics/Aviation/Aerospace Science & Technology, General	23	<1	<1	23	\$22.30
15.1301	Drafting & Design Technology/Technician, General	58	40	13	17	\$26.31
51.0909	Surgical Technology/Technologist	38	23	11	15	\$18.13
47.0607	Airframe Mechanics & Aircraft Maintenance Technology/Technician	19	4	4	15	\$32.98
51.0910	Diagnostic Medical Sonography/Sonographer & Ultrasound Technician	15	10	10	5	\$25.66
47.0608	Aircraft Powerplant Technology/Technician	0	<1	<1	0	\$31.43
50.0602	Cinematography & Film/Video Production	10	16	16	(6)	\$17.22
15.0404	Instrumentation Technology/Technician	78	102	35	(24)	\$28.52
15.0699	Industrial Production Technologies/Technicians, Other	8	163	163	(155)	\$39.38

Numbers may not sum due to rounding.



Source: Emsi program demand gap model.

Several occupations mapped to Administrative Assistant & Secretarial Science, General, such as office clerks, general; secretaries & administrative assistants, except legal, medical, & executive; and receptionists & information clerks (Table 3.4). The median hourly wage for the Administrative Assistant & Secretarial Science, General program is \$13.96, when weighted by the openings and median hourly wages for each occupation mapped to the program. For context, the Louisiana state minimum wage is \$7.25<sup>11</sup> per hour, and the state's living wage is \$11.28 per hour for a household with one working adult and no children.<sup>12</sup> Program expansion is possible although the colleges should consider the outcomes for their general studies and liberal art students, as online profiles data shows a large number of these students may be filling some of these roles.<sup>13</sup>

While the gaps are important to keep in mind for building or expanding programs, the surpluses are equally important to ensure the colleges are training students with skills the regional workforce requires. There are no associate degree programs at the colleges with a significant surplus. Industrial Production Technologies/Technicians, Other has the largest, with a surplus of 155. Completers of the program may be finding work outside the region.

Using Table 3.4, this step-by-step process of evaluating occupational gaps by their job openings, job counts, and median hourly wage rates can be applied to the other associate degree level programs with a significant gap. In general, occupations with high wages should be considered more noteworthy than those with low wages. If an occupation's job projections are not positive, then it may not be worth further consideration, in terms of its mapped programs. Also, there could be other sources of skilled workers filling the gaps, such as unemployed workers or workers from outside the region.

**Table 3.4: Occupations Mapped to the Associate Degree Level Programs with a Significant Gap**

<b>SOC CODE</b>	<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>JOB CHANGE</b>	<b>ANNUAL JOB OPENINGS</b>	<b>MEDIAN HOURLY WAGE</b>
<b>Administrative Assistant &amp; Secretarial Science, General (CIP Code 52.0401)</b>						
43-9061	Office Clerks, General	10,396	10,558	162	481	\$12.05

11 The Louisiana minimum wage as of January 1, 2020 is \$7.25 per hour. Source: Emsi Complete Employment Data.

12 Living wage calculations provided by Dr. Amy K. Glasmeier and the Massachusetts Institute of Technology. See Appendix 8.

13 As stated previously, further research must be conducted before making a final determination, such as top employer identification within the region; business surveys to verify the data; resume and job postings analysis to determine trending skills for individuals with similar educations; industry recommendations on curriculum development; and analysis of the strengths, weaknesses, and capacities of similar programs at other regional higher education institutions. Emsi is available to conduct this research; see your Emsi contact for details.



SOC CODE	SOC TITLE	2020 JOBS	2030 JOBS	JOB CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
43-6014	Secretaries & Administrative Assistants, Except Legal, Medical, & Executive	7,285	7,076	(209)	224	\$15.48
43-4171	Receptionists & Information Clerks	3,308	3,612	303	168	\$12.88
43-6011	Executive Secretaries & Executive Administrative Assistants	3,446	2,880	(567)	150	\$19.07
43-9021	Data Entry Keyers	608	498	(111)	15	\$14.76
43-4071	File Clerks	243	225	(18)	11	\$11.60
43-9022	Word Processors & Typists	87	70	(17)	5	\$14.80
Culinary Arts/Chef Training (CIP Code 12.0503)						
35-1012	First-Line Supervisors of Food Preparation & Serving Workers	3,274	3,724	449	272	\$14.80
35-2014	Cooks, Restaurant	2,550	3,186	636	147	\$11.87
35-2015	Cooks, Short Order	1,233	1,250	17	56	\$10.05
35-2012	Cooks, Institution & Cafeteria	1,033	1,132	99	51	\$10.32
11-9051	Food Service Managers	612	694	83	35	\$23.88
35-1011	Chefs & Head Cooks	223	262	39	17	\$21.42
35-2013	Cooks, Private Household	6	7	1	<1	\$18.00
Child Care Provider/Assistant (CIP Code 19.0709)						
39-9011	Childcare Workers	4,161	4,315	153	301	\$9.29
25-9045	Teaching Assistants, Except Postsecondary	4,244	4,525	281	208	\$9.50
21-1093	Social & Human Service Assistants	552	652	100	27	\$14.54
21-1021	Child, Family, & School Social Workers	207	243	36	3	\$18.65
Criminal Justice/Safety Studies (CIP Code 43.0104)						
33-3012	Correctional Officers & Jailers	2,803	2,638	(164)	123	\$16.86
33-3051	Police & Sheriff's Patrol Officers	2,662	2,841	179	88	\$20.64
43-5031	Public Safety Telecommunicators	485	517	32	23	\$15.76
33-1011	First-Line Supervisors of Correctional Officers	615	573	(42)	22	\$26.25
33-1012	First-Line Supervisors of Police & Detectives	602	633	31	18	\$28.80
13-2098	Financial and Investment Analysts, Financial Risk Specialists, and Financial Specialists, All Other	1,024	1,085	60	11	\$27.95
33-3021	Detectives & Criminal Investigators	443	456	13	8	\$23.14
*13-1198	Project Management Specialists and Business Operations Specialists, All Other	5,245	5,525	280	6	\$25.85
13-1041	Compliance Officers	1,049	1,105	56	5	\$25.41
21-1092	Probation Officers & Correctional Treatment Specialists	226	233	7	4	\$23.85
33-3011	Bailiffs	60	60	0	3	\$15.03



SOC CODE	SOC TITLE	2020 JOBS	2030 JOBS	JOB CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
33-2021	Fire Inspectors & Investigators	61	63	3	3	\$28.72
*11-9198	Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	4,124	4,395	271	2	\$37.58
33-9021	Private Detectives & Investigators	61	63	1	2	\$23.72
11-9161	Emergency Management Directors	51	54	2	1	\$32.16
21-1021	Child, Family, & School Social Workers	207	243	36	1	\$18.65
33-3052	Transit & Railroad Police	15	17	2	1	\$31.08
15-1212	Information Security Analysts	115	161	46	<1	\$30.99

\* See Appendix 2 for job postings related to this occupation.  
Numbers may not sum due to rounding.  
Source: Emsi program demand gap model.

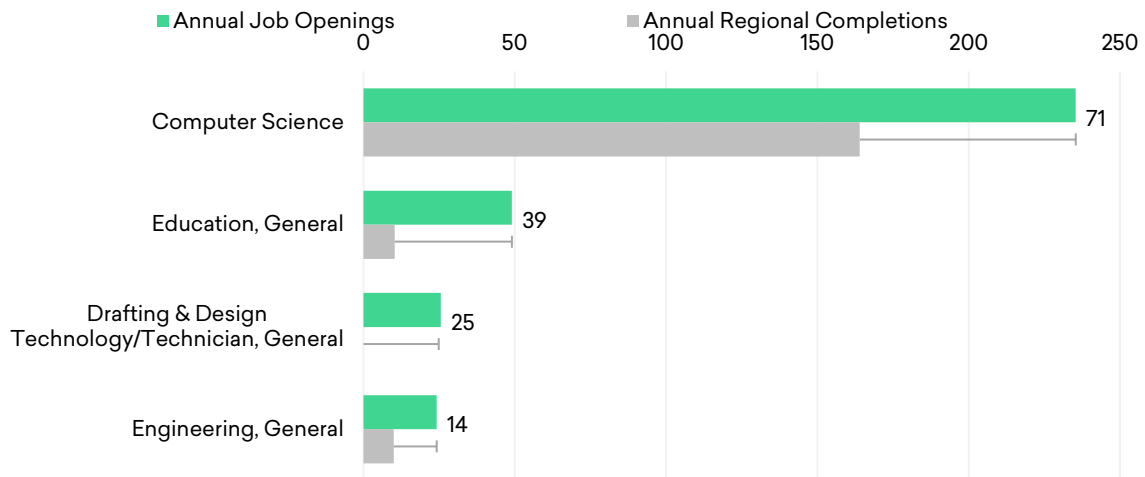
## TRANSFER-TRACK DEGREE LEVEL ANALYSIS

The analysis in this section again evaluates the colleges' associate degree level programs<sup>14</sup> but at the bachelor's degree level. The programs are referred to as transfer-track degree level programs, and a program completer could readily transfer into a similar bachelor's degree level program. At the colleges, there are four such transfer-track degree level programs, when the programs are classified by their six-digit CIP codes. BRCC, NTCC, and RPCC are only a few of many postsecondary educational institutions in the region, and several other institutions offer bachelor's degree level programs. Job openings at this award level consider someone with a bachelor's degree or associate degree level of education. An occupation's job openings are weighted by the number of other programs mapped to the occupation and scaled according to a program's completions.

14 The transfer-track degree level analysis does not include all the colleges' associate degree level programs, as directed by the colleges.



Figure 3.7: Transfer-Track Degree Level Gaps



The colleges award completers with an associate degree, but the demand for jobs considers a bachelor's degree level of education.

Source: Emsi program demand gap model.

Figure 3.7 shows the the gaps for the colleges' transfer-track programs. The Computer Science program has the largest, followed by the Education, General and Drafting & Design Technology/Technician, General programs. As shown in Table 3.5, there are 235 average annual job openings in the region for occupations related to the Computer Science program. On average, the colleges graduate 12 annual completers, and combined with the other postsecondary educational institutions in the region, there are a total of 164 annual completers. None of the transfer-track programs have a significant surplus.

Table 3.5: Gaps and Surpluses for Transfer-Track Degree Level Programs

CIP CODE	CIP TITLE	ANNUAL JOB OPENINGS	ANNUAL COMPLETIONS		GAP OR SURPLUS	MEDIAN HOURLY WAGE
			REGION	THE COLLEGES		
11.0701	Computer Science	235	164	12	71	\$32.42
13.0101	Education, General	49	10	10	39	\$15.22
15.1301	Drafting & Design Technology/Technician, General	26	<1	<1	25	\$25.49
14.0101	Engineering, General	24	10	10	14	\$45.18
43.0107	Criminal Justice/Police Science	21	27	27	(5)	\$22.15

The colleges award completers with an associate degree, but the demand for jobs considers a bachelor's degree level of education. Numbers may not sum due to rounding.

Source: Emsi program demand gap model.

Several occupations are mapped to Computer Science, such as software developers & software quality assurance analysts & testers; computer systems analysts; and computer programmers. The median hourly wage of computer & information systems managers, the





highest paid occupation mapped to the program, is \$48.52. For context, the Louisiana state minimum wage is \$7.25<sup>15</sup> per hour, and the state's living wage is \$11.28 per hour for a household with one working adult and no children.<sup>16</sup> Program expansion looks promising, as computer skills are in demand not only in the RMLA Region 2, but also across the state and country.<sup>17</sup>

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15 The Louisiana minimum wage as of January 1, 2020 is \$7.25 per hour. Source: Emsi Complete Employment Data.

16 Living wage calculations provided by Dr. Amy K. Glasmeier and the Massachusetts Institute of Technology. See Appendix 8.

17 As stated previously, further research must be conducted before making a final determination, such as top employer identification within the region; business surveys to verify the data; resume and job postings analysis to determine trending skills for individuals with similar educations; industry recommendations on curriculum development; and analysis of the strengths, weaknesses, and capacities of similar programs at other regional higher education institutions. Emsi is available to conduct this research; see your Emsi contact for details.

## LIBERAL ARTS TRANSFER STUDENTS

A number of students attend the colleges with the intention of transferring to a four-year institution to receive a bachelor’s degree. Although these students study any number of topics at the colleges, a large portion of them receive an Associate of Arts in Liberal Arts or General Studies. In fact, over the past three years, 1,591 students, on average, have completed such a program.

Once liberal arts students leave the colleges, their educational and career track is difficult to predict. They could attend a nearby four-year institution, and they could study any number of different programs that will ultimately determine their future careers. What can be shown is that over the next 10 years, jobs that require a bachelor’s degree are projected to be in high demand. In any given year between 2020 and 2030, 13,220 job openings will require a bachelor’s degree level of education.

This section shows the top occupations mapped to liberal arts programs, using Emsi’s Profile Analytics database, which contains more than 125 million profiles of people in the U.S. from all the major professional social media websites. To identify the top occupations, the Profile Analytics database is filtered in several ways. First, profiles include people who have an associate degree or a bachelor’s degree level of education. Second, the profiles list liberal arts as the person’s program of study. Liberal arts programs are classified as CIP codes 24.01, 30.00, and 30.99 at the four-digit level. Finally, the database includes profiles most recently updated, from as early as 2010. Using these search parameters, 263,200 profiles are found in the database, and the occupations in Table 3.6 represent the most common jobs of the liberal arts alumni.

As shown in the table, a considerable number of job openings are for retail salespersons, secretaries & administrative assistants, and customer service representatives. Together, the three occupations account for 47.1% of all the liberal arts program’s job openings. The profiles data also include various kinds of managers and supervisors, which are occupations with relatively higher wage rates. A liberal arts program expansion is not warranted at this time, but the colleges’ administrators should be aware that liberal arts graduates can find success in a variety of business-related occupations beyond retail sales and customer service.

Table 3.6: Occupations Related to Liberal Arts Programs

SOC CODE	SOC TITLE	2020 JOBS	2030 JOBS	JOB CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
41-2031	Retail Salespersons	13,087	12,765	(322)	1,941	\$10.76
43-4051	Customer Service Representatives	6,024	6,333	309	866	\$15.10

SOC CODE	SOC TITLE	2020 JOBS	2030 JOBS	JOB CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
43-6014	Secretaries & Administrative Assistants, Except Legal, Medical, & Executive	7,285	7,076	(209)	817	\$15.48
41-4012	Sales Representatives, Wholesale & Manufacturing, Except Technical & Scientific Products	4,101	4,359	258	477	\$26.15
11-1021	General & Operations Managers	6,768	7,429	661	686	\$43.28
*13-1198	Project Management Specialists and Business Operations Specialists, All Other	5,245	5,525	280	547	\$25.85
43-1011	First-Line Supervisors of Office & Administrative Support Workers	4,877	4,955	78	532	\$23.23
13-1111	Management Analysts	1,115	1,280	166	129	\$36.92
13-1071	Human Resources Specialists	1,185	1,281	96	134	\$25.16
15-1232	Computer User Support Specialists	1,657	1,864	207	165	\$21.72
*11-9198	Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	4,124	4,395	271	352	\$37.58
11-3031	Financial Managers	1,564	1,814	250	155	\$45.19
21-1093	Social & Human Service Assistants	552	652	100	81	\$14.54
43-6011	Executive Secretaries & Executive Administrative Assistants	3,446	2,880	(567)	355	\$19.07
25-3097	Teachers & Instructors, All Other	1,226	1,344	118	159	\$21.60
41-9022	Real Estate Sales Agents	1,222	1,313	91	130	\$16.59
11-2022	Sales Managers	655	731	76	69	\$42.59
11-2021	Marketing Managers	233	290	57	29	\$41.56
27-3031	Public Relations Specialists	317	371	53	41	\$23.08
11-1011	Chief Executives	388	407	19	31	\$81.12

\* See Appendix 2 for job postings related to this occupation.  
Source: Emsi gap model.

## SUMMARY

Across all award levels, there are a total of 19 programs associated with significant workforce gaps and no programs are associated with a significant surplus.

At the certificate level, fifteen programs have a gap above the 300-job level of significance. Program expansions are recommended at this award level if the program awards completers with a certificate and a certification, license, or industry-specific credential required for employment in an occupation. The certificate level programs with the top three largest gaps are:

- Building/Property Maintenance (gap of 1,491; median hourly wage \$12.09)

- Administrative Assistant & Secretarial Science, General (gap of 1,264; median hourly wage \$14.22)
- Culinary Arts/Chef Training (gap of 872; median hourly wage \$13.51)

At the associate degree level, four programs have a significant gap above the 300-job level of significance, and some are recommended for further program development. The associate degree programs with the top three largest gaps are:

- Administrative Assistant & Secretarial Science, General (gap of 1,033; median hourly wage \$13.96)
- Culinary Arts/Chef Training (gap of 521; median hourly wage \$13.93)
- Child Care Provider/Assistant (gap of 517; median hourly wage \$9.69)

The transfer-track degree level program analysis identifies job opportunities within the colleges' associate degree level programs but with job openings at the bachelor's degree level. No programs have a significant gap above the 300-job level of significance, and no programs have a surplus of program completions. The transfer-track degree level programs with the three largest gaps are:

- Computer Science (gap of 71; median hourly wage \$32.42)
- Education, General (gap of 39; median hourly wage \$15.22)
- Drafting & Design Technology/Technician, General (gap of 25; median hourly wage \$25.49)

A liberal arts program expansion is not recommended at this time, but the colleges' administrators should be aware that students can find success in a variety of business-related occupations. Using the Profile Analytics database, many liberal arts program completers are currently employed as administrative assistants and customer service representatives, as well as a variety of managers and supervisors. These occupations have a considerable number of job openings in the RMLA Region 2, and the colleges' liberal arts programs serve as a starting point to students' future career goals.



# New Program Additions

Thus far, the analysis has centered around programs offered by the colleges. This chapter looks at workforce gaps that exist within occupations that the colleges do not currently train for and provides new program recommendations. For each award level, a table shows the occupations' current employment, projected percentage growth over the next decade, average annual projected job openings, average annual completers, gap, and median hourly wage rates. In addition, the figure in the certificate level section details the current annual wage rates for those employed in a selection of occupations.

Recommendations are based solely on the gap and whether or not the occupation looks promising (job growth, wages, etc.). These are initial findings and should serve as a starting point for further research. The colleges' administrations will still need to undergo steps before deciding whether these programs would be a good fit for the colleges and the region. This future work could include surveying local employers, analyzing skills and similar programs offered elsewhere, calculating program specific economic impacts, and looking at capacity and capital requirements for building these programs.

## ADDITIONS AT THE CERTIFICATE LEVEL

Fifty occupations have been identified as certificate level programmatic areas of opportunity, as shown in Table 4.1. The select occupations present unmet annual job openings within the RMLA Region 2 (i.e. they have a gap), their median hourly wage rates are greater than \$15.00, and the occupations typically require some college education but no degree for entry-level positions.

As shown, there is diversity in the types of occupations in the table, with a limited number of job openings in the region for some. The most represented occupational group in the table are production occupations (SOC 51-0000), with 15 occupations and about 8,500 jobs in the region in 2020. The second most represented occupation group is construction & extraction and it is followed by transportation & material moving.



Table 4.1: Programmatic Areas of Opportunity at the Certificate Level

<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>% JOB CHANGE</b>	<b>ANNUAL JOB OPENINGS</b>	<b>ANNUAL COMPL.</b>	<b>GAP</b>	<b>MEDIAN HOURLY WAGE</b>
Heavy and Tractor-Trailer Truck Drivers	4,884	5.8%	459	70	388	\$19.68
Operating Engineers and Other Construction Equipment Operators	2,602	0.6%	240	0	240	\$23.35
Inspectors, Testers, Sorters, Samplers, and Weighers	2,006	(6.4%)	158	0	158	\$26.39
Industrial Truck and Tractor Operators	1,702	4.3%	153	0	153	\$19.08
First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	1,813	7.7%	140	0	140	\$26.77
Shipping, Receiving, and Inventory Clerks	1,652	3.1%	128	0	128	\$15.76
Insulation Workers, Mechanical	1,386	8.5%	126	0	126	\$21.44
Petroleum Pump System Operators, Refinery Operators, and Gaugers	1,334	5.2%	111	0	111	\$38.30
Chemical Plant and System Operators	1,441	(3.3%)	110	0	110	\$34.31
Chemical Equipment Operators and Tenders	1,173	1.8%	82	0	82	\$34.63
Exercise Trainers and Group Fitness Instructors	774	12.3%	78	0	78	\$16.79
Billing and Posting Clerks	1,040	18.6%	86	8	78	\$16.69
Library Technicians	680	(0.3%)	78	0	78	\$17.72
Insulation Workers, Floor, Ceiling, and Wall	942	(12.3%)	72	0	72	\$21.61
Dental Assistants	1,120	15.0%	104	43	61	\$15.41
Crane and Tower Operators	612	2.8%	61	0	61	\$26.50
Riggers	748	0.8%	58	0	58	\$28.21
Mobile Heavy Equipment Mechanics, Except Engines	640	7.6%	52	0	52	\$26.27
Boilermakers	620	(10.2%)	46	0	46	\$30.18
Mixing and Blending Machine Setters, Operators, and Tenders	482	7.2%	44	0	44	\$21.13
Bill and Account Collectors	433	3.9%	40	0	40	\$15.29
Packaging and Filling Machine Operators and Tenders	374	15.3%	33	0	33	\$15.69
Surveying and Mapping Technicians	338	4.1%	29	0	29	\$22.32
Cement Masons and Concrete Finishers	363	12.6%	29	0	29	\$19.41
Excavating and Loading Machine and Dragline Operators, Surface Mining	289	(1.2%)	28	0	28	\$20.50
Loan Interviewers and Clerks	456	5.7%	28	0	28	\$16.97
Insurance Claims and Policy Processing Clerks	535	9.3%	33	5	27	\$17.86
Hazardous Materials Removal Workers	223	27.6%	27	0	27	\$17.98

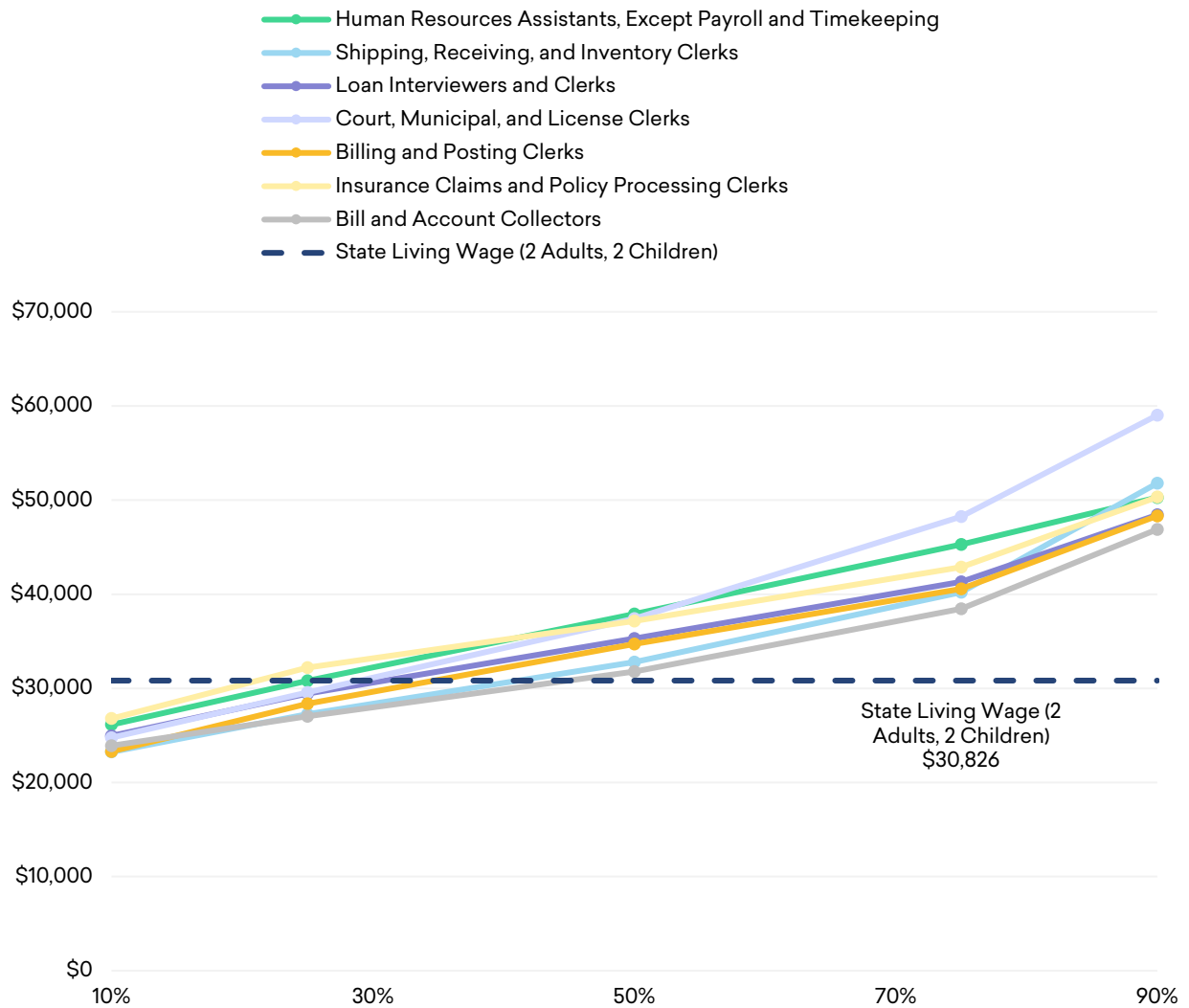


<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>% JOB CHANGE</b>	<b>ANNUAL JOB OPENINGS</b>	<b>ANNUAL COMPL.</b>	<b>GAP</b>	<b>MEDIAN HOURLY WAGE</b>
Structural Metal Fabricators and Fitters	299	(7.5%)	24	0	24	\$18.18
Water and Wastewater Treatment Plant and System Operators	332	(1.3%)	21	0	21	\$18.13
Motor Vehicle Operators, All Other	149	11.8%	21	0	21	\$19.37
Control and Valve Installers and Repairers, Except Mechanical Door	312	(2.4%)	21	0	21	\$21.97
Tank Car, Truck, and Ship Loaders	204	3.1%	20	0	20	\$20.28
Audio and Video Technicians	229	30.7%	18	0	18	\$18.74
Court, Municipal, and License Clerks	355	5.9%	18	0	18	\$17.99
Human Resources Assistants, Except Payroll and Timekeeping	251	0.7%	15	0	15	\$18.23
Print Binding and Finishing Workers	151	(17.1%)	15	0	15	\$16.54
Ophthalmic Laboratory Technicians	154	14.2%	14	0	14	\$15.21
Fiberglass Laminators and Fabricators	151	(2.3%)	14	0	14	\$22.20
Gas Plant Operators	178	(2.6%)	14	0	14	\$29.24
Printing Press Operators	158	6.4%	14	0	14	\$16.71
Pump Operators, Except Wellhead Pumpers	145	1.6%	14	0	14	\$22.91
Civil Engineering Technologists and Technicians	225	3.5%	14	0	14	\$27.50
Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic and Glass Fibers	161	1.2%	13	0	13	\$16.40
Farm Equipment Mechanics and Service Technicians	165	(2.9%)	13	0	13	\$19.79
Brickmasons and Blockmasons	142	26.1%	12	0	12	\$19.08
Earth Drillers, Except Oil and Gas; and Explosives Workers, Ordnance Handling Experts, and Blasters	85	10.5%	11	0	11	\$18.53
Medical Equipment Repairers	147	13.3%	10	0	10	\$23.12
Environmental Engineering Technologists and Technicians	164	6.0%	10	0	10	\$22.09
Plating Machine Setters, Operators, and Tenders, Metal and Plastic	100	16.2%	10	0	10	\$16.57

Numbers may not sum due to rounding.  
Source: Emsi program demand gap model.



Figure 4.1: Percentile Wage Rates of Office & Administrative Support Occupations Identified as New Program Opportunities



Source: Employees & Self-Employed 2020.4.

The annual wage rates of the office & administrative support occupations from Table 4.1 are shown in Figure 4.1, with an emphasis on low and high wage-earners. Data on percentile wage rates highlight the occupations that should be incorporated into a new or existing program, for the benefit of students first coming into the region’s labor market or those looking to change career paths.





### ADDITIONS AT THE ASSOCIATE DEGREE LEVEL

Fewer occupations, compared to the previous section, have been identified as associate degree level programmatic areas of opportunity (Table 4.2). There are not as many occupations that specifically require such an education, and most have been considered in the previous chapter’s analysis. Of the nine occupations in the table, six are related to healthcare practitioners & technical occupations (SOC 29-0000), with about 1,850 jobs in the region. The second most represented occupation group is healthcare support. While the gaps are smaller in size, these occupations provide critical healthcare services to residents in the RMLA Region 2 and completers could likely find employment in other areas of the state.

Table 4.2: Programmatic Areas of Opportunity at the Associate Degree Level

SOC TITLE	2019 JOBS	% JOB CHANGE	ANNUAL JOB OPENINGS	ANNUAL COMPL.	GAP	MEDIAN HOURLY WAGE
Dental Hygienists	564	15.9%	29	0	29	\$33.88
Respiratory Therapists	422	22.7%	23	0	23	\$25.41
Occupational Therapy Assistants	176	30.3%	19	0	19	\$28.45
Occupational Therapy Aides	136	9.1%	11	0	11	\$27.70
Radiologic Technologists and Technicians	533	12.8%	23	12	11	\$24.80
Morticians, Undertakers, and Funeral Arrangers	96	8.9%	8	0	8	\$23.96
Magnetic Resonance Imaging Technologists	159	7.5%	6	0	6	\$33.62
Cardiovascular Technologists and Technicians	114	10.7%	4	0	4	\$17.00
Nuclear Medicine Technologists	57	7.1%	2	1	<1	\$31.11

Numbers may not sum due to rounding.  
 Source: Emsi program demand gap model.

### ADDITIONS AT THE TRANSFER-TRACK DEGREE LEVEL

As shown in Table 4.3, 43 occupations have been identified as transfer-track degree level programmatic areas of opportunity. The select occupations present unmet annual job openings within the RMLA Region 2 (i.e. they have a gap), their median hourly wage rates are greater than \$15.00, and the occupations typically require a bachelor’s degree level of education for entry-level positions.

The table shows a diverse set of occupations, with a limited number of job openings in the region for some. The most represented occupational group in the table are business & financial operations occupations (SOC 13-0000), with 10 occupations and about 5,930 jobs in the region in 2020. The second most represented occupation group is sales & related and it is followed by management. The colleges should consider adding curriculum and programs related to finance, real estate, and insurance. Additionally, the colleges could consider creating a human resources program that would not only help meet the demand for human resources assistants, except payroll and timekeeping at the certificate level, but also human resources specialists at the transfer-track level. An associate degree in Human Resources Management/Personnel Administration, General may help fill some roles at both award levels in the RMLA Region 2.

Table 4.3: Programmatic Areas of Opportunity at the Transfer-Track Degree Level

<b>SOC TITLE</b>	<b>2019 JOBS</b>	<b>% JOB CHANGE</b>	<b>ANNUAL JOB OPENINGS</b>	<b>ANNUAL COMPL.</b>	<b>GAP</b>	<b>MEDIAN HOURLY WAGE</b>
Insurance Sales Agents	2,681	11.7%	153	0	153	\$18.77
Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	2,222	12.4%	161	11	150	\$18.74
Human Resources Specialists	1,185	8.1%	80	12	68	\$25.16
Real Estate Sales Agents	1,222	7.4%	68	11	56	\$16.59
Office and Administrative Support Workers, All Other	911	10.4%	56	0	56	\$18.01
Community and Social Service Specialists, All Other	841	3.4%	48	0	48	\$23.75
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	819	3.7%	48	0	48	\$30.35
Directors, Religious Activities and Education	582	10.2%	46	0	46	\$21.22
Clergy	978	13.4%	60	15	45	\$26.88
Chemical Technicians	849	6.3%	45	4	41	\$34.22
Physical Therapist Assistants	342	22.4%	37	0	37	\$22.52
Life, Physical, and Social Science Technicians, All Other	663	3.4%	38	1	37	\$22.52
Claims Adjusters, Examiners, and Investigators	870	(7.0%)	42	6	37	\$31.02
Training and Development Specialists	600	12.6%	37	0	37	\$24.99
Special Education Teachers, Kindergarten and Elementary School	925	5.0%	38	2	35	\$24.46
Loan Officers	884	3.0%	44	9	35	\$24.35
Securities, Commodities, and Financial Services Sales Agents	686	0.6%	43	8	35	\$21.59



<b>SOC TITLE</b>	<b>2019 JOBS</b>	<b>% JOB CHANGE</b>	<b>ANNUAL JOB OPENINGS</b>	<b>ANNUAL COMPL.</b>	<b>GAP</b>	<b>MEDIAN HOURLY WAGE</b>
Production, Planning, and Expediting Clerks	550	14.3%	33	0	33	\$23.49
Compensation, Benefits, and Job Analysis Specialists	543	2.1%	32	0	32	\$23.95
Conservation Scientists	387	(0.3%)	33	4	29	\$28.70
First-Line Supervisors of Non-Retail Sales Workers	617	6.8%	29	0	29	\$25.72
Logisticians	502	7.0%	30	1	28	\$32.25
Property, Real Estate, and Community Association Managers	648	11.0%	28	0	28	\$20.25
Medical Transcriptionists	280	(6.2%)	26	0	26	\$21.51
Health Information Technologists, Medical Registrars, Surgical Assistants, and Healthcare Practitioners and Technical Workers, All Other	763	6.8%	25	0	25	\$22.82
Designers, All Other	321	6.8%	23	0	23	\$33.89
Financial Managers	1,564	16.0%	80	59	22	\$45.19
Special Education Teachers, Secondary School	485	6.2%	20	0	20	\$26.41
Insurance Underwriters	375	(2.6%)	22	3	20	\$23.62
Human Resources Managers	449	7.3%	22	5	18	\$39.94
Education Administrators, Postsecondary	522	1.4%	17	0	17	\$37.24
Personal Financial Advisors	352	11.0%	22	5	17	\$29.47
Occupational Health and Safety Specialists	548	2.9%	17	1	15	\$33.32
Special Education Teachers, Middle School	344	5.0%	14	0	14	\$24.67
Architects, Except Landscape and Naval	482	6.2%	22	8	14	\$34.53
Social Workers, All Other	285	6.1%	17	3	13	\$24.91
Property Appraisers and Assessors	288	3.7%	14	2	13	\$23.60
Procurement Clerks	184	(0.1%)	12	0	12	\$20.82
Tax Examiners and Collectors, and Revenue Agents	335	0.5%	15	3	12	\$20.07
Real Estate Brokers	191	7.9%	11	0	11	\$22.77
Travel Agents	134	(8.4%)	10	0	10	\$18.52
Purchasing Managers	192	8.6%	10	0	10	\$40.65
Surveyors	209	1.7%	11	2	10	\$31.25

Numbers may not sum due to rounding.  
Source: Emsi program demand gap model.



## SUMMARY

Fifty certificate level programmatic areas of opportunity have been identified in the program demand gap analysis, many of which are related to production occupations. At the associate degree level, there are fewer opportunities for new programs, considering the colleges' current offerings. Nonetheless, the colleges should consider new programs related to healthcare practitioners & technical occupations, whether their focus is on job openings in the RMLA Region 2 or Louisiana. Forty-three transfer-track degree level programmatic areas of opportunity were identified in the program demand gap analysis, many of which are related to business & financial operations occupations. For all award levels, many program additions are related to the colleges' current program offerings, which indicates an opportunity for a curriculum adjustment to better align with the region's current and projected labor market demand.

## APPENDIX 1: Glossary of Terms

**Associate Degree** A degree granted for the successful completion of a sub-baccalaureate program of study, usually requiring at least two years (or equivalent) of full-time college-level study. This includes degrees granted in a cooperative or work-study program. For the program demand gap analysis, degrees of greater than two years but less than four, as defined by IPEDS, are included in the associate degree category.

**Certificate** A formal award certifying the satisfactory completion of a postsecondary education program. Certificates can be awarded at any level of postsecondary education and include awards below the associate degree level. For the program demand gap analysis, this includes awards of less than one year and greater than one year but less than two, as defined by IPEDS.

**Gap** represents a deficit, or when there are more job openings in a particular occupation than there are completions from higher education institutions in the county, region, state, etc. If left unaddressed, a gap may lead to missed opportunities for economic growth and put stress on local businesses to find the necessary talent elsewhere. Significant gaps translate into higher human resources costs and decreased efficiencies in the economic system. They also provide an opportunity for educational institutions to develop new programs and/or strengthen their current programs.

**Industry Jobs** Emsi industry data have various sources depending on the class of worker. Emsi primarily uses the QCEW (Quarterly Census of Employment and Wages), with supplemental estimates from County Business Patterns. Non-QCEW employees data are based on a number of sources including QCEW, Current Employment Statistics, County Business Patterns, Bureau of Economic Analysis (BEA) State and Local Personal Income reports, the National Industry-Occupation Employment Matrix (NIOEM), the American Community Survey, and Railroad Retirement Board statistics. Self-Employed class of worker data are primarily based on the American Community Survey, Nonemployer Statistics, and BEA State and Local Personal Income Reports. The Extended Proprietor class of worker is not included in the analysis. Projections for QCEW and non-QCEW Employees are informed by NIOEM and long-term industry projections published by individual states.

**IPEDS** The Integrated Postsecondary Education Data System (IPEDS) aggregates interrelated surveys conducted annually by the U.S. Department of Education's National Center for Education Statistics (NCES). IPEDS gathers information from every educational institution in the U.S. that participates in the federal student financial aid programs authorized by Title IV of the Higher Education Act of 1965. These educational institutions include research universities, state colleges and universities, private religious and liberal arts colleges, for-profit institutions, community and technical colleges, non-degree-granting institutions such as beauty colleges, and others.

**Job Openings** Job openings are a combination of job growth, which occurs when an employer experiences greater demand for its products and hires new employees to increase production, and replacement needs, which occurs when employees leave the workforce or change occupations. Throughout the program demand gap analysis, they represent the average number of projected openings between 2020 and 2030. Job openings are calculated for each occupation mapped to a program and are de-duplicated across programs mapped to the same occupation using Emsi’s weighting methodology. For each award level, the number of openings is reported for that educational level and one education level below it.

**Location Quotient (LQ)** A comparative statistic used to calculate the relative employment concentration of an industry or occupation against the employment of the industry in a larger geographic region (i.e. a region’s LQ relative to the U.S.). Industries with a higher location quotient (usually greater than 1.2) indicate that the smaller geographic region has a comparative advantage or specialization in the production of that good or service or has a high degree of specialization within its workforce.

**NAICS** The North American Industry Classification System (NAICS) organizes North American business establishments to better collect, analyze, and publish statistical data related to the business economy. NAICS is intended to classify an establishment’s activity regardless of its ownership (public or private sector) or legal form of organization (proprietorship, partnership, corporation, for-profit, nonprofit, etc.). However, due to the realities of available data, Emsi treats establishments with public and private sector ownership differently. In Emsi data, all establishments in the main NAICS hierarchy are private sector only. Jobs in Educational Services and Ambulatory Health Care Service, for example, are not associated with local, state, or federal government jobs. Jobs for public school teachers and city firefighters are in Local Government, whereas college professors and forest firefighters are commonly employed by State Government. Mail carriers and transportation security screeners are examples of jobs in Federal Government. Thus, Emsi does not use the standard NAICS classification, which is similar to Current Employment Statistics (CES), Occupational Employment Statistics (OES), and BEA data sources.

**New Program Additions** New program additions are workforce gaps that exist for occupations the institution does not currently train for, based on the mapping of the institution’s current programs. The award level recommended for the occupations is determined based by the level of education of workers currently employed in the occupation.

**Program Completions** For the program demand gap analysis, program completions are the average number of students, over a three-year period, who receive an award or degree for a program of study, as reported to IPEDS. An average over three years is used to control for upward or downward spikes in completions in any one year.



**SOC** The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data. All workers are classified into one of about 775 detailed occupations according to their occupational definition. To facilitate classification, detailed occupations are combined to form about 450 broad occupations, about 95 minor groups, and 23 major groups. Detailed occupations in the SOC with similar job duties, and in some cases skills, education, and/or training, are grouped together. There are a few minor differences between Emsi and standard SOC codes. Primarily, Emsi does not use detailed SOC codes for military occupations due to lack of good data and aggregates the occupations into one code, 55-9999. And, Emsi uses a single aggregate code (25-1099) for all postsecondary teachers due to lack of solid data and to remain consistent with the NIOEM, which uses a similar code. Emsi currently uses the OES's SOC 2017.

**Staffing Patterns** show the occupational makeup of an industry in percentages. For example, a simplified staffing pattern of the Hospitals industry subsector might show that 20% of its jobs are occupied by nurses, 15% by nursing assistants, 10% by general practitioners, 10% by surgeons, five percent by information technology support staff, five percent by janitors, one percent by chief executives, etc. Data are compiled from several sources, including Occupational Employment Statistics, NIOEM, and the American Community Survey. For the Self-Employed class of worker, the primary source is the American Community Survey with a small amount of information from Occupational Employment Statistics.

**Surplus** Represents an oversupply, or when there are more completers from regional educational institutions than there are job openings in a particular occupation. If left unaddressed, significant surpluses may lead to higher unemployment rates or higher attrition rates—the institution could be educating a workforce that is leaving the region after program completion because of a lack of job opportunities. In the tables, values in parentheses represent a surplus.

**Transfer-Track** degrees are not a formal award level according to IPEDS. They are associate degrees, as defined by IPEDS, that prepare students to pursue a baccalaureate degree, as opposed to a two-year terminal degree. Transfer-track degrees are usually awarded as Associate of Arts (AA) or Associate of Science (AS) degrees, compared to terminal associate degrees, usually awarded as Associate of Applied Science (AAS) or Associate of Applied Arts (AAA) degrees.

## APPENDIX 2: **About Emsi Data**

### **LABOR MARKET INFORMATION**

Traditional labor market information (LMI) helps us to identify those occupations with good jobs and projected growth in the coming decade. This provides a robust, market-driven foundation upon which to build out programmatic recommendations. Emsi's data then allows us to map these occupations back to programs that train for them, and to extrapolate other occupational outcomes for potential graduates. Emsi data are used to calculate the projected number of annual job openings from 2020 to 2030. These projections account for openings due to job growth and openings due to replacement needs, such as when an employee retires or leaves the position. To capture a complete picture of industry employment, Emsi gathers and integrates economic, labor market, demographic, and educational data from over 40 government and private-sector sources. In doing so, Emsi creates a comprehensive and current database that includes both published data and detailed estimates, with full coverage of the U.S.

More specifically, Emsi combines covered employment data from the Quarterly Census of Employment and Wages (QCEW-produced by the Department of Labor) with total employment data in Regional Economic Information System (REIS-published by the BEA). The data are augmented with County Business Patterns (CBP) and Non-Employer Statistics (NES) published by the Census Bureau. Job projections are based on the latest-available Emsi industry data, 15-year past local trends in each industry, growth rates in statewide and, where available, sub-state area industry projections published by individual state agencies and, in part, growth rates in national projections from the Bureau of Labor Statistics (BLS).

Through this combination of data sources, Emsi is able to fill gaps in individual sources (such as suppressions), yielding a composite database that leverages the strengths of all its sources. Finally, Emsi's database is updated quarterly, providing the most up-to-date integrated information possible.

### **JOB POSTING ANALYTICS**

Job postings are online advertisements for jobs, posted by companies trying to attract applicants. Analyzing job postings for information on the labor market can yield valuable insight, such as skills that employers are requesting, the companies that are posting jobs, where those jobs are located, and greater specificity in job titles. In addition, job postings also have virtually no lag time, as they can be collected from sites soon after being posted.



However, not all jobs are posted online, and in some cases, companies post far more positions than they intend to hire in an effort to cast a broad net for talent. Many factors can influence the number of postings that appear on the web for a particular job or company, including:

- Fluctuating prices of job postings;
- Building waiting lists of potential hires should positions become vacant;
- The hiring of new employees immediately or in six months;
- Postings left online after positions have been filled; and
- Duplicate postings for a given position.

It can be helpful to think of LMI as measuring the actions of all employers, whereas job postings analyses measure the intentions of those who post jobs. For postsecondary educational institutions, job postings indicate what is currently in demand across county or regional employers, including emerging needs. As such, job postings information can be used to help tailor program curricula so that graduates will be competitive in the job market. The sources collect about 100 million job postings per month from more than 90,000 companies. Emsi de-duplicates these postings down to approximately 8 million unique job postings per month. In the process, geographies are assigned to the postings as well as company names, job locations, skills, and so on.

Tables A2.1 to A2.3 show job postings for three occupations found throughout this report, selected because the occupations' titles are not helpful in a program's development. Note that the tables identify job postings using the SOC-O\*NET<sup>18</sup> system. LMI data are not available at the SOC-O\*NET level, but Emsi's job posting database has the ability for such searches. The tables also include data on unique job postings and posting intensity. Posting intensity is the ratio between total and unique job postings and can be seen as an indication of the intensity or effort by the poster to advertise and fill the position in question. The largest job poster is also identified (for non-staffing companies), as well as the number of total and unique job postings by the company for the O\*NET occupation. Job postings include advertisements in the RMLA Region 2 from October 2019 to September 2020 using Emsi's Employees & Self-Employed 2020.4 data run.

**Table A2.1: Job Postings in the U.S. for Computer Occupations, All Other**

<b>O*NET CODE</b>	<b>O*NET TITLE</b>	<b>UNIQUE POSTINGS</b>	<b>% TOTAL</b>	<b>POSTING INTENSITY</b>	<b>TOP COMPANY (TOTAL/UNIQUE)</b>
15-1199.09	Information Technology Project Managers	242	36.0%	4:1	Anthem, Inc. (30 / 11)

18 O\*NET refers to Occupational Information Network. Based on the SOC, the O\*NET-SOC taxonomy currently includes 974 occupations, developed under the sponsorship of the U.S. Department of Labor's Employment & Training Administration through a grant to the North Carolina Department of Commerce.



O*NET CODE	O*NET TITLE	UNIQUE POSTINGS	% TOTAL	POSTING INTENSITY	TOP COMPANY (TOTAL/UNIQUE)
15-1199.02	Computer Systems Engineers/Architects	215	32.0%	4:1	Humana Inc. (248 / 36)
15-1199.01	Software Quality Assurance Engineers and Testers	170	25.3%	4:1	Electronic Arts Inc. (121 / 22)
15-1199.05	Geographic Information Systems Technicians	13	1.9%	3:1	Computer Consultants International Corp (2 / 2)
15-1199.10	Search Marketing Strategists	10	1.5%	4:1	Gatorworks (24 / 5)
15-1199.08	Business Intelligence Analysts	8	1.2%	6:1	Axa Equitable Life Insurance Company (1 / 1)
15-1199.06	Database Architects	5	0.7%	15:1	Datsys Corporation (5 / 1)
15-1199.12	Document Management Specialists	5	0.7%	4:1	Dxp Enterprises, Inc. (15 / 2)
15-1199.03	Web Administrators	2	0.3%	6:1	United States Department of Defense (12 / 2)
15-1199.04	Geospatial Information Scientists and Technologists	2	0.3%	2:1	United States Department of Army (3 / 2)

Source: Emsi Job Posting Analytics October 2019 to September 2020. National Center for O\*NET Development, O\*NET OnLine.

Table A2.2: Job Postings in the U.S. for Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other

O*NET CODE	O*NET TITLE	UNIQUE POSTINGS	% TOTAL	POSTING INTENSITY	TOP COMPANY (TOTAL/UNIQUE)
11-9199.00	Managers, All Other	536	85.9%	5:1	Onemain Financial Holdings, LLC (158 / 33)
11-9199.02	Compliance Managers	50	8.0%	4:1	State of Louisiana (44 / 11)
11-9199.04	Supply Chain Managers	21	3.4%	4:1	I dex Corporation (32 / 4)
11-9199.01	Regulatory Affairs Managers	13	2.1%	8:1	J & J Family Corporation (79 / 7)
11-9199.07	Security Managers	2	0.3%	2:1	CB Richard Ellis, Inc. (3 / 1)
11-9199.08	Loss Prevention Managers	2	0.3%	8:1	Carlisle Group (25 / 1)

Source: Emsi Job Posting Analytics October 2019 to September 2020. National Center for O\*NET Development, O\*NET OnLine.

Table A2.3: Job Postings in the U.S. for Project Management Specialists and Business Operations Specialists, All Other

O*NET CODE	O*NET TITLE	UNIQUE POSTINGS	% TOTAL	POSTING INTENSITY	TOP COMPANY (TOTAL/UNIQUE)
13-1199.00	Business Operations Specialists, All Other	450	96.6%	4:1	Anthem, Inc. (138 / 51)
13-1199.04	Business Continuity Planners	7	1.5%	4:1	State of Louisiana (9 / 4)
13-1199.02	Security Management Specialists	6	1.3%	2:1	The Home Depot (7 / 5)
13-1199.01	Energy Auditors	2	0.4%	1:1	Aptima, Inc. (1 / 1)

<b>O*NET CODE</b>	<b>O*NET TITLE</b>	<b>UNIQUE POSTINGS</b>	<b>% TOTAL</b>	<b>POSTING INTENSITY</b>	<b>TOP COMPANY (TOTAL/UNIQUE)</b>
13-1199.05	Sustainability Specialists	1	0.2%	5:1	Restaurant Brands International Inc (5 / 1)

Source: Emsi Job Posting Analytics October 2019 to September 2020. National Center for O\*NET Development, O\*NET OnLine.



## APPENDIX 3: Additional Jobs Data

### INDUSTRY COMPOSITION

Table A3.1: Current and Projected Jobs by Industry Subsector in the RMLA Region 2, 2020 and 2030

NAICS CODE	NAICS TITLE	2020 JOBS	2030 JOBS	CHANGE	% CHANGE
902	State Government	43,406	43,618	212	0.5%
903	Local Government	41,744	44,025	2,282	5.5%
722	Food Services & Drinking Places	37,650	42,369	4,719	12.5%
238	Specialty Trade Contractors	27,259	28,684	1,424	5.2%
541	Professional, Scientific, & Technical Services	25,166	27,535	2,369	9.4%
621	Ambulatory Health Care Services	24,636	29,952	5,316	21.6%
561	Administrative & Support Services	23,118	25,407	2,289	9.9%
237	Heavy & Civil Engineering Construction	16,743	14,964	(1,779)	(10.6%)
622	Hospitals	13,121	14,748	1,627	12.4%
325	Chemical Manufacturing	12,322	12,564	242	2.0%
624	Social Assistance	11,541	13,066	1,525	13.2%
452	General Merchandise Stores	11,037	10,928	(109)	(1.0%)
236	Construction of Buildings	10,268	11,270	1,003	9.8%
813	Religious, Grantmaking, Civic, Professional, & Similar Organizations	9,119	9,509	390	4.3%
445	Food & Beverage Stores	9,012	9,478	466	5.2%
611	Educational Services	8,703	10,230	1,527	17.5%
423	Merchant Wholesalers, Durable Goods	8,515	8,564	49	0.6%
623	Nursing & Residential Care Facilities	8,129	9,095	966	11.9%
901	Federal Government	7,110	6,562	(548)	(7.7%)
441	Motor Vehicle & Parts Dealers	6,907	6,991	84	1.2%
524	Insurance Carriers & Related Activities	6,732	7,041	309	4.6%
811	Repair & Maintenance	6,251	6,480	229	3.7%
812	Personal & Laundry Services	6,248	6,740	493	7.9%
522	Credit Intermediation & Related Activities	6,041	5,674	(366)	(6.1%)
713	Amusement, Gambling, & Recreation Industries	5,810	6,159	349	6.0%

NAICS CODE	NAICS TITLE	2020 JOBS	2030 JOBS	CHANGE	% CHANGE
551	Management of Companies & Enterprises	5,678	5,728	51	0.9%
424	Merchant Wholesalers, Nondurable Goods	5,395	5,840	445	8.2%
332	Fabricated Metal Product Manufacturing	4,982	5,369	387	7.8%
447	Gasoline Stations	4,553	5,393	840	18.5%
484	Truck Transportation	4,498	4,501	3	0.1%
531	Real Estate	4,493	4,894	401	8.9%
444	Building Material & Garden Equipment & Supplies Dealers	4,267	4,181	(86)	(2.0%)
532	Rental & Leasing Services	3,906	4,948	1,042	26.7%
448	Clothing & Clothing Accessories Stores	3,763	3,089	(674)	(17.9%)
446	Health & Personal Care Stores	3,679	4,010	331	9.0%
488	Support Activities for Transportation	3,593	3,866	274	7.6%
721	Accommodation	3,179	3,125	(54)	(1.7%)
562	Waste Management & Remediation Services	3,166	3,653	488	15.4%
324	Petroleum & Coal Products Manufacturing	3,046	3,178	132	4.3%
311	Food Manufacturing	2,991	3,206	215	7.2%
221	Utilities	2,686	2,725	39	1.4%
492	Couriers & Messengers	2,670	3,484	814	30.5%
814	Private Households	2,588	2,929	341	13.2%
493	Warehousing & Storage	2,577	2,726	149	5.8%
453	Miscellaneous Store Retailers	2,270	1,973	(297)	(13.1%)
517	Telecommunications	1,910	1,551	(359)	(18.8%)
451	Sporting Goods, Hobby, Musical Instrument, & Book Stores	1,905	1,614	(291)	(15.3%)
711	Performing Arts, Spectator Sports, & Related Industries	1,509	1,743	234	15.5%
443	Electronics & Appliance Stores	1,508	1,583	75	5.0%
322	Paper Manufacturing	1,490	1,236	(253)	(17.0%)
512	Motion Picture & Sound Recording Industries	1,441	1,519	78	5.4%
442	Furniture & Home Furnishings Stores	1,298	1,223	(75)	(5.8%)
425	Wholesale Electronic Markets & Agents & Brokers	1,278	1,377	99	7.8%
327	Nonmetallic Mineral Product Manufacturing	1,247	1,387	140	11.3%
339	Miscellaneous Manufacturing	1,082	1,233	151	14.0%
523	Securities, Commodity Contracts, & Other Financial Investments & Related Activities	1,005	1,047	41	4.1%
331	Primary Metal Manufacturing	977	1,119	142	14.5%



NAICS CODE	NAICS TITLE	2020 JOBS	2030 JOBS	CHANGE	% CHANGE
454	Nonstore Retailers	951	1,273	322	33.9%
321	Wood Product Manufacturing	927	975	48	5.1%
336	Transportation Equipment Manufacturing	925	1,007	82	8.9%
333	Machinery Manufacturing	914	1,150	235	25.7%
482	Rail Transportation	887	1,050	163	18.4%
518	Data Processing, Hosting, & Related Services	853	1,137	283	33.2%
485	Transit & Ground Passenger Transportation	847	999	152	17.9%
511	Publishing Industries (except Internet)	818	649	(169)	(20.7%)
111	Crop Production	804	790	(14)	(1.8%)
323	Printing & Related Support Activities	784	668	(115)	(14.7%)
312	Beverage & Tobacco Product Manufacturing	618	690	72	11.7%
213	Support Activities for Mining	600	532	(68)	(11.3%)
326	Plastics & Rubber Products Manufacturing	582	604	23	3.9%
115	Support Activities for Agriculture & Forestry	569	675	105	18.5%
337	Furniture & Related Product Manufacturing	525	597	72	13.7%
483	Water Transportation	482	473	(9)	0
112	Animal Production & Aquaculture	480	586	106	22.1%
486	Pipeline Transportation	469	501	32	6.8%
515	Broadcasting (except Internet)	381	326	(55)	(14.5%)
334	Computer & Electronic Product Manufacturing	369	406	37	10.1%
211	Oil & Gas Extraction	253	501	248	1
712	Museums, Historical Sites, & Similar Institutions	251	317	66	26.2%
212	Mining (except Oil & Gas)	236	241	5	2.0%
114	Fishing, Hunting & Trapping	227	242	15	6.4%
481	Air Transportation	207	171	(36)	(17.3%)
335	Electrical Equipment, Appliance, & Component Manufacturing	187	238	51	27.2%
314	Textile Product Mills	184	167	(17)	(9.3%)
113	Forestry & Logging	156	110	(46)	(29.4%)
519	Other Information Services	128	196	67	52.5%
313	Textile Mills	69	112	43	62.7%
315	Apparel Manufacturing	59	77	18	30.1%
491	Postal Service	44	56	12	27.8%



NAICS CODE	NAICS TITLE	2020 JOBS	2030 JOBS	CHANGE	% CHANGE
525	Funds, Trusts, & Other Financial Vehicles	43	66	22	51.0%
487	Scenic & Sightseeing Transportation	25	33	8	33.6%
533	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	13	10	(3)	(26.4%)
521	Monetary Authorities-Central Bank	2	4	2	1
316	Leather & Allied Product Manufacturing	0	0	0	0.0%
<b>Total</b>		<b>493,087</b>	<b>524,732</b>	<b>31,647</b>	<b>6.4%</b>

Source: Employees & Self-Employed 2020.4.

Table A3.2: Employment Concentration (LQ) by Industry Subsector in the RMLA Region 2, 2020 and 2030

NAICS CODE	NAICS TITLE	2020 LQ	2030 LQ
324	Petroleum & Coal Products Manufacturing	9.03	9.76
237	Heavy & Civil Engineering Construction	4.95	3.85
325	Chemical Manufacturing	4.82	4.86
486	Pipeline Transportation	3.09	3.08
902	State Government	2.66	2.62
483	Water Transportation	2.39	2.34
114	Fishing, Hunting & Trapping	2.37	2.70
562	Waste Management & Remediation Services	2.28	2.37
532	Rental & Leasing Services	2.22	2.67
221	Utilities	1.63	1.63
447	Gasoline Stations	1.61	1.83
236	Construction of Buildings	1.53	1.51
238	Specialty Trade Contractors	1.51	1.46
488	Support Activities for Transportation	1.50	1.47
322	Paper Manufacturing	1.37	1.22
482	Rail Transportation	1.34	1.56
452	General Merchandise Stores	1.23	1.25
811	Repair & Maintenance	1.23	1.24
446	Health & Personal Care Stores	1.15	1.22
332	Fabricated Metal Product Manufacturing	1.12	1.20
441	Motor Vehicle & Parts Dealers	1.11	1.10



NAICS CODE	NAICS TITLE	2020 LQ	2030 LQ
451	Sporting Goods, Hobby, Musical Instrument, & Book Stores	1.08	0.99
444	Building Material & Garden Equipment & Supplies Dealers	1.07	1.01
713	Amusement, Gambling, & Recreation Industries	1.05	1.02
722	Food Services & Drinking Places	1.04	1.05
443	Electronics & Appliance Stores	1.03	1.22
813	Religious, Grantmaking, Civic, Professional, & Similar Organizations	1.03	1.03
492	Couriers & Messengers	1.02	1.20
621	Ambulatory Health Care Services	1.02	1.01
814	Private Households	1.00	1.13
327	Nonmetallic Mineral Product Manufacturing	0.98	1.11
445	Food & Beverage Stores	0.97	1.02
903	Local Government	0.97	1.01
491	Postal Service	0.97	0.92
512	Motion Picture & Sound Recording Industries	0.94	0.93
448	Clothing & Clothing Accessories Stores	0.94	0.89
812	Personal & Laundry Services	0.93	0.93
517	Telecommunications	0.89	0.87
423	Merchant Wholesalers, Durable Goods	0.88	0.88
484	Truck Transportation	0.87	0.83
442	Furniture & Home Furnishings Stores	0.87	0.80
525	Funds, Trusts, & Other Financial Vehicles	0.86	1.06
622	Hospitals	0.86	0.91
331	Primary Metal Manufacturing	0.85	1.04
624	Social Assistance	0.85	0.81
424	Merchant Wholesalers, Nondurable Goods	0.82	0.88
623	Nursing & Residential Care Facilities	0.81	0.83
518	Data Processing, Hosting, & Related Services	0.80	0.90
425	Wholesale Electronic Markets & Agents & Brokers	0.80	0.88
561	Administrative & Support Services	0.80	0.82
551	Management of Companies & Enterprises	0.79	0.75
453	Miscellaneous Store Retailers	0.78	0.69
524	Insurance Carriers & Related Activities	0.77	0.76
541	Professional, Scientific, & Technical Services	0.77	0.75





NAICS CODE	NAICS TITLE	2020 LQ	2030 LQ
522	Credit Intermediation & Related Activities	0.76	0.70
321	Wood Product Manufacturing	0.72	0.76
312	Beverage & Tobacco Product Manufacturing	0.70	0.72
611	Educational Services	0.69	0.72
113	Forestry & Logging	0.68	0.53
531	Real Estate	0.67	0.69
493	Warehousing & Storage	0.67	0.59
211	Oil & Gas Extraction	0.60	1.31
311	Food Manufacturing	0.60	0.62
323	Printing & Related Support Activities	0.60	0.62
213	Support Activities for Mining	0.59	0.45
711	Performing Arts, Spectator Sports, & Related Industries	0.57	0.62
339	Miscellaneous Manufacturing	0.55	0.62
721	Accommodation	0.52	0.49
314	Textile Product Mills	0.51	0.49
901	Federal Government	0.49	0.46
712	Museums, Historical Sites, & Similar Institutions	0.47	0.53
515	Broadcasting (except Internet)	0.47	0.42
337	Furniture & Related Product Manufacturing	0.43	0.50
454	Nonstore Retailers	0.43	0.48
212	Mining (except Oil & Gas)	0.41	0.41
485	Transit & Ground Passenger Transportation	0.38	0.38
112	Animal Production & Aquaculture	0.37	0.47
511	Publishing Industries (except Internet)	0.35	0.27
111	Crop Production	0.34	0.33
115	Support Activities for Agriculture & Forestry	0.33	0.36
523	Securities, Commodity Contracts, & Other Financial Investments & Related Activities	0.33	0.32
333	Machinery Manufacturing	0.27	0.35
326	Plastics & Rubber Products Manufacturing	0.27	0.28
313	Textile Mills	0.21	0.41
487	Scenic & Sightseeing Transportation	0.21	0.25
533	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	0.19	0.15



NAICS CODE	NAICS TITLE	2020 LQ	2030 LQ
336	Transportation Equipment Manufacturing	0.18	0.19
315	Apparel Manufacturing	0.17	0.30
335	Electrical Equipment, Appliance, & Component Manufacturing	0.16	0.20
481	Air Transportation	0.14	0.11
519	Other Information Services	0.12	0.14
334	Computer & Electronic Product Manufacturing	0.11	0.14
521	Monetary Authorities-Central Bank	0.04	0.07
316	Leather & Allied Product Manufacturing	0.00	0.00

Source: Employees & Self-Employed 2020.4.

## INDUSTRY STAFFING PATTERNS

The following tables show the staffing patterns of the industry subsectors discussed in Chapter 2. The Entry Ed Level Column describes the typical award level required for an entry level position in the occupation. “None” or “<HS/GED” indicates that the occupation typically requires no formal educational credential; “HS/GED” refers to a high school diploma or its equivalent, a General Equivalency Development or General Equivalency Diploma test; “Cert” refers to a postsecondary nondegree award or some college education with no degree; and “Doctoral” refers to a doctoral or professional degree level of education. The other education classifications are straightforward.

Table A3.3: Employment Projections in the RMLA Region 2 for the Top 25 Occupations Related to the State Government Industry Subsector

SOC TITLE	2020 JOBS	2030 JOBS	JOB OPENINGS	% JOBS IN INDUSTRY	MEDIAN HOURLY WAGE	ENTRY ED LEVEL
Postsecondary Teachers	3,740	3,926	393	8.6%	\$32.71	BACH
Educational Instruction and Library Workers, All Other	2,789	2,825	580	6.4%	\$10.20	BACH
Office Clerks, General	2,572	2,604	1,299	5.9%	\$12.05	CERT
Correctional Officers and Jailers	2,351	2,174	239	5.4%	\$16.86	CERT
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	1,933	1,873	817	4.5%	\$15.48	CERT
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	1,199	1,324	1,215	2.8%	\$10.13	HS/GED
Project Management Specialists and Business Operations Specialists, All Other	1,130	1,129	547	2.6%	\$25.85	BACH

<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>JOB OPENINGS</b>	<b>% JOBS IN INDUSTRY</b>	<b>MEDIAN HOURLY WAGE</b>	<b>ENTRY ED LEVEL</b>
Executive Secretaries and Executive Administrative Assistants	967	778	355	2.2%	\$19.07	CERT
Police and Sheriffs Patrol Officers	846	876	211	1.9%	\$20.64	BACH
Teaching Assistants, Postsecondary	840	863	75	1.9%	\$18.21	BACH
Maintenance and Repair Workers, General	819	875	625	1.9%	\$18.80	HS/GED
Registered Nurses	593	529	524	1.4%	\$29.93	BACH
Educational, Guidance, and Career Counselors and Advisors	579	617	175	1.3%	\$26.93	MAST
First-Line Supervisors of Correctional Officers	538	496	41	1.2%	\$26.25	CERT
Office and Administrative Support Workers, All Other	534	593	121	1.2%	\$18.01	BACH
First-Line Supervisors of Office and Administrative Support Workers	530	495	532	1.2%	\$23.23	BACH
Education Administrators, Postsecondary	497	507	42	1.1%	\$37.24	BACH
Computer User Support Specialists	479	529	165	1.1%	\$21.72	BACH
Bookkeeping, Accounting, and Auditing Clerks	477	474	640	1.1%	\$18.54	CERT
Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	470	467	352	1.1%	\$37.58	BACH
Security Guards	419	421	623	1.0%	\$12.83	CERT
Compliance Officers	408	409	101	0.9%	\$25.41	BACH
Community and Social Service Specialists, All Other	395	391	99	0.9%	\$23.75	BACH
Accountants and Auditors	370	372	352	0.9%	\$28.00	BACH
Instructional Coordinators	360	358	107	0.8%	\$23.77	BACH

Source: Employees & Self-Employed 2020.4.

Table A3.4: Employment Projections in the RMLA Region 2 for the Top 25 Occupations Related to the Specialty Trade Contractors Industry Subsector

<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>JOB OPENINGS</b>	<b>% JOBS IN INDUSTRY</b>	<b>MEDIAN HOURLY WAGE</b>	<b>ENTRY ED LEVEL</b>
Electricians	3,453	3,555	511	12.7%	\$24.36	HS/GED
Construction Laborers	2,854	3,092	933	10.5%	\$16.24	HS/GED
Plumbers, Pipefitters, and Steamfitters	1,874	1,997	454	6.9%	\$27.46	HS/GED
Carpenters	1,731	1,748	665	6.4%	\$21.82	HS/GED
First-Line Supervisors of Construction Trades and Extraction Workers	1,632	1,703	596	6.0%	\$28.77	HS/GED

<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>JOB OPENINGS</b>	<b>% JOBS IN INDUSTRY</b>	<b>MEDIAN HOURLY WAGE</b>	<b>ENTRY ED LEVEL</b>
Helpers--Electricians	1,095	1,069	160	4.0%	\$14.66	HS/GED
Painters, Construction and Maintenance	1,015	869	224	3.7%	\$19.76	HS/GED
Insulation Workers, Mechanical	980	1,118	188	3.6%	\$21.44	HS/GED
Operating Engineers and Other Construction Equipment Operators	782	847	336	2.9%	\$23.35	HS/GED
Helpers, Construction Trades, All Other	643	685	228	2.4%	\$16.27	HS/GED
Insulation Workers, Floor, Ceiling, and Wall	622	514	108	2.3%	\$21.61	HS/GED
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	608	676	122	2.2%	\$21.70	HS/GED
Office Clerks, General	562	571	1,299	2.1%	\$12.05	CERT
Construction Managers	546	547	128	2.0%	\$36.81	BACH
Miscellaneous Construction and Related Workers	514	555	193	1.9%	\$22.11	HS/GED
Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	354	387	352	1.3%	\$37.58	BACH
Sheet Metal Workers	347	380	80	1.3%	\$22.79	HS/GED
Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	340	358	85	1.2%	\$18.04	HS/GED
Heavy and Tractor-Trailer Truck Drivers	336	367	620	1.2%	\$19.68	HS/GED
General and Operations Managers	335	372	686	1.2%	\$43.28	BACH
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	301	286	817	1.1%	\$15.48	CERT
Bookkeeping, Accounting, and Auditing Clerks	257	254	640	0.9%	\$18.54	CERT
Structural Iron and Steel Workers	241	283	70	0.9%	\$25.07	HS/GED
Cement Masons and Concrete Finishers	234	263	47	0.9%	\$19.41	HS/GED
Welders, Cutters, Solderers, and Brazers	225	258	380	0.8%	\$31.54	HS/GED

Source: Employees & Self-Employed 2020.4.

Table A3.5: Employment Projections in the RMLA Region 2 for the Top 25 Occupations Related to the Heavy and Civil Engineering Construction Industry Subsector

<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>JOB OPENINGS</b>	<b>% JOBS IN INDUSTRY</b>	<b>MEDIAN HOURLY WAGE</b>	<b>ENTRY ED LEVEL</b>
Construction Laborers	2,950	2,717	933	17.6%	\$16.24	HS/GED



<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>JOB OPENINGS</b>	<b>% JOBS IN INDUSTRY</b>	<b>MEDIAN HOURLY WAGE</b>	<b>ENTRY ED LEVEL</b>
First-Line Supervisors of Construction Trades and Extraction Workers	1,662	1,457	596	9.9%	\$28.77	HS/GED
Operating Engineers and Other Construction Equipment Operators	1,303	1,212	336	7.8%	\$23.35	HS/GED
Carpenters	1,150	1,034	665	6.9%	\$21.82	HS/GED
Plumbers, Pipefitters, and Steamfitters	842	614	454	5.0%	\$27.46	HS/GED
Welders, Cutters, Solderers, and Brazers	694	566	380	4.1%	\$31.54	HS/GED
Helpers, Construction Trades, All Other	504	373	228	3.0%	\$16.27	HS/GED
Construction Managers	371	352	128	2.2%	\$36.81	BACH
Heavy and Tractor-Trailer Truck Drivers	319	306	620	1.9%	\$19.68	HS/GED
Office Clerks, General	305	263	1,299	1.8%	\$12.05	CERT
Boilermakers	292	222	63	1.7%	\$30.18	HS/GED
General and Operations Managers	280	260	686	1.7%	\$43.28	BACH
Insulation Workers, Mechanical	262	235	188	1.6%	\$21.44	HS/GED
Miscellaneous Construction and Related Workers	234	208	193	1.4%	\$22.11	HS/GED
Project Management Specialists and Business Operations Specialists, All Other	199	184	547	1.2%	\$25.85	BACH
Laborers and Freight, Stock, and Material Movers, Hand	187	163	1,650	1.1%	\$12.99	HS/GED
Pipelayers	165	168	31	1.0%	\$14.41	HS/GED
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	165	136	817	1.0%	\$15.48	CERT
Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	161	116	85	1.0%	\$18.04	HS/GED
Bookkeeping, Accounting, and Auditing Clerks	158	135	640	0.9%	\$18.54	CERT
Painters, Construction and Maintenance	157	138	224	0.9%	\$19.76	HS/GED
Mobile Heavy Equipment Mechanics, Except Engines	142	134	76	0.8%	\$26.27	HS/GED
Crane and Tower Operators	138	121	80	0.8%	\$26.50	HS/GED
Electricians	134	139	511	0.8%	\$24.36	HS/GED
Cost Estimators	130	125	76	0.8%	\$31.87	BACH

Source: Employees & Self-Employed 2020.4.

Table A3.6: Employment Projections in the RMLA Region 2 for the Top 25 Occupations Related to the Chemical Manufacturing Industry Subsector

<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>JOB OPENINGS</b>	<b>% JOBS IN INDUSTRY</b>	<b>MEDIAN HOURLY WAGE</b>	<b>ENTRY ED LEVEL</b>
Chemical Plant and System Operators	1,345	1,299	166	10.9%	\$34.31	CERT
Chemical Equipment Operators and Tenders	1,138	1,161	148	9.2%	\$34.63	HS/GED
First-Line Supervisors of Production and Operating Workers	643	657	271	5.2%	\$39.88	HS/GED
Chemical Technicians	586	595	97	4.8%	\$34.22	BACH
Chemical Engineers	520	595	54	4.2%	\$59.51	BACH
Production Workers, All Other	419	424	214	3.4%	\$17.21	HS/GED
Industrial Machinery Mechanics	402	440	160	3.3%	\$30.40	HS/GED
Maintenance and Repair Workers, General	386	392	625	3.1%	\$18.80	HS/GED
Laborers and Freight, Stock, and Material Movers, Hand	360	367	1,650	2.9%	\$12.99	HS/GED
Inspectors, Testers, Sorters, Samplers, and Weighers	320	325	248	2.6%	\$26.39	HS/GED
Mixing and Blending Machine Setters, Operators, and Tenders	297	309	65	2.4%	\$21.13	HS/GED
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	275	284	477	2.2%	\$26.15	BACH
General and Operations Managers	234	239	686	1.9%	\$43.28	BACH
Industrial Production Managers	191	195	43	1.6%	\$51.90	BACH
Shipping, Receiving, and Inventory Clerks	170	169	175	1.4%	\$15.76	HS/GED
Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	165	169	352	1.3%	\$37.58	BACH
Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic and Glass Fibers	150	151	23	1.2%	\$16.40	HS/GED
First-Line Supervisors of Mechanics, Installers, and Repairers	142	144	223	1.2%	\$31.57	CERT
Heavy and Tractor-Trailer Truck Drivers	133	135	620	1.1%	\$19.68	HS/GED
Engineers, All Other	127	131	120	1.0%	\$39.49	BACH
Packaging and Filling Machine Operators and Tenders	126	138	53	1.0%	\$15.69	HS/GED
Industrial Truck and Tractor Operators	122	125	207	1.0%	\$19.08	HS/GED
Industrial Engineers	122	127	37	1.0%	\$43.24	BACH
Office Clerks, General	120	114	1,299	1.0%	\$12.05	CERT
Chemists	119	135	23	1.0%	\$42.45	BACH



Source: Employees & Self-Employed 2020.4.

Table A3.7: Employment Projections in the RMLA Region 2 for the Top 25 Occupations Related to the Construction of Buildings Industry Subsector

<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>JOB OPENINGS</b>	<b>% JOBS IN INDUSTRY</b>	<b>MEDIAN HOURLY WAGE</b>	<b>ENTRY ED LEVEL</b>
Carpenters	2,589	2,754	665	25.2%	\$21.82	HS/GED
Construction Laborers	1,209	1,378	933	11.8%	\$16.24	HS/GED
First-Line Supervisors of Construction Trades and Extraction Workers	1,134	1,251	596	11.0%	\$28.77	HS/GED
Construction Managers	537	599	128	5.2%	\$36.81	BACH
Painters, Construction and Maintenance	461	493	224	4.5%	\$19.76	HS/GED
Plumbers, Pipefitters, and Steamfitters	323	354	454	3.1%	\$27.46	HS/GED
Project Management Specialists and Business Operations Specialists, All Other	217	243	547	2.1%	\$25.85	BACH
Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	211	246	352	2.1%	\$37.58	BACH
Office Clerks, General	190	202	1,299	1.9%	\$12.05	CERT
Helpers--Carpenters	182	202	61	1.8%	\$18.04	HS/GED
General and Operations Managers	166	189	686	1.6%	\$43.28	BACH
Helpers, Construction Trades, All Other	161	179	228	1.6%	\$16.27	HS/GED
Structural Iron and Steel Workers	142	158	70	1.4%	\$25.07	HS/GED
Welders, Cutters, Solderers, and Brazers	139	154	380	1.4%	\$31.54	HS/GED
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	127	129	817	1.2%	\$15.48	CERT
Cost Estimators	118	135	76	1.2%	\$31.87	BACH
Miscellaneous Construction and Related Workers	117	128	193	1.1%	\$22.11	HS/GED
Bookkeeping, Accounting, and Auditing Clerks	115	121	640	1.1%	\$18.54	CERT
Electricians	107	123	511	1.0%	\$24.36	HS/GED
Operating Engineers and Other Construction Equipment Operators	99	110	336	1.0%	\$23.35	HS/GED
Millwrights	83	92	49	0.8%	\$27.18	HS/GED
Boilermakers	80	79	63	0.8%	\$30.18	HS/GED
Insulation Workers, Floor, Ceiling, and Wall	68	76	108	0.7%	\$21.61	HS/GED



SOC TITLE	2020 JOBS	2030 JOBS	JOB OPENINGS	% JOBS IN INDUSTRY	MEDIAN HOURLY WAGE	ENTRY ED LEVEL
Civil Engineers	67	77	82	0.6%	\$44.99	BACH
Helpers--Painters, Paperhangers, Plasterers, and Stucco Masons	64	67	37	0.6%	\$15.33	HS/GED

Source: Employees & Self-Employed 2020.4.

## WORKFORCE COMMUTING PATTERNS

Table A3.8: RMLA Region 2 Job Inflow and Outflow

COMMUTING PATTERN	JOBS	COMMUTE SHARE
<b>EMPLOYMENT PATTERNS</b>		
Employed in the RMLA Region 2	423,280	100%
Employed in the RMLA Region 2 but living outside	110,970	26%
Employed and living in the RMLA Region 2	312,310	74%
<b>RESIDENTIAL PATTERNS</b>		
Living in the RMLA Region 2	393,950	100%
Living in the RMLA Region 2 but employed outside	81,640	21%
Living and employed in the RMLA Region 2	312,310	79%

Source: Census Bureau, Center for Economic Studies.

## EDUCATIONAL ATTAINMENT

Table A3.9: Highest Educational Attainments of Adults in the RMLA Region 2

EDUCATION LEVEL	2015 ADULTS	2015 % ADULTS	2020 ADULTS	2020 % ADULTS	CHANGE
Less than high school diploma or equivalent	88,921	14%	95,929	14%	7,008
High school diploma or equivalent	217,060	33%	226,363	34%	9,302
Some college	138,589	21%	145,249	22%	6,660
Associate degree	36,762	6%	37,857	6%	1,095
Bachelor's degree	110,486	17%	110,670	16%	184
Graduate degree or higher	56,946	9%	55,865	8%	(1,081)
<b>Total</b>	<b>648,764</b>	<b>100%</b>	<b>671,932</b>	<b>100%</b>	<b>23,168</b>

Source: Emsi demographics data and U.S. Census Bureau, American Community Survey.



Table A3.10: Highest Educational Attainments of Adults in the RMLA Region 2 by Gender

EDUCATION LEVEL	ADULT MALES	% ADULT MALES	ADULT FEMALES	% ADULT FEMALES
Less than high school diploma or equivalent	51,683	16%	44,246	13%
High school diploma or equivalent	112,057	35%	114,306	33%
Some college	67,886	21%	77,362	22%
Associate degree	17,323	5%	20,534	6%
Bachelor's degree	48,751	15%	61,919	18%
Graduate degree and higher	24,430	8%	31,434	9%
<b>Total</b>	<b>322,130</b>	<b>100%</b>	<b>349,802</b>	<b>100%</b>

Source: Emsi demographics data and U.S. Census Bureau, American Community Survey.

Table A3.11: Highest Educational Attainments of Adults in the RMLA Region 2 by Major Race and Ethnic Groups

GROUP		<HS	HS	SOME COLLEGE	ASSOC	BACH	>BACH
White, non-Hispanic	Adults	41,029	137,088	86,951	24,568	81,693	38,020
	% Adults	10%	33%	21%	6%	20%	9%
Black, non-Hispanic	Adults	44,715	77,173	52,177	10,474	22,537	12,292
	% Adults	20%	35%	24%	5%	10%	6%
American Indian or Alaskan native, non-Hispanic	Adults	568	686	299	175	133	110
	% Adults	29%	35%	15%	9%	7%	6%
Asian, non-Hispanic	Adults	1,574	2,526	1,203	746	2,721	3,542
	% Adults	13%	21%	10%	6%	22%	29%
Native Hawaiian or Pacific Islander, non-Hispanic	Adults	81	29	20	18	35	16
	% Adults	41%	14%	10%	9%	18%	8%
Two or more races, non-Hispanic	Adults	633	1,367	1,274	387	993	595
	% Adults	12%	26%	24%	7%	19%	11%
Hispanic, all types	Adults	7,331	7,495	3,325	1,489	2,558	1,289
	% Adults	31%	32%	14%	6%	11%	5%

Source: Emsi demographics data and U.S. Census Bureau, American Community Survey.



## APPENDIX 4: Program to Occupation Map

Table A4.1 displays the crosswalk between educational programs (CIP codes) and occupations (SOC codes) that Emsi uses to complete the program demand gap analysis. Also listed are the adjustment factors which are applied to the annual job openings for each occupation in each program, described in Appendix 5.

Table A4.1: Program to Occupation Map with Employment Adjustment Factors

CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
01.0601	Applied Horticulture/Horticulture Operations, General	11-9013	Farmers, Ranchers, & Other Agricultural Managers	54	34	33
		27-1023	Floral Designers	30	27	60
		37-1012	First-Line Supervisors of Landscaping, Lawn Service, & Groundskeeping Workers	55	34	25
		37-3011	Landscaping & Groundskeeping Workers	57	26	9
		37-3012	Pesticide Handlers, Sprayers, & Applicators, Vegetation	55	27	12
		37-3013	Tree Trimmers & Pruners	56	25	9
		45-1011	First-Line Supervisors of Farming, Fishing, & Forestry Workers	49	28	22
		45-2092	Farmworkers & Laborers, Crop, Nursery, & Greenhouse	42	20	9
		10.0303	Prepress/Desktop Publishing & Digital Imaging Design	27-1011	Art Directors	33
27-1014	Special Effects Artists and Animators			33	27	57
27-1024	Graphic Designers			22	25	67
27-2012	Producers & Directors			19	18	69
43-9031	Desktop Publishers			44	38	46
51-5111	Prepress Technicians & Workers			63	46	25
11.0701	Computer Science	11-3021	Computer & Information Systems Managers	19	21	60
		15-1221	Computer and Information Research	11	8	40

CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
			Scientists			
		15-1211	Computer Systems Analysts	13	14	63
		15-1212	Information Security Analysts	22	26	60
		15-1251	Computer Programmers	21	21	60
		15-1256	Software Developers and Software Quality Assurance Analysts and Testers	10	11	60
		15-1257	Web Developers and Digital Interface Designers	25	27	64
		15-1245	Database Administrators and Architects	15	17	59
		15-1244	Network and Computer Systems Administrators	30	36	58
		15-1241	Computer Network Architects	23	32	60
		15-1232	Computer User Support Specialists	43	45	49
		15-1231	Computer Network Support Specialists	43	45	49
		15-1299	Computer Occupations, All Other	39	41	50
		15-2041	Statisticians	6	8	50
		17-2061	Computer Hardware Engineers	12	14	57
11.0901	Computer Systems Networking & Telecommunications	11-3021	Computer & Information Systems Managers	19	21	60
		13-1198	Project Management Specialists and Business Operations Specialists, All Other	28	25	52
		15-1221	Computer and Information Research Scientists	11	8	40
		15-1211	Computer Systems Analysts	13	14	63
		15-1212	Information Security Analysts	22	26	60
		15-1251	Computer Programmers	21	21	60
		15-1245	Database Administrators and Architects	15	17	59
		15-1244	Network and	30	36	58



CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
			Computer Systems Administrators			
		15-1241	Computer Network Architects	23	32	60
		15-1231	Computer Network Support Specialists	43	45	49
		15-1299	Computer Occupations, All Other	39	41	50
12.0401	Cosmetology/Cosmetologist, General	39-1098	First-Line Supervisors of Personal Service and Entertainment Workers, Except Gambling Services	61	50	33
		39-5011	Barbers	77	38	10
		39-5012	Hairdressers, Hairstylists, & Cosmetologists	77	50	17
		39-5091	Makeup Artists, Theatrical & Performance	61	40	19
		39-5092	Manicurists & Pedicurists	60	40	19
		39-5093	Shampooers	61	40	19
		39-5094	Skincare Specialists	61	45	21
12.0402	Barbering/Barber	39-5011	Barbers	77	38	10
12.0503	Culinary Arts/Chef Training	11-9051	Food Service Managers	64	44	25
		35-1011	Chefs & Head Cooks	56	46	29
		35-1012	First-Line Supervisors of Food Preparation & Serving Workers	70	47	18
		35-2012	Cooks, Institution & Cafeteria	65	31	8
		35-2013	Cooks, Private Household	65	31	8
		35-2014	Cooks, Restaurant	65	31	8
		35-2015	Cooks, Short Order	65	31	8
13.0101	Education, General	11-9031	Education and Childcare Administrators, Preschool and Daycare	23	23	41
		11-9032	Education Administrators, Kindergarten through Secondary	23	23	41
		25-2011	Preschool Teachers, Except Special Education	48	46	44



CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
		25-2012	Kindergarten Teachers, Except Special Education	48	46	44
		25-2021	Elementary School Teachers, Except Special Education	4	7	60
		25-2022	Middle School Teachers, Except Special & Career/Technical Education	4	7	60
		25-2031	Secondary School Teachers, Except Special & Career/Technical Education	6	7	58
		25-3011	Adult Basic Education, Adult Secondary Education, and English as a Second Language Instructors	51	42	37
		25-9031	Instructional Coordinators	31	28	43
		25-9045	Teaching Assistants, Except Postsecondary	59	42	33
14.0101	Engineering, General	11-9041	Architectural & Engineering Managers	7	9	59
		17-2011	Aerospace Engineers	9	9	61
		17-2021	Agricultural Engineers	5	9	60
		17-2031	Bioengineers and Biomedical Engineers	5	9	60
		17-2041	Chemical Engineers	10	9	69
		17-2051	Civil Engineers	11	11	66
		17-2061	Computer Hardware Engineers	12	14	57
		17-2071	Electrical Engineers	11	12	60
		17-2072	Electronics Engineers, Except Computer	11	12	60
		17-2081	Environmental Engineers	10	7	59
		17-2111	Health & Safety Engineers, Except Mining Safety Engineers & Inspectors	13	12	70
		17-2112	Industrial Engineers	13	12	70
		17-2121	Marine Engineers & Naval Architects	11	13	71
		17-2131	Materials Engineers	13	12	65



CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
		17-2141	Mechanical Engineers	11	12	69
		17-2151	Mining & Geological Engineers, Including Mining Safety Engineers	8	7	70
		17-2161	Nuclear Engineers	11	12	62
		17-2171	Petroleum Engineers	8	7	70
		17-2199	Engineers, All Other	11	12	62
15.0404	Instrumentation Technology/Technician	17-3023	Electrical and Electronic Engineering Technologists and Technicians	59	56	36
		17-3024	Electro-Mechanical and Mechatronics Technologists and Technicians	59	53	35
		17-3026	Industrial Engineering Technologists and Technicians	59	53	35
		17-3098	Calibration Technologists and Technicians and Engineering Technicians, Except Drafters, All Other	59	53	35
		49-2094	Electrical & Electronics Repairers, Commercial & Industrial Equipment	74	48	19
		49-9069	Precision Instrument & Equipment Repairers, All Other	55	49	37
		51-2028	Electrical, Electronic, & Electromechanical Assemblers, Except Coil Winders, Tapers, & Finishers	69	39	15
15.0699	Industrial Production Technologies/Technicians, Other	17-3026	Industrial Engineering Technologists and Technicians	59	53	35
15.1301	Drafting & Design Technology/Technician, General	17-3011	Architectural & Civil Drafters	37	55	57
		17-3012	Electrical & Electronics Drafters	38	56	56
		17-3013	Mechanical Drafters	38	56	56
		17-3019	Drafters, All Other	38	56	56
		27-1021	Commercial & Industrial Designers	25	26	65
		51-9162	Computer Numerically Controlled Tool Programmers	73	48	18

CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
19.0709	Child Care Provider/Assistant	21-1021	Child, Family, & School Social Workers	14	13	56
		21-1093	Social & Human Service Assistants	37	34	49
		25-9045	Teaching Assistants, Except Postsecondary	59	42	33
		39-9011	Childcare Workers	66	46	21
22.0302	Legal Assistant/Paralegal	13-1041	Compliance Officers	22	23	53
		23-2011	Paralegals & Legal Assistants	26	34	64
		23-2093	Title Examiners, Abstractors, & Searchers	33	32	53
		23-2099	Legal Support Workers, All Other	30	29	55
		43-6012	Legal Secretaries and Administrative Assistants	54	48	41
43.0104	Criminal Justice/Safety Studies	11-9161	Emergency Management Directors	27	36	59
		11-9198	Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	32	26	49
		13-1041	Compliance Officers	22	23	53
		13-1198	Project Management Specialists and Business Operations Specialists, All Other	28	25	52
		13-2098	Financial and Investment Analysts, Financial Risk Specialists, and Financial Specialists, All Other	11	11	63
		15-1212	Information Security Analysts	22	26	60
		21-1021	Child, Family, & School Social Workers	14	13	56
		21-1092	Probation Officers & Correctional Treatment Specialists	18	19	66
		33-1011	First-Line Supervisors of Correctional Officers	60	53	34
		33-1012	First-Line Supervisors of Police & Detectives	47	50	45
33-2021	Fire Inspectors &	66	42	29		



CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
			Investigators			
		33-3011	Bailiffs	65	51	32
		33-3012	Correctional Officers & Jailers	67	51	30
		33-3021	Detectives & Criminal Investigators	26	30	55
		33-3051	Police & Sheriff's Patrol Officers	44	47	51
		33-3052	Transit & Railroad Police	44	47	51
		33-9021	Private Detectives & Investigators	32	29	54
		43-5031	Public Safety Telecommunicators	63	52	31
43.0107	Criminal Justice/Police Science	11-9161	Emergency Management Directors	27	36	59
		33-1012	First-Line Supervisors of Police & Detectives	47	50	45
		33-3011	Bailiffs	65	51	32
		33-3021	Detectives & Criminal Investigators	26	30	55
		33-3051	Police & Sheriff's Patrol Officers	44	47	51
		33-3052	Transit & Railroad Police	44	47	51
		33-9021	Private Detectives & Investigators	32	29	54
46.0000	Construction Trades, General	11-9021	Construction Managers	41	28	48
		11-9198	Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	32	26	49
		11-1011	Chief Executives	23	22	55
		11-1021	General & Operations Managers	43	37	46
		13-1051	Cost Estimators	42	38	49
		41-4012	Sales Representatives, Wholesale & Manufacturing, Except Technical & Scientific Products	40	31	51
		47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	66	33	18





CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
		47-2031	Carpenters	64	26	9
		47-2061	Construction Laborers	60	24	7
		47-2111	Electricians	72	47	19
		47-2152	Plumbers, Pipefitters, & Steamfitters	73	33	10
		49-1011	First-Line Supervisors of Mechanics, Installers, & Repairers	63	48	29
		49-9071	Maintenance & Repair Workers, General	70	45	19
		51-1011	First-Line Supervisors of Production & Operating Workers	63	37	25
46.0201	Carpentry/Carpenter	47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	66	33	18
		47-2031	Carpenters	64	26	9
		47-3012	Helpers--Carpenters	66	25	6
		47-4011	Construction & Building Inspectors	51	44	42
		51-7011	Cabinetmakers & Bench Carpenters	68	27	12
		51-7031	Model Makers, Wood	63	30	18
		51-7032	Patternmakers, Wood	63	30	18
		51-7041	Sawing Machine Setters, Operators, & Tenders, Wood	62	19	6
		51-7042	Woodworking Machine Setters, Operators, & Tenders, Except Sawing	72	28	4
46.0302	Electrician	47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	66	33	18
		47-2111	Electricians	72	47	19
		47-3013	Helpers--Electricians	66	25	6
		49-1011	First-Line Supervisors of Mechanics, Installers, & Repairers	63	48	29
		49-2098	Security & Fire Alarm Systems Installers	71	42	19
		49-9097	Signal & Track Switch Repairers	71	40	16
46.0502	Pipefitting/Pipefitter & Sprinkler Fitter	47-1011	First-Line Supervisors of Construction Trades	66	33	18



CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
			and Extraction Workers			
		47-2151	Pipelayers	73	32	10
		47-2152	Plumbers, Pipefitters, & Steamfitters	73	33	10
47.0201	Heating, Air Conditioning, Ventilation & Refrigeration Maintenance Technology/Technician	13-1198	Project Management Specialists and Business Operations Specialists, All Other	28	25	52
		47-2151	Pipelayers	73	32	10
		47-2152	Plumbers, Pipefitters, & Steamfitters	73	33	10
		47-2211	Sheet Metal Workers	75	35	12
		47-4011	Construction & Building Inspectors	51	44	42
		47-4098	Miscellaneous Construction & Related Workers	68	34	10
		49-1011	First-Line Supervisors of Mechanics, Installers, & Repairers	63	48	29
		49-2094	Electrical & Electronics Repairers, Commercial & Industrial Equipment	74	48	19
		49-9021	Heating, Air Conditioning, & Refrigeration Mechanics & Installers	73	43	16
		49-9031	Home Appliance Repairers	72	45	14
		49-9071	Maintenance & Repair Workers, General	70	45	19
		49-9098	Helpers--Installation, Maintenance, & Repair Workers	61	26	7
47.0303	Industrial Mechanics & Maintenance Technology	17-3026	Industrial Engineering Technologists and Technicians	59	53	35
		17-3098	Calibration Technologists and Technicians and Engineering Technicians, Except Drafters, All Other	59	53	35
		47-4021	Elevator and Escalator Installers and Repairers	74	39	20
		49-1011	First-Line Supervisors of Mechanics, Installers, & Repairers	63	48	29
		49-2094	Electrical & Electronics Repairers, Commercial & Industrial Equipment	74	48	19

CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
		49-9041	Industrial Machinery Mechanics	70	47	20
		49-9043	Maintenance Workers, Machinery	67	45	22
		49-9044	Millwrights	75	43	17
		49-9045	Refractory Materials Repairers, Except Brickmasons	70	47	20
		49-9071	Maintenance & Repair Workers, General	70	45	19
		49-9081	Wind Turbine Service Technicians	71	40	16
		49-9098	Helpers--Installation, Maintenance, & Repair Workers	61	26	7
		51-4041	Machinists	73	43	17
47.0603	Autobody/Collision & Repair Technology/Technician	13-1032	Insurance Appraisers, Auto Damage	33	32	58
		49-1011	First-Line Supervisors of Mechanics, Installers, & Repairers	63	48	29
		49-2093	Electrical & Electronics Installers & Repairers, Transportation Equipment	74	48	19
		49-2096	Electronic Equipment Installers & Repairers, Motor Vehicles	71	48	19
		49-3021	Automotive Body & Related Repairers	67	36	14
		49-3022	Automotive Glass Installers & Repairers	81	35	4
		49-3023	Automotive Service Technicians & Mechanics	67	43	17
		49-9071	Maintenance & Repair Workers, General	70	45	19
		51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	69	31	9
		53-6051	Transportation Inspectors	75	52	21
47.0604	Automobile/Automotive Mechanics Technology/Technician	17-3027	Mechanical Engineering Technologists and Technicians	59	53	35
		49-1011	First-Line Supervisors of Mechanics, Installers, & Repairers	63	48	29
		49-2093	Electrical & Electronics Installers & Repairers,	74	48	19



CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
			Transportation Equipment			
		49-2096	Electronic Equipment Installers & Repairers, Motor Vehicles	71	48	19
		49-3021	Automotive Body & Related Repairers	67	36	14
		49-3022	Automotive Glass Installers & Repairers	81	35	4
		49-3023	Automotive Service Technicians & Mechanics	67	43	17
		49-9071	Maintenance & Repair Workers, General	70	45	19
		53-6051	Transportation Inspectors	75	52	21
47.0607	Airframe Mechanics & Aircraft Maintenance Technology/Technician	17-3021	Aerospace Engineering and Operations Technologists and Technicians	59	53	35
		49-3011	Aircraft Mechanics & Service Technicians	76	58	21
		51-2011	Aircraft Structure, Surfaces, Rigging, & Systems Assemblers	74	34	10
		53-6051	Transportation Inspectors	75	52	21
47.0608	Aircraft Powerplant Technology/Technician	49-3011	Aircraft Mechanics & Service Technicians	76	58	21
		51-2011	Aircraft Structure, Surfaces, Rigging, & Systems Assemblers	74	34	10
47.0613	Medium/Heavy Vehicle & Truck Technology/Technician	49-3023	Automotive Service Technicians & Mechanics	67	43	17
		49-3031	Bus & Truck Mechanics & Diesel Engine Specialists	69	46	19
47.9999	Mechanic & Repair Technologies/Technicians, Other	49-1011	First-Line Supervisors of Mechanics, Installers, & Repairers	63	48	29
		49-2011	Computer, Automated Teller, & Office Machine Repairers	59	55	36
		49-2021	Radio, Cellular, & Tower Equipment Installers & Repairs	70	50	24
		49-2092	Electric Motor, Power Tool, & Related Repairers	73	50	19
		49-2094	Electrical & Electronics Repairers, Commercial	74	48	19



CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
			& Industrial Equipment			
		49-2095	Electrical & Electronics Repairers, Powerhouse, Substation, & Relay	74	48	19
		49-2097	Audiovisual Equipment Installers and Repairers	72	49	18
		49-9031	Home Appliance Repairers	72	45	14
		49-9061	Camera & Photographic Equipment Repairers	55	49	37
		49-9071	Maintenance & Repair Workers, General	70	45	19
		49-9097	Signal & Track Switch Repairers	71	40	16
		49-9099	Installation, Maintenance, and Repair Workers, All Other	71	40	16
		51-2021	Coil Winders, Tapers, & Finishers	69	39	15
48.0303	Upholstery/Upholsterer	51-6093	Upholsterers	62	36	12
48.0508	Welding Technology/Welder	47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	66	33	18
		47-2152	Plumbers, Pipefitters, & Steamfitters	73	33	10
		47-2171	Reinforcing Iron & Rebar Workers	59	19	6
		47-2211	Sheet Metal Workers	75	35	12
		47-2221	Structural Iron & Steel Workers	74	37	11
		49-9071	Maintenance & Repair Workers, General	70	45	19
		51-4121	Welders, Cutters, Solderers, & Brazers	71	38	12
		51-4122	Welding, Soldering, & Brazing Machine Setters, Operators, & Tenders	71	38	12
49.0101	Aeronautics/Aviation/Aerospace Science & Technology, General	11-3071	Transportation, Storage, & Distribution Managers	58	40	32
		33-9093	Transportation Security Screeners	56	49	39
		43-4181	Reservation & Transportation Ticket Agents & Travel Clerks	62	46	33



CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
		53-2011	Airline Pilots, Copilots, & Flight Engineers	18	19	70
		53-2022	Airfield Operations Specialists	49	50	46
		53-2031	Flight Attendants	43	42	51
		53-6051	Transportation Inspectors	75	52	21
50.0102	Digital Arts	15-1257	Web Developers and Digital Interface Designers	25	27	64
		15-1299	Computer Occupations, All Other	39	41	50
		27-1011	Art Directors	33	27	57
		27-1013	Fine Artists, Including Painters, Sculptors, & Illustrators	33	27	57
		27-1014	Special Effects Artists and Animators	33	27	57
		27-1019	Artists & Related Workers, All Other	33	27	57
		27-1021	Commercial & Industrial Designers	25	26	65
		27-1024	Graphic Designers	22	25	67
		27-4021	Photographers	46	40	48
		43-9031	Desktop Publishers	44	38	46
50.0402	Commercial & Advertising Art	11-2011	Advertising & Promotions Managers	12	13	78
		27-1011	Art Directors	33	27	57
		27-1013	Fine Artists, Including Painters, Sculptors, & Illustrators	33	27	57
		27-1014	Special Effects Artists and Animators	33	27	57
		27-1019	Artists & Related Workers, All Other	33	27	57
		27-1021	Commercial & Industrial Designers	25	26	65
		27-1024	Graphic Designers	22	25	67
		27-1027	Set & Exhibit Designers	23	25	65
		27-4021	Photographers	46	40	48
		41-3011	Advertising Sales Agents	27	23	63
		43-9031	Desktop Publishers	44	38	46
50.0602	Cinematography & Film/Video Production	27-2012	Producers & Directors	19	18	69

CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
		27-4031	Camera Operators, Television, Video, and Film	32	30	60
		27-4032	Film & Video Editors	32	30	60
		39-3021	Motion Picture Projectionists	76	46	16
50.0710	Printmaking	25-3021	Self-Enrichment Teachers	51	42	37
		27-1012	Craft Artists	33	27	57
		27-1013	Fine Artists, Including Painters, Sculptors, & Illustrators	33	27	57
51.0707	Health Information/Medical Records Technology/Technician	15-1211	Computer Systems Analysts	13	14	63
		15-1232	Computer User Support Specialists	43	45	49
		15-1231	Computer Network Support Specialists	43	45	49
		29-2098	Medical Dosimetrists, Medical Records Specialists, and Health Technologists and Technicians, All Other	52	54	42
		43-6013	Medical Secretaries and Administrative Assistants	55	49	39
		43-9021	Data Entry Keyers	60	48	34
51.0801	Medical/Clinical Assistant	31-9092	Medical Assistants	65	67	32
51.0805	Pharmacy Technician/Assistant	29-2052	Pharmacy Technicians	57	58	39
		31-9095	Pharmacy Aides	63	53	28
51.0808	Veterinary/Animal Health Technology/Technician & Veterinary Assistant	29-2056	Veterinary Technologists & Technicians	53	59	43
		31-9096	Veterinary Assistants & Laboratory Animal Caretakers	58	51	36
51.0904	Emergency Medical Technology/Technician (EMT Paramedic)	29-2041	Emergency Medical Technicians & Paramedics	60	67	37
		33-1021	First-Line Supervisors of Fire Fighting & Prevention Workers	64	61	31
		33-2011	Firefighters	58	63	39
		33-9092	Lifeguards, Ski Patrol, & Other Recreational Protective Service Workers	80	38	10
		53-3011	Ambulance Drivers & Attendants, Except	78	49	14



CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
			Emergency Medical Technicians			
51.0909	Surgical Technology/Technologist	29-2055	Surgical Technologists	53	62	43
		29-2098	Medical Dosimetrists, Medical Records Specialists, and Health Technologists and Technicians, All Other	52	54	42
		31-9093	Medical Equipment Preparers	69	45	20
51.0910	Diagnostic Medical Sonography/Sonographer & Ultrasound Technician	29-2032	Diagnostic Medical Sonographers	21	55	73
		29-2098	Medical Dosimetrists, Medical Records Specialists, and Health Technologists and Technicians, All Other	52	54	42
51.1009	Phlebotomy Technician/Phlebotomist	29-2018	Clinical Laboratory Technologists & Technicians	37	43	56
		31-9097	Phlebotomists	71	68	27
51.3801	Registered Nursing/Registered Nurse	11-9111	Medical & Health Services Managers	26	30	50
		29-1141	Registered Nurses	5	30	87
		29-1151	Nurse Anesthetists	1	1	13
		29-1161	Nurse Midwives	1	0	7
		29-1171	Nurse Practitioners	1	0	7
51.3901	Licensed Practical/Vocational Nurse Training	29-2061	Licensed Practical & Licensed Vocational Nurses	78	73	20
		31-1131	Nursing Assistants	72	55	17
51.3902	Nursing Assistant/Aide & Patient Care Assistant/Aide	31-1128	Home Health and Personal Care Aides	69	48	17
		31-1133	Psychiatric Aides	69	55	20
		31-1131	Nursing Assistants	72	55	17
		31-1132	Orderlies	69	55	20
52.0101	Business/Commerce, General	11-2022	Sales Managers	21	21	64
		11-3011	Administrative Services Managers	41	35	48
		11-3051	Industrial Production Managers	38	28	48
		11-3071	Transportation, Storage, & Distribution Managers	58	40	32





CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
		11-9021	Construction Managers	41	28	48
		11-9151	Social & Community Service Managers	19	17	55
		11-9198	Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	32	26	49
		11-1011	Chief Executives	23	22	55
		11-1021	General & Operations Managers	43	37	46
		13-1051	Cost Estimators	42	38	49
		13-1111	Management Analysts	15	14	56
		13-1121	Meeting, Convention, & Event Planners	29	27	60
		13-1198	Project Management Specialists and Business Operations Specialists, All Other	28	25	52
		15-1299	Computer Occupations, All Other	39	41	50
52.0212	Retail Management	11-1021	General & Operations Managers	43	37	46
		13-1028	Buyers & Purchasing Agents	39	31	52
		13-1198	Project Management Specialists and Business Operations Specialists, All Other	28	25	52
		33-9098	School Bus Monitors and Protective Service Workers, All Other	80	38	10
		41-1011	First-Line Supervisors of Retail Sales Workers	61	45	31
		53-7065	Stockers and Order Fillers	75	40	12
52.0302	Accounting Technology/Technician & Bookkeeping	13-2011	Accountants & Auditors	9	12	66
		13-2082	Tax Preparers	38	32	42
		43-3031	Bookkeeping, Accounting, & Auditing Clerks	62	50	32
		43-3051	Payroll & Timekeeping Clerks	54	48	42
		43-4011	Brokerage Clerks	49	44	41
		43-9111	Statistical Assistants	50	40	36



CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
52.0401	Administrative Assistant & Secretarial Science, General	43-4071	File Clerks	67	50	27
		43-4171	Receptionists & Information Clerks	71	53	24
		43-6011	Executive Secretaries & Executive Administrative Assistants	51	44	43
		43-6014	Secretaries & Administrative Assistants, Except Legal, Medical, & Executive	55	47	39
		43-9021	Data Entry Keyers	60	48	34
		43-9022	Word Processors & Typists	57	48	37
		43-9061	Office Clerks, General	65	51	29
52.0411	Customer Service Support/Call Center/Teleservice Operation	43-1011	First-Line Supervisors of Office & Administrative Support Workers	49	41	43
		43-2021	Telephone Operators	73	55	19
		43-4051	Customer Service Representatives	67	46	26
		43-4151	Order Clerks	65	43	24
		43-4171	Receptionists & Information Clerks	71	53	24
52.2001	Construction Management	11-9021	Construction Managers	41	28	48
		13-1051	Cost Estimators	42	38	49
		47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	66	33	18
		47-4011	Construction & Building Inspectors	51	44	42
11.1001	Network & System Administration/Administrator	11-3021	Computer & Information Systems Managers	19	21	60
		15-1212	Information Security Analysts	22	26	60
		15-1244	Network and Computer Systems Administrators	30	36	58
		15-1241	Computer Network Architects	23	32	60
		15-1231	Computer Network Support Specialists	43	45	49
		15-1299	Computer Occupations, All Other	39	41	50



CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
		49-2022	Telecommunications Equipment Installers & Repairers, Except Line Installers	70	50	24
46.0301	Electrical & Power Transmission Installation/Installer, General	47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	66	33	18
		47-2111	Electricians	72	47	19
		47-3013	Helpers--Electricians	66	25	6
		49-1011	First-Line Supervisors of Mechanics, Installers, & Repairers	63	48	29
		49-2022	Telecommunications Equipment Installers & Repairers, Except Line Installers	70	50	24
		49-2094	Electrical & Electronics Repairers, Commercial & Industrial Equipment	74	48	19
		49-2095	Electrical & Electronics Repairers, Powerhouse, Substation, & Relay	74	48	19
		49-2098	Security & Fire Alarm Systems Installers	71	42	19
		49-9051	Electrical Power-Line Installers & Repairers	73	52	22
		49-9052	Telecommunications Line Installers & Repairers	76	48	17
		49-9097	Signal & Track Switch Repairers	71	40	16
46.0401	Building/Property Maintenance	37-1011	First-Line Supervisors of Housekeeping & Janitorial Workers	63	38	22
		37-1012	First-Line Supervisors of Landscaping, Lawn Service, & Groundskeeping Workers	55	34	25
		37-2011	Janitors & Cleaners, Except Maids & Housekeeping Cleaners	68	32	9
		37-2012	Maids & Housekeeping Cleaners	58	25	7
		37-3011	Landscaping & Groundskeeping Workers	57	26	9
		47-1011	First-Line Supervisors of Construction Trades	66	33	18



CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
			and Extraction Workers			
		47-2141	Painters, Construction & Maintenance	59	22	7
		49-1011	First-Line Supervisors of Mechanics, Installers, & Repairers	63	48	29
		49-9071	Maintenance & Repair Workers, General	70	45	19
47.0605	Diesel Mechanics Technology/Technician	49-3023	Automotive Service Technicians & Mechanics	67	43	17
		49-3031	Bus & Truck Mechanics & Diesel Engine Specialists	69	46	19
		49-9098	Helpers--Installation, Maintenance, & Repair Workers	61	26	7
		53-6051	Transportation Inspectors	75	52	21
48.0501	Machine Tool Technology/Machinist	49-9041	Industrial Machinery Mechanics	70	47	20
		49-9043	Maintenance Workers, Machinery	67	45	22
		49-9044	Millwrights	75	43	17
		51-9161	Computer Numerically Controlled Tool Operators	73	48	18
		51-4021	Extruding & Drawing Machine Setters, Operators, & Tenders, Metal & Plastic	82	33	6
		51-4022	Forging Machine Setters, Operators, & Tenders, Metal & Plastic	72	33	6
		51-4023	Rolling Machine Setters, Operators, & Tenders, Metal & Plastic	82	33	6
		51-4031	Cutting, Punching, & Press Machine Setters, Operators, & Tenders, Metal & Plastic	74	30	7
		51-4032	Drilling & Boring Machine Tool Setters, Operators, & Tenders, Metal & Plastic	72	26	7
		51-4033	Grinding, Lapping, Polishing, & Buffing Machine Tool Setters, Operators, & Tenders, Metal & Plastic	72	29	7



CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
		51-4034	Lathe & Turning Machine Tool Setters, Operators, & Tenders, Metal & Plastic	72	26	7
		51-4035	Milling & Planing Machine Setters, Operators, & Tenders, Metal & Plastic	72	26	7
		51-4041	Machinists	73	43	17
		51-4081	Multiple Machine Tool Setters, Operators, & Tenders, Metal & Plastic	73	34	9
		51-4191	Heat Treating Equipment Setters, Operators, & Tenders, Metal & Plastic	73	34	9
		51-4192	Layout Workers, Metal & Plastic	73	34	9
		51-4199	Metal Workers & Plastic Workers, All Other	73	34	9
49.0399	Marine Transportation, Other	45-3031	Fishing and Hunting Workers	64	26	12
		49-9092	Commercial Divers	71	40	16
		53-5011	Sailors & Marine Oilers	74	40	14
		53-5021	Captains, Mates, & Pilots of Water Vessels	61	38	27
		53-5022	Motorboat Operators	61	38	27
		53-5031	Ship Engineers	74	40	14
51.2601	Health Aide	31-1128	Home Health and Personal Care Aides	69	48	17
		31-1133	Psychiatric Aides	69	55	20
		31-1131	Nursing Assistants	72	55	17
		31-1132	Orderlies	69	55	20
49.0199	Air transportation, other	11-3071	Transportation, Storage, & Distribution Managers	58	40	32
		33-9093	Transportation Security Screeners	56	49	39
		43-4181	Reservation & Transportation Ticket Agents & Travel Clerks	62	46	33
		53-2011	Airline Pilots, Copilots, & Flight Engineers	18	19	70
		53-2022	Airfield Operations Specialists	49	50	46

CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
		53-2031	Flight Attendants	43	42	51
		53-6051	Transportation Inspectors	75	52	21

Source: Emsi program demand gap model.



## APPENDIX 5: Methodology

This appendix focuses on describing and understanding the methodology used in the program demand gap analysis. This requires data on both occupation demand (e.g., annual job openings) and education supply (e.g., number of postsecondary degree completions). These are then compared through an education “gap” analysis to determine whether an education program is potentially producing a surplus or shortage of workforce talent relative to the number of job openings. In this way, it is possible to see how the institution’s current programs are satisfying the region’s workforce needs.

### SUPPLY AND DEMAND MODEL

Emsi builds a model using demand-side data (average annual projected job openings) and supply-side data (postsecondary education output) to compare workforce demand with education supply. The purpose of this analysis is to find the difference or “gap” between the annual job openings for an occupation and the number of people completing postsecondary degrees for that occupation, whether at the colleges or at another postsecondary institution in the region, making it possible to identify talent shortages or surpluses.

The first step involves the link between annual job openings for a SOC code and the number of completions for an education program, defined by its CIP code. The BLS provides information on the occupations that completers of specific CIP codes are more likely to enter. Specific connections have been refined through previous engagements with postsecondary institutions and state departments of labor. Some programs have direct occupational ties. For example, a physical therapist assistant is a specific occupation that requires specialized postsecondary training. In this case, one CIP code (Physical Therapy Technician/Assistant) maps to only one SOC code (physical therapist assistants). This provides an easy comparison of annual job openings for physical therapist assistants to the number of people completing the relevant program to see whether a talent shortage or surplus exists.

Unfortunately, this one-to-one mapping of a CIP code to a SOC code is not always the case. More often than not, an educational program maps to multiple occupations and an occupation maps to multiple educational programs at multiple award levels. For this reason, Emsi has pioneered a method of de-duplicating job openings, such that the potential sources of demand are not double-represented for any occupation. The details of this process are outlined in this chapter, under “De-duplication of Annual Openings.”

## OCCUPATION DEMAND

### *Educational Level Adjustments*

To capture occupation demand, Emsi uses a proprietary employment dataset that reflects total employment. Emsi uses the QCEW data source, which measures employment covered by unemployment insurance (UI). According to the BLS, “employment covered by these UI programs represents about 97% of all wage and salary civilian employment in the country.” Through a proprietary process, Emsi removes BLS local area employment suppressions to yield the best employment data available at local levels, using Emsi’s Employees & Self-Employed 2020.4 datarun.

In the datarun, Emsi calculates the number of regional job openings for the occupations that require different levels of education for entry-level positions.<sup>19</sup> The BLS also provides educational attainment data of current workers, ages 16 years to 34 years, for each SOC code, broken out by their highest level of education attained. The data are presented as the percentage of workers in the SOC code with educational attainment ranging from less than a high school diploma to a doctoral degree level of education. Using these data, Emsi adjusts the annual job opening estimates for each SOC code to only incorporate the percentage of workers that correspond with the colleges’ program offerings.

For example, as shown in Table A5.1, three occupations are mapped to Accounting: accountants, auditors, and budget analysts. Among accountants, the majority of job openings (80%) are available to program completers with a master’s degree or bachelor’s degree level of education, less so for auditors. The weighted average of job openings, in the last row of the table, is calculated for each program and at each award level where the colleges has produced completions over the past three years. Not accounting for these dynamics in educational attainments would bias the programs’ demands by over-counting potential job opportunities for the completers.<sup>20</sup>

Table A5.1: Example of Educational Level Adjustments for a Program

<b>PROGRAM</b>	<b>OCCUPATION</b>	<b>ASSOC AND ONE LEVEL BELOW</b>	<b>BACH AND ONE LEVEL BELOW</b>	<b>MAST AND ONE LEVEL BELOW</b>	<b>PHD AND ONE LEVEL BELOW</b>
Accounting	Accountant	10%	65%	80%	25%
	Auditor	5%	70%	75%	20%

19 See Appendix 1 for a description of the sources and processes of Emsi data.

20 Given the changing dynamics and need for more education in the existing workforce (i.e., skills-biased technology change in many occupations and industry sectors), this assumption is considered conservative.





Budget analyst	15%	70%	80%	30%
<b>Weighted average</b>	<b>10%</b>	<b>68%</b>	<b>78%</b>	<b>25%</b>

### ***De-Duplication of Annual Openings***

Most programs are designed to train people for multiple occupational types, many of which are simultaneously linked with other educational programs. This presents a complexity when comparing supply and demand for any one program. For instance, the Accounting program is mapped to three different occupations: accountants, auditors, and budget analysts. If we focus on one of the occupations for this list—accountants—it is also mapped to three different educational programs, for example, Business, Medical Office Administration, and Commerce.

To ensure that double-counting does not occur, it is necessary to either realign the program groupings to eliminate the mapping of occupations to multiple programs or to determine what proportion of job openings should be compared with program completions. Emsi takes the second approach in this analysis, which has the advantage of maintaining program titles and descriptions in roughly the same format of the completion data originally delivered to Emsi. Emsi also uses a formula that favors programs with the largest completions, attributing a greater proportion of job openings to programs with a large number of completions by award level. This method utilizes the assumption that the higher output programs are likely feeding a higher degree of demand in the RMLA Region 2.<sup>21</sup> Appendix 4 contains the detailed mapping of each CIP code to all relevant occupations, by their six-digit SOC codes. A result of de-duplication is that in a region where a unique program, Commercial & Advertising Art for example, is larger than Graphic Design, it is assumed that completers of the Commercial & Advertising Art program will be offered a proportional, therefore larger number of job openings than students from the Graphic Design program.

Emsi also provides an alternative program demand gap analysis, which does not de-duplicate the average number of projected annual job openings based on the size of each program. Rather, the total number of job openings available for completers at each award level for each program is provided without further modification. Due to this modification, these numbers have not been de-duplicated, unlike the job openings shown in Chapter 3. As a result, job openings overstate the occupational demand for all postsecondary program

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21 Note this adjustment is performed on a program-by-program basis without consideration of individual colleges or training providers. Therefore, a single program offered at one large institution has no advantage over a group of similar programs offered at several smaller educational providers given that the aggregate output of the smaller schools is near the output of the single larger school.

completers. While these figures have not been provided in this analysis, they are available upon request.

## EDUCATION OUTPUT

There are several educational institutions in the RMLA Region 2, some of which have programs similar to those offered at the colleges. Hence, completers at the colleges will be competing for some jobs with completers from other regional institutions. Emsi determined education output by CIP codes and identified the number of completers for every award level within those CIP codes. To find the output for all public and private educational institutions in the RMLA Region 2, Emsi uses data from the Integrated Postsecondary Educational System (IPEDS).<sup>22</sup> These data are publicly available through the National Center for Educational Statistics. Completions data are averaged for a three-year period, 2017 through 2019, to smooth out any bumps in enrollment that may be unique to a particular academic year. Data gathered for the colleges from IPEDS were reviewed for accuracy by the colleges and updated with 2020 completions data.

The following tables display the completion breakdown by institution in the RMLA Region 2 at the award levels offered by the colleges. The colleges only a few of many institutions in the region. Using a three-year average, the colleges grant 2,847 certificates, 557 associate, and 60 transfer-track degrees every year.

Table A5.2: Certificate Level Completions in the RMLA Region 2 by Postsecondary Institution

<b>INSTITUTION</b>	<b>3-YEAR AVERAGE</b>	<b>% TOTAL</b>
BRCC, NTCC, RPCC	2,847	68.8%
Diesel Driving Academy-Baton Rouge	173	4.2%
Medical Training College	151	3.6%
Virginia College-Baton Rouge	148	3.6%
Delta College of Arts & Technology	127	3.1%
Fortis College-Baton Rouge	122	3.0%
Compass Career College	109	2.6%

22 These data come with inherent weaknesses. Primarily, numbers are only available for institutions that participate in or are applicants for any federal financial assistance program authorized by the Higher Education Act (HEA). Also, IPEDS does not collect data on non-credit courses and programs. Nevertheless, this system is the best source for collecting information on a broad range of educational institutions.



<b>INSTITUTION</b>	<b>3-YEAR AVERAGE</b>	<b>% TOTAL</b>
Aveda Arts & Sciences Institute-Baton Rouge	71	1.7%
Vanguard College of Cosmetology-Baton Rouge	63	1.5%
Moore Career College	63	1.5%
Camelot College	49	1.2%
Unitech Training Academy-Baton Rouge	45	1.1%
ITI Technical College	43	1.0%
Denham Springs Beauty School	40	1.0%
D'Jay's Institute of Cosmetology and Esthiology	35	0.8%
Baton Rouge School of Computers	30	0.7%
Franciscan Missionaries of Our Lady University	17	0.4%
Ray J's College of Hair	7	0.2%
<b>Total</b>	<b>4,140</b>	<b>100%</b>

Source: IPEDS.

Table A5.3: Associate Degree Level Completions in the RMLA Region 2 by Postsecondary Institution

<b>INSTITUTION</b>	<b>3-YEAR AVERAGE</b>	<b>% TOTAL</b>
BRCC, NTCC, RPCC	557	53.0%
ITI Technical College	229	21.8%
Louisiana Culinary Institute	59	5.6%
Franciscan Missionaries of Our Lady University	51	4.8%
Baton Rouge General Medical Center-School of Nursing	43	4.1%
Virginia College-Baton Rouge	36	3.5%
Fortis College-Baton Rouge	27	2.6%
Remington College-Baton Rouge Campus	19	1.8%
Baton Rouge School of Computers	16	1.5%
Southeastern Louisiana University	11	1.0%
Delta College of Arts & Technology	4	0.3%
<b>Total</b>	<b>1,051</b>	<b>100%</b>

Source: IPEDS.



Table A5.4: Bachelor’s Degree Level Completions in the RMLA Region 2 by Postsecondary Institution

<b>INSTITUTION</b>	<b>3-YEAR AVERAGE</b>	<b>% TOTAL</b>
Louisiana State University and Agricultural & Mechanical College	5,001	63.9%
Southeastern Louisiana University	1,775	22.7%
Southern University and A & M College	734	9.4%
Franciscan Missionaries of Our Lady University	222	2.8%
BRCC, NTCC, RPCC	60	0.8%
University of Phoenix-Louisiana	36	0.5%
<b>Total</b>	<b>7,828</b>	<b>100%</b>

Source: IPEDS.



## APPENDIX 6: Employment Projections

Table A6.1: Employment Projections in the RMLA Region 2 by Occupation, 2020 and 2030

SOC TITLE	2020 JOBS	2030 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Cashiers	12,451	12,841	390	3.1%	2,437	\$9.39
Retail Salespersons	13,087	12,765	(322)	(2.5%)	1,941	\$10.76
Home Health & Personal Care Aides	9,615	11,921	2,306	24.0%	1,915	\$9.21
Fast Food & Counter Workers	7,301	9,040	1,739	23.8%	1,783	\$8.93
Laborers & Freight, Stock, & Material Movers, Hand	11,139	11,641	502	4.5%	1,650	\$12.99
Waiters & Waitresses	7,526	8,220	693	9.2%	1,583	\$8.93
Food Preparation Workers	7,591	8,201	610	8.0%	1,430	\$9.03
Office Clerks, General	10,396	10,558	162	1.6%	1,299	\$12.05
Janitors & Cleaners, Except Maids & Housekeeping Cleaners	7,923	8,927	1,005	12.7%	1,215	\$10.13
Construction Laborers	7,501	7,719	218	2.9%	933	\$16.24
Customer Service Representatives	6,024	6,333	309	5.1%	866	\$15.10
Secretaries & Administrative Assistants, Except Legal, Medical, & Executive	7,285	7,076	(209)	(2.9%)	817	\$15.48
Stockers & Order Fillers	5,315	5,547	232	4.4%	749	\$11.39
General & Operations Managers	6,768	7,429	661	9.8%	686	\$43.28
Carpenters	6,107	6,202	96	1.6%	665	\$21.82
Childcare Workers	4,161	4,315	153	3.7%	655	\$9.29
Bookkeeping, Accounting, & Auditing Clerks	5,325	5,337	12	0.2%	640	\$18.54
Maintenance & Repair Workers, General	5,754	6,186	432	7.5%	625	\$18.80
Security Guards	4,694	4,603	(92)	(2.0%)	623	\$12.83
Heavy & Tractor-Trailer Truck Drivers	4,884	5,166	282	5.8%	620	\$19.68
First-Line Supervisors of Construction Trades & Extraction Workers	5,298	5,335	37	0.7%	596	\$28.77
First-Line Supervisors of Food Preparation & Serving Workers	3,274	3,724	449	13.7%	582	\$14.80
Educational Instruction & Library Workers, All Other	5,942	6,091	149	2.5%	580	\$10.20
Project Management Specialists & Business Operations Specialists, All Other	5,245	5,525	280	5.3%	547	\$25.85
Maids & Housekeeping Cleaners	3,613	3,923	309	8.6%	543	\$9.83
Nursing Assistants	4,229	4,648	420	9.9%	541	\$11.38



<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>CHANGE</b>	<b>% CHANGE</b>	<b>ANNUAL JOB OPENINGS</b>	<b>MEDIAN HOURLY WAGE</b>
First-Line Supervisors of Office & Administrative Support Workers	4,877	4,955	78	1.6%	532	\$23.23
First-Line Supervisors of Retail Sales Workers	4,539	4,636	97	2.1%	528	\$17.28
Registered Nurses	7,256	8,360	1,103	15.2%	524	\$29.93
Electricians	4,155	4,307	152	3.7%	511	\$24.36
Light Truck Drivers	3,522	4,152	630	17.9%	508	\$14.75
Landscaping & Groundskeeping Workers	3,501	3,690	189	5.4%	497	\$13.38
Receptionists & Information Clerks	3,308	3,612	303	9.2%	495	\$12.88
Teaching Assistants, Except Postsecondary	4,244	4,525	281	6.6%	491	\$9.50
Sales Representatives, Wholesale & Manufacturing, Except Technical & Scientific Products	4,101	4,359	258	6.3%	477	\$26.15
Cooks, Restaurant	2,550	3,186	636	24.9%	467	\$11.87
Plumbers, Pipefitters, & Steamfitters	3,867	3,813	(54)	(1.4%)	454	\$27.46
Elementary School Teachers, Except Special Education	5,234	5,614	380	7.3%	446	\$23.35
Bartenders	2,013	2,249	236	11.7%	400	\$9.11
Postsecondary Teachers, General	4,239	4,418	179	4.2%	393	\$32.71
Welders, Cutters, Solderers, & Brazers	3,232	3,252	20	0.6%	380	\$31.54
Executive Secretaries & Executive Administrative Assistants	3,446	2,880	(567)	(16.4%)	355	\$19.07
Hosts & Hostesses, Restaurant, Lounge, & Coffee Shop	1,401	1,560	160	11.4%	355	\$9.43
Personal Service Managers, All Other; Entertainment & Recreation Managers, Except Gambling; & Managers, All Other	4,124	4,395	271	6.6%	352	\$37.58
Accountants & Auditors	3,319	3,602	283	8.5%	352	\$28.00
Licensed Practical & Licensed Vocational Nurses	3,837	4,144	307	8.0%	336	\$19.22
Operating Engineers & Other Construction Equipment Operators	2,602	2,617	15	0.6%	336	\$23.35
Sales Representatives of Services, Except Advertising, Insurance, Financial Services, & Travel	2,222	2,498	275	12.4%	328	\$18.74
Insurance Sales Agents	2,681	2,995	313	11.7%	310	\$18.77
Hairdressers, Hairstylists, & Cosmetologists	2,163	2,320	157	7.2%	298	\$10.83
Secondary School Teachers, Except Special & Career/Technical Education	3,538	3,824	286	8.1%	291	\$26.01
Cooks, Fast Food	2,008	1,959	(49)	(2.4%)	284	\$8.69
Medical Assistants	1,917	2,369	451	23.5%	281	\$15.12



<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>CHANGE</b>	<b>% CHANGE</b>	<b>ANNUAL JOB OPENINGS</b>	<b>MEDIAN HOURLY WAGE</b>
Driver/Sales Workers	2,376	2,365	(11)	(0.5%)	278	\$14.88
First-Line Supervisors of Production & Operating Workers	2,404	2,525	121	5.0%	271	\$39.88
Inspectors, Testers, Sorters, Samplers, & Weighers	2,006	1,877	(129)	(6.4%)	248	\$26.39
Correctional Officers & Jailers	2,803	2,638	(164)	(5.9%)	239	\$16.86
Helpers, Construction Trades, All Other	1,626	1,555	(71)	(4.4%)	228	\$16.27
Painters, Construction & Maintenance	2,202	2,097	(105)	(4.8%)	224	\$19.76
First-Line Supervisors of Mechanics, Installers, & Repairers	2,228	2,325	98	4.4%	223	\$31.57
First-Line Supervisors of Transportation & Material Moving Workers, Except Aircraft Cargo Handling Supervisors	1,813	1,953	140	7.7%	217	\$26.77
Cleaners of Vehicles & Equipment	1,323	1,445	122	9.2%	216	\$10.55
Production Workers, All Other	1,784	1,791	7	0.4%	214	\$17.21
Automotive Service Technicians & Mechanics	2,088	2,091	2	0.1%	212	\$18.65
Police & Sheriff's Patrol Officers	2,662	2,841	179	6.7%	211	\$20.64
Industrial Truck & Tractor Operators	1,702	1,776	74	4.3%	207	\$19.08
Dishwashers	1,179	1,279	100	8.5%	206	\$9.44
Farmworkers & Laborers, Crop, Nursery, & Greenhouse	1,117	1,196	79	7.1%	201	\$11.09
Military occupations	1,816	1,620	(196)	(10.8%)	195	\$16.25
Miscellaneous Construction & Related Workers	1,413	1,474	61	4.3%	193	\$22.11
Passenger Vehicle Drivers, Except Bus Drivers, Transit & Intercity	1,288	1,467	179	13.9%	191	\$11.98
Insulation Workers, Mechanical	1,386	1,504	118	8.5%	188	\$21.44
Cooks, Short Order	1,233	1,250	17	1.4%	179	\$10.05
Recreation Workers	946	1,050	105	11.1%	177	\$9.96
Food Servers, Nonrestaurant	1,005	1,109	104	10.3%	176	\$9.44
Shipping, Receiving, & Inventory Clerks	1,652	1,704	52	3.1%	175	\$15.76
Educational, Guidance, & Career Counselors & Advisors	1,576	1,664	88	5.6%	175	\$26.93
Dining Room & Cafeteria Attendants & Bartender Helpers	868	1,002	134	15.4%	173	\$9.04
Middle School Teachers, Except Special & Career/Technical Education	1,949	2,111	161	8.3%	169	\$24.18
Petroleum Pump System Operators, Refinery Operators, & Gaugers	1,334	1,404	70	5.2%	167	\$38.30
Chemical Plant & System Operators	1,441	1,394	(47)	(3.3%)	166	\$34.31
Computer User Support Specialists	1,657	1,864	207	12.5%	165	\$21.72



<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>CHANGE</b>	<b>% CHANGE</b>	<b>ANNUAL JOB OPENINGS</b>	<b>MEDIAN HOURLY WAGE</b>
Cooks, Institution & Cafeteria	1,033	1,132	99	9.6%	163	\$10.32
Industrial Machinery Mechanics	1,471	1,604	133	9.0%	160	\$30.40
Helpers--Electricians	1,188	1,164	(25)	(2.1%)	160	\$14.66
Tutors & Teachers & Instructors, All Other	1,226	1,344	118	9.6%	159	\$21.60
Tellers	1,428	1,169	(259)	(18.1%)	157	\$13.90
Financial Managers	1,564	1,814	250	16.0%	155	\$45.19
Dental Assistants	1,120	1,288	168	15.0%	152	\$15.41
Chemical Equipment Operators & Tenders	1,173	1,193	21	1.8%	148	\$34.63
Amusement & Recreation Attendants	525	649	124	23.6%	148	\$9.40
Exercise Trainers & Group Fitness Instructors	774	870	95	12.3%	146	\$16.79
Billing & Posting Clerks	1,040	1,233	193	18.6%	143	\$16.69
Human Resources Specialists	1,185	1,281	96	8.1%	134	\$25.16
Parts Salespersons	1,063	1,062	(1)	(0.1%)	134	\$13.78
Laundry & Dry-Cleaning Workers	974	981	7	0.7%	132	\$9.96
Real Estate Sales Agents	1,222	1,313	91	7.4%	130	\$16.59
Self-Enrichment Teachers	923	1,077	154	16.7%	130	\$21.85
Management Analysts	1,115	1,280	166	14.9%	129	\$36.92
Construction Managers	1,595	1,655	60	3.8%	128	\$36.81
Paralegals & Legal Assistants	976	1,133	157	16.1%	128	\$20.86
Counter & Rental Clerks	784	945	161	20.5%	128	\$11.49
Lawyers	2,154	2,269	115	5.3%	126	\$38.96
Firefighters	1,607	1,726	119	7.4%	126	\$13.09
Clergy	978	1,109	131	13.4%	126	\$26.88
Helpers--Production Workers	791	825	34	4.3%	123	\$15.14
Lifeguards, Ski Patrol, & Other Recreational Protective Service Workers	483	514	31	6.4%	123	\$9.12
Heating, Air Conditioning, & Refrigeration Mechanics & Installers	1,099	1,185	86	7.8%	122	\$21.70
Medical & Health Services Managers	1,140	1,364	224	19.6%	121	\$44.83
Office & Administrative Support Workers, All Other	911	1,006	95	10.4%	121	\$18.01
Engineers, All Other	1,594	1,661	68	4.2%	120	\$39.49
Education Administrators, Kindergarten through Secondary	1,324	1,426	102	7.7%	119	\$34.33





<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>CHANGE</b>	<b>% CHANGE</b>	<b>ANNUAL JOB OPENINGS</b>	<b>MEDIAN HOURLY WAGE</b>
Pharmacy Technicians	1,204	1,349	145	12.1%	118	\$16.19
Installation, Maintenance, & Repair Workers, All Other	980	1,030	50	5.1%	118	\$22.40
Market Research Analysts & Marketing Specialists	790	1,021	231	29.2%	116	\$26.82
Machinists	975	1,053	77	7.9%	113	\$25.34
Substance Abuse, Behavioral Disorder, & Mental Health Counselors	779	990	210	27.0%	111	\$19.98
Insulation Workers, Floor, Ceiling, & Wall	942	826	(116)	(12.3%)	108	\$21.61
Administrative Services Managers	1,120	1,216	96	8.6%	107	\$29.77
Instructional Coordinators	1,080	1,117	37	3.4%	107	\$23.77
Library Technicians	680	678	(2)	(0.3%)	106	\$17.72
Hotel, Motel, & Resort Desk Clerks	629	596	(33)	(5.3%)	105	\$10.62
Coaches & Scouts	598	691	93	15.5%	104	\$20.67
Medical Dosimetrists, Medical Records Specialists, & Health Technologists & Technicians, All Other	1,090	1,283	193	17.7%	102	\$15.76
Preschool Teachers, Except Special Education	920	980	60	6.5%	102	\$13.40
Compliance Officers	1,049	1,105	56	5.4%	101	\$25.41
Software Developers & Software Quality Assurance Analysts & Testers	747	1,046	298	39.9%	100	\$37.23
Financial & Investment Analysts, Financial Risk Specialists, & Financial Specialists, All Other	1,024	1,085	60	5.9%	99	\$27.95
Community & Social Service Specialists, All Other	841	869	29	3.4%	99	\$23.75
Chemical Technicians	849	903	54	6.3%	97	\$34.22
Sales Representatives, Wholesale & Manufacturing, Technical & Scientific Products	819	849	30	3.7%	93	\$30.35
Miscellaneous Assemblers & Fabricators	713	737	24	3.3%	91	\$15.30
Veterinary Assistants & Laboratory Animal Caretakers	490	554	65	13.2%	91	\$11.33
Healthcare Support Workers, All Other	709	764	55	7.7%	90	\$13.92
Animal Caretakers	429	540	111	26.0%	90	\$10.35
Medical Secretaries & Administrative Assistants	466	694	228	48.9%	87	\$14.64
Education Administrators, Kindergarten through Secondary	324	1,426	28	7.7%	87	\$34.33
Bus & Truck Mechanics & Diesel Engine Specialists	1,324	881	59	7.1%	86	\$23.91
Computer Occupations, All Other	939	1,017	78	8.3%	85	\$29.52



<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>CHANGE</b>	<b>% CHANGE</b>	<b>ANNUAL JOB OPENINGS</b>	<b>MEDIAN HOURLY WAGE</b>
Helpers--Pipelayers, Plumbers, Pipefitters, & Steamfitters	595	579	(16)	(2.7%)	85	\$18.04
Crematory Operators & Personal Care & Service Workers, All Other	491	565	74	15.1%	85	\$11.63
Telecommunications Equipment Installers & Repairers, Except Line Installers	785	732	(53)	(6.8%)	84	\$23.60
Food Service Managers	612	694	83	13.5%	84	\$23.88
Life, Physical, & Social Science Technicians, All Other	663	686	23	3.4%	83	\$22.52
Manicurists & Pedicurists	621	699	78	12.6%	83	\$10.35
Civil Engineers	970	1,014	44	4.5%	82	\$44.99
Librarians & Media Collections Specialists	738	781	42	5.7%	82	\$25.48
Directors, Religious Activities & Education	582	642	59	10.2%	82	\$21.22
Social & Human Service Assistants	552	652	100	18.2%	81	\$14.54
Loan Officers	884	911	27	3.0%	80	\$24.35
Buyers & Purchasing Agents	745	744	(1)	(0.1%)	80	\$24.62
Sheet Metal Workers	651	707	56	8.6%	80	\$22.79
Crane & Tower Operators	612	630	17	2.8%	80	\$26.50
Refuse & Recyclable Material Collectors	503	556	53	10.5%	80	\$15.13
Riggers	748	754	6	0.8%	79	\$28.21
Physical Therapist Aides	546	611	64	11.8%	78	\$10.01
Musicians & Singers	542	623	81	15.0%	78	\$22.28
Food Preparation & Serving Related Workers, All Other	416	452	36	8.6%	78	\$9.06
Special Education Teachers, Kindergarten & Elementary School	925	971	46	5.0%	77	\$24.46
Cost Estimators	666	726	60	9.0%	76	\$31.87
Mobile Heavy Equipment Mechanics, Except Engines	640	689	49	7.6%	76	\$26.27
Training & Development Specialists	600	676	75	12.6%	76	\$24.99
Helpers--Installation, Maintenance, & Repair Workers	535	573	38	7.1%	76	\$14.69
Teaching Assistants, Postsecondary	858	881	23	2.7%	75	\$18.21
First-Line Supervisors of Personal Service & Entertainment Workers, Except Gambling Services	671	729	58	8.6%	75	\$15.74
Packers & Packers, Hand	440	498	58	13.3%	74	\$12.42
Claims Adjusters, Examiners, & Investigators	870	809	(61)	(7.0%)	73	\$31.02



<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>CHANGE</b>	<b>% CHANGE</b>	<b>ANNUAL JOB OPENINGS</b>	<b>MEDIAN HOURLY WAGE</b>
Calibration Technologists & Technicians & Engineering Technicians, Except Drafters, All Other	673	718	46	6.8%	73	\$23.65
Actors	611	581	(31)	(5.1%)	73	\$13.61
First-Line Supervisors of Housekeeping & Janitorial Workers	542	613	72	13.2%	73	\$15.59
Clinical Laboratory Technologists & Technicians	921	1,024	103	11.2%	72	\$21.25
Postal Service Mail Carriers	1,004	881	(123)	(12.3%)	71	\$22.73
Farmers, Ranchers, & Other Agricultural Managers	620	626	5	0.9%	71	\$23.18
Sales & Related Workers, All Other	513	536	22	4.3%	71	\$12.92
Production, Planning, & Expediting Clerks	550	629	79	14.3%	70	\$23.49
Structural Iron & Steel Workers	514	566	52	10.1%	70	\$25.07
Pest Control Workers	420	483	63	14.9%	70	\$14.47
Securities, Commodities, & Financial Services Sales Agents	686	690	4	0.6%	69	\$21.59
Sales Managers	655	731	76	11.6%	69	\$42.59
Couriers & Messengers	600	665	65	10.9%	69	\$12.58
Sailors & Marine Oilers	544	530	(15)	(2.7%)	68	\$19.60
First-Line Supervisors of Non-Retail Sales Workers	617	659	42	6.8%	66	\$25.72
Social & Community Service Managers	656	712	55	8.4%	65	\$36.35
Mixing & Blending Machine Setters, Operators, & Tenders	482	517	35	7.2%	65	\$21.13
Data Entry Keyers	608	498	(111)	(18.2%)	64	\$14.76
Boilermakers	620	557	(63)	(10.2%)	63	\$30.18
Graphic Designers	547	602	55	10.1%	63	\$22.02
Dispatchers, Except Police, Fire, & Ambulance	576	619	43	7.5%	62	\$17.46
Computer Programmers	890	823	(67)	(7.5%)	61	\$33.37
Computer Systems Analysts	673	767	94	14.0%	61	\$36.39
Tire Repairers & Changers	549	522	(27)	(4.9%)	61	\$11.03
Counselors, All Other	544	578	34	6.2%	61	\$17.67
Insurance Claims & Policy Processing Clerks	535	585	50	9.3%	61	\$17.86
Information & Record Clerks, All Other	466	512	46	10.0%	61	\$20.58
Helpers--Carpenters	420	435	15	3.5%	61	\$18.04
Food Batchmakers	362	401	38	10.6%	61	\$9.05



<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>CHANGE</b>	<b>% CHANGE</b>	<b>ANNUAL JOB OPENINGS</b>	<b>MEDIAN HOURLY WAGE</b>
Property, Real Estate, & Community Association Managers	648	719	71	11.0%	60	\$20.25
Automotive & Watercraft Service Attendants	353	399	46	13.0%	60	\$13.88
Nurse Practitioners	694	872	178	25.6%	59	\$47.30
Legal Secretaries & Administrative Assistants	549	486	(63)	(11.5%)	59	\$22.00
Pharmacists	1,126	1,177	51	4.5%	58	\$62.44
Computer & Information Systems Managers	575	668	93	16.2%	58	\$48.52
Payroll & Timekeeping Clerks	522	519	(3)	(0.6%)	58	\$18.99
Bill & Account Collectors	433	450	17	3.9%	58	\$15.29
Network & Computer Systems Administrators	725	771	46	6.3%	57	\$32.33
Gambling Dealers	375	330	(45)	(11.9%)	56	\$10.69
Residential Advisors	315	360	45	14.2%	56	\$14.10
Mechanical Engineers	693	747	54	7.8%	55	\$46.71
Physical Therapist Assistants	342	419	77	22.4%	55	\$22.52
Chemical Engineers	651	733	81	12.5%	54	\$59.51
Logisticians	502	537	35	7.0%	54	\$32.25
Butchers & Meat Cutters	411	421	10	2.4%	54	\$12.88
Compensation, Benefits, & Job Analysis Specialists	543	554	11	2.1%	53	\$23.95
Weighers, Measurers, Checkers, & Samplers, Recordkeeping	422	449	27	6.3%	53	\$13.52
Packaging & Filling Machine Operators & Tenders	374	432	57	15.3%	53	\$15.69
Bakers	338	378	41	12.0%	53	\$11.13
Physical Therapists	807	955	148	18.4%	52	\$41.54
Public Safety Telecommunicators	485	517	32	6.6%	51	\$15.76
School Bus Monitors & Protective Service Workers, All Other	203	213	10	5.1%	51	\$16.26
Health Information Technologists, Medical Registrars, Surgical Assistants, & Healthcare Practitioners & Technical Workers, All Other	763	816	52	6.8%	50	\$22.82
Dental Hygienists	564	654	90	15.9%	50	\$33.88
Loan Interviewers & Clerks	456	482	26	5.7%	50	\$16.97
Pharmacy Aides	405	376	(30)	(7.3%)	50	\$11.59
Physicians, All Other; & Ophthalmologists, Except Pediatric	1,182	1,310	128	10.8%	49	\$97.99
Millwrights	482	526	44	9.2%	49	\$27.18



<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>CHANGE</b>	<b>% CHANGE</b>	<b>ANNUAL JOB OPENINGS</b>	<b>MEDIAN HOURLY WAGE</b>
Healthcare Social Workers	391	465	73	18.7%	49	\$24.53
Mental Health & Substance Abuse Social Workers	384	449	65	16.9%	48	\$19.05
First-Line Supervisors of Landscaping, Lawn Service, & Groundskeeping Workers	396	404	8	2.1%	47	\$16.65
Cement Masons & Concrete Finishers	363	408	46	12.6%	47	\$19.41
Switchboard Operators, Including Answering Service	349	341	(9)	(2.5%)	46	\$13.31
Writers & Authors	344	407	63	18.4%	46	\$17.93
Architectural & Engineering Managers	545	582	37	6.8%	45	\$71.97
Emergency Medical Technicians & Paramedics	505	588	84	16.5%	45	\$20.35
Phlebotomists	314	388	74	23.7%	45	\$14.60
Interviewers, Except Eligibility & Loan	291	344	52	18.0%	44	\$14.51
Industrial Production Managers	494	538	43	8.8%	43	\$51.90
Human Resources Managers	449	482	33	7.3%	43	\$39.94
Drafters, All Other	385	403	18	4.7%	43	\$25.57
First-Line Supervisors of Police & Detectives	602	633	31	5.1%	42	\$28.80
Occupational Therapists	560	643	84	15.0%	42	\$43.25
Education Administrators, Postsecondary	522	529	7	1.4%	42	\$37.24
Architects, Except Landscape & Naval	482	512	30	6.2%	42	\$34.53
Surveying & Mapping Technicians	338	352	14	4.1%	42	\$22.32
Massage Therapists	279	336	57	20.5%	42	\$23.26
First-Line Supervisors of Correctional Officers	615	573	(42)	(6.8%)	41	\$26.25
Special Education Teachers, Secondary School	485	515	30	6.2%	41	\$26.41
Transportation, Storage, & Distribution Managers	455	487	32	7.0%	41	\$37.53
Public Relations Specialists	317	371	53	16.9%	41	\$23.08
Farmworkers, Farm, Ranch, & Aquacultural Animals	201	240	38	19.0%	41	\$11.13
Conservation Scientists	387	386	(1)	(0.3%)	40	\$28.70
Medical Transcriptionists	280	263	(17)	(6.2%)	40	\$21.51
Advertising Sales Agents	288	281	(7)	(2.4%)	39	\$19.24
Building Cleaning Workers, All Other	260	290	29	11.3%	39	\$11.32
Hazardous Materials Removal Workers	223	285	62	27.6%	39	\$17.98



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Crossing Guards & Flaggers	217	235	18	8.2%	39	\$8.95
Radiologic Technologists & Technicians	533	602	68	12.8%	38	\$24.80
Excavating & Loading Machine & Dragline Operators, Surface Mining	289	285	(3)	(1.2%)	38	\$20.50
Religious Workers, All Other	255	286	30	11.9%	38	\$15.08
Substitute Teachers, Short-Term	249	305	56	22.4%	38	\$14.83
Industrial Engineers	437	491	54	12.3%	37	\$43.24
Speech-Language Pathologists	420	536	115	27.5%	37	\$41.82
Computer Network Support Specialists	373	414	41	11.1%	37	\$24.60
Automotive Body & Related Repairers	353	368	15	4.1%	37	\$20.68
Electrical & Electronic Engineering Technologists & Technicians	349	365	16	4.6%	37	\$33.43
Helpers--Painters, Paperhangers, Plasterers, & Stucco Masons	286	258	(29)	(10.0%)	37	\$15.33
Reinforcing Iron & Rebar Workers	275	288	13	4.7%	37	\$29.91
Captains, Mates, & Pilots of Water Vessels	360	360	0	0.0%	36	\$37.99
Court, Municipal, & License Clerks	355	376	21	5.9%	36	\$17.99
Maintenance Workers, Machinery	337	359	22	6.6%	36	\$23.42
Designers, All Other	321	343	22	6.8%	36	\$33.89
Chefs & Head Cooks	223	262	39	17.3%	36	\$21.42
Fishing & Hunting Workers	208	220	12	5.9%	36	\$13.82
Electrical & Electronics Repairers, Commercial & Industrial Equipment	378	379	1	0.2%	35	\$32.12
Cabinetmakers & Bench Carpenters	290	314	24	8.4%	35	\$12.61
Roofers	266	303	37	13.9%	35	\$19.55
Audio & Video Technicians	229	299	70	30.7%	35	\$18.74
Occupational Health & Safety Specialists	548	564	16	2.9%	34	\$33.32
Respiratory Therapists	422	517	96	22.7%	34	\$25.41
Environmental Scientists & Specialists, Including Health	285	305	20	7.0%	34	\$29.65
Meat, Poultry, & Fish Cutters & Trimmers	236	255	19	8.2%	34	\$11.26
Title Examiners, Abstractors, & Searchers	355	361	6	1.7%	33	\$21.52
Passenger Attendants	227	242	15	6.5%	33	\$9.45
Insurance Underwriters	375	365	(10)	(2.6%)	32	\$23.62
Personal Financial Advisors	352	391	39	11.0%	32	\$29.47



<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>CHANGE</b>	<b>% CHANGE</b>	<b>ANNUAL JOB OPENINGS</b>	<b>MEDIAN HOURLY WAGE</b>
Psychiatric Technicians	341	357	16	4.6%	32	\$12.23
Food Processing Workers, All Other	280	289	9	3.3%	32	\$13.68
Construction & Building Inspectors	226	249	24	10.5%	32	\$25.79
Bus Drivers, Transit & Intercity	182	234	52	28.5%	32	\$18.06
Chief Executives	388	407	19	4.8%	31	\$81.12
Water & Wastewater Treatment Plant & System Operators	332	328	(4)	(1.3%)	31	\$18.13
Structural Metal Fabricators & Fitters	299	276	(22)	(7.5%)	31	\$18.18
Social Workers, All Other	285	302	17	6.1%	31	\$24.91
Order Clerks	232	259	26	11.3%	31	\$15.33
Pipelayers	230	238	8	3.4%	31	\$14.41
Telemarketers	169	173	4	2.4%	31	\$10.01
Detectives & Criminal Investigators	443	456	13	3.0%	30	\$23.14
Physician Assistants	303	400	97	31.9%	30	\$41.54
Surgical Technologists	291	332	42	14.3%	30	\$21.11
Security & Fire Alarm Systems Installers	227	240	14	6.0%	30	\$21.25
Special Education Teachers, Middle School	344	361	17	5.0%	29	\$24.67
Photographers	289	266	(23)	(8.0%)	29	\$12.60
Veterinary Technologists & Technicians	274	320	46	16.7%	29	\$14.06
Human Resources Assistants, Except Payroll & Timekeeping	251	253	2	0.7%	29	\$18.23
File Clerks	243	225	(18)	(7.3%)	29	\$11.60
Reservation & Transportation Ticket Agents & Travel Clerks	239	247	8	3.3%	29	\$18.05
Marketing Managers	233	290	57	24.6%	29	\$41.56
Telecommunications Line Installers & Repairers	231	254	23	9.9%	29	\$24.54
Coating, Painting, & Spraying Machine Setters, Operators, & Tenders	220	251	31	14.2%	29	\$18.13
Tax Examiners & Collectors, & Revenue Agents	335	337	2	0.5%	28	\$20.07
Control & Valve Installers & Repairers, Except Mechanical Door	312	304	(8)	(2.4%)	28	\$21.97
Meter Readers, Utilities	296	269	(27)	(9.3%)	28	\$15.78
Fundraisers	210	252	42	19.9%	28	\$15.98
Tank Car, Truck, & Ship Loaders	204	211	6	3.1%	28	\$20.28
Cooks, All Other	187	196	9	4.8%	28	\$13.75



<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>CHANGE</b>	<b>% CHANGE</b>	<b>ANNUAL JOB OPENINGS</b>	<b>MEDIAN HOURLY WAGE</b>
Library Assistants, Clerical	173	185	12	7.2%	28	\$11.87
Motor Vehicle Operators, All Other	149	167	18	11.8%	28	\$19.37
First-Line Supervisors of Fire Fighting & Prevention Workers	377	401	24	6.3%	27	\$26.75
Electrical Engineers	333	370	37	11.0%	27	\$50.52
Occupational Therapy Assistants	176	230	53	30.3%	27	\$28.45
Tour & Travel Guides	128	153	25	19.5%	27	\$10.89
Industrial Engineering Technologists & Technicians	233	247	14	6.1%	26	\$39.38
Child, Family, & School Social Workers	207	243	36	17.5%	26	\$18.65
Web Developers & Digital Interface Designers	227	280	53	23.1%	25	\$13.99
Electronics Engineers, Except Computer	347	339	(8)	(2.3%)	24	\$37.37
Barbers	231	197	(34)	(14.8%)	24	\$10.10
Architectural & Civil Drafters	223	225	3	1.2%	24	\$24.53
Music Directors & Composers	180	199	19	10.4%	24	\$26.57
Property Appraisers & Assessors	288	299	11	3.7%	23	\$23.60
Civil Engineering Technologists & Technicians	225	232	8	3.5%	23	\$27.50
Electrical Power-Line Installers & Repairers	218	251	32	14.8%	23	\$24.38
Merchandise Displayers & Window Trimmers	200	217	17	8.7%	23	\$14.31
Chemists	187	226	39	20.9%	23	\$42.45
Psychiatric Aides	182	199	17	9.4%	23	\$11.30
Art Directors	164	196	31	19.1%	23	\$23.13
Extruding & Forming Machine Setters, Operators, & Tenders, Synthetic & Glass Fibers	161	163	2	1.2%	23	\$16.40
Ophthalmic Laboratory Technicians	154	176	22	14.2%	23	\$15.21
Career/Technical Education Teachers, Secondary School	282	295	13	4.4%	22	\$28.23
Electrical, Electronic, & Electromechanical Assemblers, Except Coil Winders, Tapers, & Finishers	147	178	31	20.9%	22	\$22.82
Agricultural Workers, All Other	114	127	13	11.5%	22	\$21.47
Real Estate Brokers	191	206	15	7.9%	21	\$22.77
Computer, Automated Teller, & Office Machine Repairers	182	185	4	2.0%	21	\$16.53
Editors	182	179	(3)	(1.4%)	21	\$17.46
Gas Plant Operators	178	174	(5)	(2.6%)	21	\$29.24



<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>CHANGE</b>	<b>% CHANGE</b>	<b>ANNUAL JOB OPENINGS</b>	<b>MEDIAN HOURLY WAGE</b>
Railroad Conductors & Yardmasters	174	205	31	17.7%	21	\$31.67
Tax Preparers	168	176	8	4.7%	21	\$15.14
Agricultural & Food Science Technicians	161	168	7	4.1%	21	\$14.74
Brickmasons & Blockmasons	142	180	37	26.1%	21	\$19.08
Demonstrators & Product Promoters	106	123	17	15.8%	21	\$15.39
Probation Officers & Correctional Treatment Specialists	226	233	7	3.1%	20	\$23.85
Procurement Clerks	184	183	(0)	0.0%	20	\$20.82
Producers & Directors	175	195	20	11.7%	20	\$21.10
Mail Clerks & Mail Machine Operators, Except Postal Service	159	171	11	7.2%	20	\$12.56
Interpreters & Translators	149	180	31	21.1%	20	\$13.87
Fence Erectors	136	146	10	7.0%	20	\$9.36
Septic Tank Servicers & Sewer Pipe Cleaners	122	158	36	29.5%	20	\$17.72
Parking Attendants	108	126	18	16.7%	20	\$12.14
Aircraft Mechanics & Service Technicians	207	212	5	2.4%	19	\$31.12
Media & Communication Workers, All Other	165	174	10	5.8%	19	\$12.19
Farm Equipment Mechanics & Service Technicians	165	160	(5)	(2.9%)	19	\$19.79
Coin, Vending, & Amusement Machine Servicers & Repairers	162	151	(10)	(6.3%)	19	\$17.94
Printing Press Operators	158	169	10	6.4%	19	\$16.71
Rehabilitation Counselors	157	173	16	10.3%	19	\$25.55
Fiberglass Laminators & Fabricators	151	147	(3)	(2.3%)	19	\$22.20
Print Binding & Finishing Workers	151	125	(26)	(17.1%)	19	\$16.54
Highway Maintenance Workers	149	167	18	11.9%	19	\$12.76
Medical Equipment Repairers	147	167	20	13.3%	19	\$23.12
Pump Operators, Except Wellhead Pumpers	145	147	2	1.6%	19	\$22.91
Forensic Science Technicians	142	158	16	11.3%	19	\$25.31
Fine Artists, Including Painters, Sculptors, & Illustrators	135	163	28	20.5%	19	\$14.59
Meeting, Convention, & Event Planners	123	154	31	25.1%	19	\$21.43
Miscellaneous Entertainers & Performers, Sports & Related Workers	123	150	27	22.1%	19	\$29.90
Paper Goods Machine Setters, Operators, & Tenders	111	150	39	35.5%	19	\$10.95



<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>CHANGE</b>	<b>% CHANGE</b>	<b>ANNUAL JOB OPENINGS</b>	<b>MEDIAN HOURLY WAGE</b>
Legislators	209	224	16	7.4%	18	\$8.71
Purchasing Managers	192	208	17	8.6%	18	\$40.65
Mechanical Drafters	169	166	(3)	(1.9%)	18	\$28.23
Lighting Technicians & Media & Communication Equipment Workers, All Other	157	155	(2)	(1.5%)	18	\$11.92
Interior Designers	151	168	17	10.9%	18	\$13.91
Travel Agents	134	123	(11)	(8.4%)	18	\$18.52
Gambling & Sports Book Writers & Runners	130	98	(32)	(24.5%)	18	\$9.61
Skincare Specialists	127	150	23	18.4%	18	\$12.41
Sewing Machine Operators	127	146	19	15.1%	18	\$12.10
Sawing Machine Setters, Operators, & Tenders, Wood	123	134	11	9.1%	18	\$15.83
Gambling Change Persons & Booth Cashiers	108	83	(24)	(22.7%)	18	\$12.94
Postal Service Clerks	232	204	(28)	(12.2%)	17	\$27.39
Postal Service Mail Sorters, Processors, & Processing Machine Operators	215	181	(34)	(15.8%)	17	\$27.14
Special Education Teachers, All Other	193	207	15	7.5%	17	\$22.67
Airline Pilots, Copilots, & Flight Engineers	171	154	(17)	(10.0%)	17	\$49.94
Miscellaneous First-Line Supervisors, Protective Service Workers	166	167	2	1.0%	17	\$26.90
Environmental Engineering Technologists & Technicians	164	174	10	6.0%	17	\$22.09
Kindergarten Teachers, Except Special Education	141	162	20	14.4%	17	\$20.12
Occupational Therapy Aides	136	148	12	9.1%	17	\$27.70
Material Moving Workers, All Other	123	134	11	8.6%	17	\$18.46
Clinical, Counseling, & School Psychologists	122	188	65	53.4%	17	\$48.61
Cutting, Punching, & Press Machine Setters, Operators, & Tenders, Metal & Plastic	117	139	22	18.7%	17	\$17.99
Machine Feeders & Offbearers	112	125	13	11.8%	17	\$15.87
First-Line Supervisors of Farming, Fishing, & Forestry Workers	102	110	7	7.3%	17	\$26.36
Animal Trainers	98	113	15	15.8%	17	\$12.96
Surveyors	209	212	4	1.7%	16	\$31.25
Diagnostic Medical Sonographers	207	244	36	17.6%	16	\$32.10
Dietitians & Nutritionists	185	219	34	18.4%	16	\$27.44



<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>CHANGE</b>	<b>% CHANGE</b>	<b>ANNUAL JOB OPENINGS</b>	<b>MEDIAN HOURLY WAGE</b>
Legal Support Workers, All Other	166	171	5	3.0%	16	\$19.63
Credit Authorizers, Checkers, & Clerks	156	149	(7)	(4.6%)	16	\$14.43
Locksmiths & Safe Repairers	150	138	(12)	(8.2%)	16	\$18.49
Rail Car Repairers	148	145	(3)	(2.3%)	16	\$28.37
New Accounts Clerks	147	123	(24)	(16.4%)	16	\$18.07
Electro-Mechanical & Mechatronics Technologists & Technicians	144	149	5	3.7%	16	\$34.05
Milling & Planing Machine Setters, Operators, & Tenders, Metal & Plastic	144	140	(4)	(2.7%)	16	\$22.36
Locomotive Engineers	134	158	25	18.4%	16	\$42.48
Geoscientists, Except Hydrologists & Geographers	130	142	12	9.3%	16	\$33.25
Conveyor Operators & Tenders	126	131	5	3.9%	16	\$14.49
Ship Engineers	123	121	(2)	(1.4%)	16	\$32.82
Rail-Track Laying & Maintenance Equipment Operators	122	141	19	15.8%	16	\$28.71
Choreographers	85	92	7	8.6%	16	\$15.40
Budget Analysts	179	189	10	5.4%	15	\$31.32
Brokerage Clerks	147	141	(6)	(3.8%)	15	\$23.85
Opticians, Dispensing	135	167	32	23.9%	15	\$14.91
Aircraft Service Attendants & Transportation Workers, All Other	133	133	0	0.0%	15	\$11.72
Molding, Coremaking, & Casting Machine Setters, Operators, & Tenders, Metal & Plastic	112	125	13	11.5%	15	\$13.49
Logging Equipment Operators	88	78	(11)	(12.1%)	15	\$21.07
Earth Drillers, Except Oil & Gas; & Explosives Workers, Ordnance Handling Experts, & Blasters	85	94	9	10.5%	15	\$18.53
Aircraft Structure, Surfaces, Rigging, & Systems Assemblers	165	141	(24)	(14.7%)	14	\$32.16
News Analysts, Reporters, & Journalists	150	100	(49)	(32.8%)	14	\$18.02
Database Administrators & Architects	137	164	27	19.4%	14	\$41.51
Natural Sciences Managers	136	147	12	8.8%	14	\$44.93
Tile & Stone Setters	128	127	(1)	(0.8%)	14	\$18.53
Commercial & Industrial Designers	126	133	6	5.1%	14	\$31.31
Door-To-Door Sales Workers, News & Street Vendors, & Related Workers	119	99	(20)	(17.2%)	14	\$11.13
Information Security Analysts	115	161	46	40.2%	14	\$30.99
Special Effects Artists & Animators	108	121	13	11.9%	14	\$23.84



<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>CHANGE</b>	<b>% CHANGE</b>	<b>ANNUAL JOB OPENINGS</b>	<b>MEDIAN HOURLY WAGE</b>
Tailors, Dressmakers, & Custom Sewers	107	99	(9)	(8.0%)	14	\$11.40
Drywall & Ceiling Tile Installers	106	121	15	14.2%	14	\$15.92
Agricultural Inspectors	90	93	3	2.8%	14	\$21.79
Marriage & Family Therapists	80	120	39	48.8%	14	\$19.33
Forest & Conservation Workers	80	73	(6)	(7.9%)	14	\$18.74
Veterinarians	226	265	39	17.2%	13	\$40.64
Materials Engineers	179	184	5	2.8%	13	\$49.99
Public Relations & Fundraising Managers	135	149	14	10.0%	13	\$43.32
Training & Development Managers	126	135	9	6.8%	13	\$43.09
Floral Designers	126	127	1	0.9%	13	\$13.86
Power Plant Operators	122	124	1	1.2%	13	\$48.38
Eligibility Interviewers, Government Programs	119	131	12	9.9%	13	\$18.22
Court Reporters & Simultaneous Captioners	118	131	13	11.0%	13	\$24.39
Pile Driver Operators	109	108	(1)	(1.1%)	13	\$24.66
Plant & System Operators, All Other	109	107	(2)	(2.1%)	13	\$29.62
Plating Machine Setters, Operators, & Tenders, Metal & Plastic	100	117	16	16.2%	13	\$16.57
Morticians, Undertakers, & Funeral Arrangers	96	105	9	8.9%	13	\$23.96
Tree Trimmers & Pruners	95	92	(3)	(3.1%)	13	\$10.47
Health Education Specialists	93	109	16	17.3%	13	\$26.71
Extruding & Drawing Machine Setters, Operators, & Tenders, Metal & Plastic	91	94	3	3.4%	13	\$15.33
Multiple Machine Tool Setters, Operators, & Tenders, Metal & Plastic	88	112	24	26.7%	13	\$17.40
Extruding, Forming, Pressing, & Compacting Machine Setters, Operators, & Tenders	87	106	19	21.3%	13	\$15.58
Umpires, Referees, & Other Sports Officials	79	90	11	13.2%	13	\$15.20
Cleaning, Washing, & Metal Pickling Equipment Operators & Tenders	77	79	2	3.3%	13	\$16.15
Woodworking Machine Setters, Operators, & Tenders, Except Sawing	75	87	12	15.6%	13	\$17.12
Funeral Attendants	70	77	7	10.5%	13	\$11.68
Agricultural Equipment Operators	66	79	14	20.8%	13	\$12.79
Health & Safety Engineers, Except Mining Safety Engineers & Inspectors	164	170	7	4.2%	12	\$41.81
Computer Network Architects	132	149	16	12.5%	12	\$38.02



<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>CHANGE</b>	<b>% CHANGE</b>	<b>ANNUAL JOB OPENINGS</b>	<b>MEDIAN HOURLY WAGE</b>
Camera Operators, Television, Video, & Film	126	120	(6)	(5.1%)	12	\$15.65
Biological Scientists, All Other	124	130	6	5.1%	12	\$29.31
Electrical & Electronics Repairers, Powerhouse, Substation, & Relay	123	128	5	3.8%	12	\$33.20
Transportation Inspectors	104	114	10	9.9%	12	\$43.71
Commercial Pilots	104	108	4	3.8%	12	\$38.30
Financial Clerks, All Other	103	110	7	6.7%	12	\$18.33
Molders, Shapers, & Casters, Except Metal & Plastic	94	105	11	11.8%	12	\$14.07
Slaughterers & Meat Packers	94	95	2	2.0%	12	\$22.94
Underground Mining Machine Operators & Extraction Workers, All Other	93	90	(3)	(3.1%)	12	\$27.19
Orderlies	91	99	8	9.3%	12	\$11.21
Medical Equipment Preparers	82	99	17	21.0%	12	\$14.00
Roustabouts, Oil & Gas	75	83	7	10.0%	12	\$19.81
Glaziers	72	95	22	30.7%	12	\$17.42
Helpers--Brickmasons, Blockmasons, Stonemasons, & Tile & Marble Setters	64	83	18	28.1%	12	\$18.94
Occupational Health & Safety Technicians	179	180	1	0.8%	11	\$36.74
Landscape Architects	128	132	4	3.2%	11	\$15.08
Nuclear Engineers	121	143	22	18.5%	11	\$38.70
Psychologists, All Other	121	142	21	17.6%	11	\$48.07
Credit Analysts	108	112	4	3.7%	11	\$31.23
Lodging Managers	102	103	1	1.4%	11	\$26.27
Gambling Cage Workers	89	70	(19)	(21.0%)	11	\$12.22
Sales Engineers	87	95	9	10.1%	11	\$37.79
Motorcycle Mechanics	86	101	15	17.1%	11	\$17.21
Paving, Surfacing, & Tamping Equipment Operators	81	79	(2)	(3.0%)	11	\$17.38
Rock Splitters, Quarry	77	76	(1)	(1.1%)	11	\$28.94
Cutting & Slicing Machine Setters, Operators, & Tenders	74	83	9	12.1%	11	\$17.61
Community Health Workers	73	94	21	28.7%	11	\$19.25
Wellhead Pumpers	68	81	13	19.6%	11	\$13.09
Solar Photovoltaic Installers	56	77	21	38.2%	11	\$24.11
Elevator & Escalator Installers & Repairers	49	85	37	75.4%	11	\$35.09



SOC TITLE	2020 JOBS	2030 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Locker Room, Coatroom, & Dressing Room Attendants	41	46	5	13.2%	11	\$13.41
Dentists, General	205	223	18	8.9%	10	\$76.02
Magnetic Resonance Imaging Technologists	159	171	12	7.5%	10	\$33.62
Electrical & Electronics Drafters	92	96	4	4.4%	10	\$29.89
Electric Motor, Power Tool, & Related Repairers	88	91	3	3.3%	10	\$18.61
Word Processors & Typists	87	70	(17)	(19.1%)	10	\$14.80
Survey Researchers	86	85	(1)	(1.4%)	10	\$16.59
Grounds Maintenance Workers, All Other	74	74	0	0.0%	10	\$16.98
Office Machine Operators, Except Computer	71	77	6	8.0%	10	\$14.90
Embalmers	62	63	1	1.7%	10	\$18.61
Education & Childcare Administrators, Preschool & Daycare	98	103	6	5.8%	9	\$16.73
Environmental Engineers	94	103	10	10.5%	9	\$49.56
Stationary Engineers & Boiler Operators	86	74	(12)	(14.2%)	9	\$25.47
Welding, Soldering, & Brazing Machine Setters, Operators, & Tenders	80	77	(3)	(3.6%)	9	\$28.28
Cargo & Freight Agents	78	87	9	11.6%	9	\$19.07
Precision Instrument & Equipment Repairers, All Other	78	81	3	4.0%	9	\$28.84
Broadcast Announcers & Radio Disc Jockeys	78	72	(6)	(8.0%)	9	\$17.04
Recreational Vehicle Service Technicians	73	82	9	12.0%	9	\$21.58
Outdoor Power Equipment & Other Small Engine Mechanics	71	83	11	15.9%	9	\$16.83
Separating, Filtering, Clarifying, Precipitating, & Still Machine Setters, Operators, & Tenders	67	63	(3)	(5.0%)	9	\$23.29
Gambling Service Workers, All Other	64	52	(12)	(18.6%)	9	\$8.71
Pesticide Handlers, Sprayers, & Applicators, Vegetation	63	68	6	9.1%	9	\$13.31
Helpers--Roofers	55	63	8	14.4%	9	\$12.31
Entertainment Attendants & Related Workers, All Other	43	34	(9)	(20.5%)	9	\$8.88
Cardiovascular Technologists & Technicians	114	127	12	10.7%	8	\$17.00
Avionics Technicians	107	108	0	0.0%	8	\$33.21
Foresters	80	72	(8)	(10.3%)	8	\$50.28
Dietetic Technicians	79	89	10	12.6%	8	\$12.65



<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>CHANGE</b>	<b>% CHANGE</b>	<b>ANNUAL JOB OPENINGS</b>	<b>MEDIAN HOURLY WAGE</b>
Advertising & Promotions Managers	74	81	7	9.5%	8	\$55.67
Set & Exhibit Designers	70	78	9	12.2%	8	\$19.33
Motorboat Mechanics & Service Technicians	65	76	11	17.6%	8	\$16.56
Technical Writers	65	75	10	15.5%	8	\$32.51
Curators	64	71	7	11.4%	8	\$11.16
Computer Numerically Controlled Tool Operators	61	72	10	17.0%	8	\$15.64
Craft Artists	58	72	14	24.8%	8	\$7.23
Dental Laboratory Technicians	58	58	0	0.0%	8	\$20.97
Concierges	53	58	4	8.3%	8	\$11.44
Family Medicine Physicians	109	139	30	27.0%	7	\$98.76
Therapists, All Other	89	108	18	20.8%	7	\$22.25
Cartographers & Photogrammetrists	87	94	7	7.8%	7	\$27.19
Orthotists & Prosthetists	73	85	13	17.2%	7	\$36.16
Railroad Brake, Signal, & Switch Operators & Locomotive Firers	73	73	0	0.0%	7	\$25.00
Education Administrators, All Other	69	79	10	14.0%	7	\$25.63
Physical Scientists, All Other	69	73	3	5.0%	7	\$29.57
Electrical & Electronics Installers & Repairers, Transportation Equipment	68	73	5	6.7%	7	\$24.33
Animal Control Workers	68	71	3	4.6%	7	\$13.94
Home Appliance Repairers	63	65	2	3.7%	7	\$15.06
Petroleum Engineers	58	76	18	31.9%	7	\$57.89
Sociologists	56	57	2	2.9%	7	\$39.19
Furniture Finishers	56	57	1	1.3%	7	\$15.26
Coil Winders, Tapers, & Finishers	56	56	0	0.0%	7	\$8.95
Communications Equipment Operators, All Other	50	50	0	0.0%	7	\$16.28
Social Science Research Assistants	48	53	6	11.9%	7	\$9.10
Baggage Porters & Bellhops	45	48	3	7.6%	7	\$9.20
Graders & Sorters, Agricultural Products	41	43	3	6.2%	7	\$14.38
Biological Technicians	39	55	16	41.8%	7	\$22.72
Wind Turbine Service Technicians	31	54	22	70.7%	7	\$25.70
Financial Examiners	75	81	5	7.1%	6	\$47.24
Nurse Anesthetists	71	87	16	22.6%	6	\$82.39



<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>CHANGE</b>	<b>% CHANGE</b>	<b>ANNUAL JOB OPENINGS</b>	<b>MEDIAN HOURLY WAGE</b>
Fire Inspectors & Investigators	61	63	3	4.3%	6	\$28.72
Private Detectives & Investigators	61	63	1	2.3%	6	\$23.72
Bicycle Repairers	61	51	(10)	(16.5%)	6	\$20.75
Computer Hardware Engineers	60	68	9	15.0%	6	\$40.76
Bridge & Lock Tenders	60	59	(1)	(1.0%)	6	\$18.37
Transportation Security Screeners	59	61	2	3.1%	6	\$18.89
Atmospheric & Space Scientists	57	57	0	0.0%	6	\$43.99
Nuclear Power Reactor Operators	56	63	7	12.8%	6	\$83.05
Medical Scientists, Except Epidemiologists	53	64	12	22.3%	6	\$31.60
Adult Basic Education, Adult Secondary Education, & English as a Second Language Instructors	53	49	(4)	(7.4%)	6	\$13.50
Social Scientists & Related Workers, All Other	51	53	2	4.8%	6	\$34.98
Soil & Plant Scientists	50	56	5	10.5%	6	\$37.17
Timing Device Assemblers & Adjusters	48	49	1	1.7%	6	\$16.81
Jewelers & Precious Stone & Metal Workers	46	39	(7)	(14.9%)	6	\$15.65
Environmental Science & Protection Technicians, Including Health	37	49	13	34.9%	6	\$27.03
Operations Research Analysts	34	59	24	71.2%	6	\$28.83
Service Unit Operators, Oil & Gas	23	35	12	54.9%	6	\$26.95
Recreational Therapists	90	98	8	9.1%	5	\$18.59
Chiropractors	84	106	21	25.2%	5	\$38.65
Fish & Game Wardens	69	69	0	0.0%	5	\$44.67
Bailiffs	60	60	0	0.0%	5	\$15.03
Credit Counselors	58	61	3	5.0%	5	\$14.67
Carpet Installers	58	49	(8)	(14.5%)	5	\$18.10
Farm & Home Management Educators	56	56	0	0.0%	5	\$21.72
Compensation & Benefits Managers	53	54	1	2.5%	5	\$37.63
Gambling Managers	52	42	(10)	(18.4%)	5	\$36.56
Prepress Technicians & Workers	46	38	(8)	(17.2%)	5	\$17.56
Hydrologists	45	46	1	2.6%	5	\$40.07
Upholsterers	45	43	(2)	(4.5%)	5	\$10.80
Crushing, Grinding, & Polishing Machine Setters, Operators, & Tenders	45	41	(3)	(7.8%)	5	\$17.85





<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>CHANGE</b>	<b>% CHANGE</b>	<b>ANNUAL JOB OPENINGS</b>	<b>MEDIAN HOURLY WAGE</b>
Floor Layers, Except Carpet, Wood, & Hard Tiles	44	47	3	6.5%	5	\$21.18
Traffic Technicians	44	45	1	2.7%	5	\$18.31
Telephone Operators	44	33	(10)	(23.8%)	5	\$13.68
Plasterers & Stucco Masons	42	47	6	13.4%	5	\$13.40
Grinding & Polishing Workers, Hand	42	38	(4)	(8.5%)	5	\$15.86
Forest & Conservation Technicians	41	41	0	0.0%	5	\$13.55
Pressers, Textile, Garment, & Related Materials	41	36	(6)	(13.6%)	5	\$12.04
Gambling Surveillance Officers & Gambling Investigators	40	36	(4)	(10.2%)	5	\$15.47
Geological & Hydrologic Technicians	37	47	10	27.4%	5	\$25.44
Mechanical Engineering Technologists & Technicians	37	44	7	18.8%	5	\$30.94
Woodworkers, All Other	35	39	4	11.0%	5	\$7.69
Computer Numerically Controlled Tool Programmers	34	45	11	31.1%	5	\$22.50
Dredge Operators	33	41	8	22.9%	5	\$11.16
Tool & Die Makers	33	40	7	22.6%	5	\$19.10
Helpers--Extraction Workers	32	31	(0)	0.0%	5	\$16.51
Ambulance Drivers & Attendants, Except Emergency Medical Technicians	27	31	5	17.8%	5	\$12.86
Food Cooking Machine Operators & Tenders	24	29	4	17.8%	5	\$15.40
Motion Picture Projectionists	24	24	0	0.0%	5	\$12.57
Judicial Law Clerks	74	76	2	2.5%	4	\$18.52
Acupuncturists & Healthcare Diagnosing or Treating Practitioners, All Other	62	72	10	16.2%	4	\$71.24
Optometrists	59	73	13	22.5%	4	\$47.17
Nuclear Medicine Technologists	57	62	4	7.1%	4	\$31.11
Emergency Management Directors	51	54	2	4.8%	4	\$32.16
Data Scientists & Mathematical Science Occupations, All Other	46	50	4	8.0%	4	\$31.30
Career/Technical Education Teachers, Middle School	43	45	2	5.1%	4	\$25.76
Airfield Operations Specialists	42	43	1	2.1%	4	\$11.37
Funeral Home Managers	41	46	4	10.5%	4	\$10.85
Drilling & Boring Machine Tool Setters, Operators, & Tenders, Metal & Plastic	39	36	(3)	(8.4%)	4	\$13.99
Microbiologists	38	44	6	14.9%	4	\$33.84



SOC TITLE	2020 JOBS	2030 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Urban & Regional Planners	38	43	5	13.5%	4	\$24.64
Textile Winding, Twisting, & Drawing Out Machine Setters, Operators, & Tenders	35	38	3	9.5%	4	\$16.04
Furnace, Kiln, Oven, Drier, & Kettle Operators & Tenders	35	35	0	0.0%	4	\$23.63
Heat Treating Equipment Setters, Operators, & Tenders, Metal & Plastic	34	38	5	13.7%	4	\$21.74
Subway & Streetcar Operators	33	36	3	9.1%	4	\$29.37
Metal Workers & Plastic Workers, All Other	33	33	0	0.0%	4	\$18.92
Adhesive Bonding Machine Operators & Tenders	33	26	(7)	(20.7%)	4	\$21.80
Audiovisual Equipment Installers & Repairers	32	36	4	12.0%	4	\$16.53
Correspondence Clerks	32	30	(2)	(5.6%)	4	\$17.51
Statisticians	31	45	14	46.7%	4	\$29.63
Continuous Mining Machine Operators	29	29	0	0.0%	4	\$46.05
Grinding, Lapping, Polishing, & Buffing Machine Tool Setters, Operators, & Tenders, Metal & Plastic	28	33	5	18.8%	4	\$14.96
Sound Engineering Technicians	26	30	4	15.6%	4	\$20.91
First-Line Supervisors of Gambling Service Workers	22	23	1	3.9%	4	\$24.46
Models	16	21	5	27.9%	4	\$15.66
Ophthalmic Medical Technicians	14	31	17	116.4%	4	\$17.04
Pediatricians, General	91	94	3	3.7%	3	\$61.37
Psychiatrists	59	70	11	18.7%	3	\$14.80
Marine Engineers & Naval Architects	47	51	4	8.5%	3	\$43.23
Radiation Therapists	42	48	6	13.9%	3	\$32.35
Postmasters & Mail Superintendents	39	31	(8)	(21.5%)	3	\$36.29
Computer & Information Research Scientists	36	39	3	8.2%	3	\$45.12
Air Traffic Controllers	35	34	(1)	(2.7%)	3	\$15.35
Biochemists & Biophysicists	32	34	2	4.7%	3	\$43.07
Bioengineers & Biomedical Engineers	32	34	2	6.2%	3	\$39.53
Electronic Equipment Installers & Repairers, Motor Vehicles	32	24	(9)	(27.0%)	3	\$16.79
Fashion Designers	29	31	1	4.8%	3	\$26.40
Forging Machine Setters, Operators, & Tenders, Metal & Plastic	28	27	(0)	0.0%	3	\$20.82
Tapers	27	28	1	3.9%	3	\$23.26

<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>CHANGE</b>	<b>% CHANGE</b>	<b>ANNUAL JOB OPENINGS</b>	<b>MEDIAN HOURLY WAGE</b>
Rail Yard Engineers, Dinkey Operators, & Hostlers	27	26	(0)	0.0%	3	\$21.71
Commercial Divers	26	26	0	0.0%	3	\$23.59
Materials Scientists	25	26	2	6.8%	3	\$52.54
Signal & Track Switch Repairers	24	28	4	15.3%	3	\$31.96
Historians	24	25	1	4.7%	3	\$11.95
Engine & Other Machine Assemblers	24	23	(1)	(3.6%)	3	\$35.69
Camera & Photographic Equipment Repairers	23	25	2	7.6%	3	\$19.70
Shampooers	22	27	5	22.0%	3	\$8.28
Artists & Related Workers, All Other	22	25	3	11.6%	3	\$16.77
Anthropologists & Archeologists	22	22	0	0.0%	3	\$15.99
Flight Attendants	22	20	(2)	(9.0%)	3	\$22.60
Stonemasons	21	26	5	26.1%	3	\$15.76
Food Scientists & Technologists	21	25	4	21.5%	3	\$30.34
Radio, Cellular, & Tower Equipment Installers & Repairs	21	25	4	17.6%	3	\$26.94
Textile, Apparel, & Furnishings Workers, All Other	21	22	1	6.7%	3	\$14.36
Agents & Business Managers of Artists, Performers, & Athletes	20	26	6	29.0%	3	\$18.90
Film & Video Editors	18	29	11	58.7%	3	\$20.11
Food & Tobacco Roasting, Baking, & Drying Machine Operators & Tenders	16	18	2	10.0%	3	\$11.57
Athletes & Sports Competitors	15	21	5	34.5%	3	\$19.67
Etchers & Engravers	15	19	4	26.5%	3	\$11.00
Costume Attendants	14	12	(2)	(10.9%)	3	\$19.51
Labor Relations Specialists	12	24	11	89.8%	3	\$15.30
General Internal Medicine Physicians	58	63	5	8.8%	2	\$132.82
Surgeons, Except Ophthalmologists	57	61	4	7.9%	2	\$18.05
Anesthesiologists	42	48	6	13.8%	2	\$218.89
Podiatrists	35	36	1	1.5%	2	\$14.80
Economists	27	28	2	6.0%	2	\$52.04
Physicists	26	27	1	4.0%	2	\$68.23
Actuaries	25	27	2	8.5%	2	\$50.16
Insurance Appraisers, Auto Damage	24	20	(4)	(17.1%)	2	\$24.34
Hearing Aid Specialists	22	27	5	20.8%	2	\$23.28



SOC TITLE	2020 JOBS	2030 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Political Scientists	19	20	1	2.9%	2	\$23.86
Power Distributors & Dispatchers	19	17	(3)	(14.3%)	2	\$26.29
Rolling Machine Setters, Operators, & Tenders, Metal & Plastic	18	17	(1)	(6.9%)	2	\$20.91
Zoologists & Wildlife Biologists	16	16	0	0.0%	2	\$32.91
Tool Grinders, Filers, & Sharpeners	15	16	1	6.1%	2	\$17.47
Logging Workers, All Other	15	6	(9)	(60.5%)	2	\$12.10
Musical Instrument Repairers & Tuners	14	15	0	0.0%	2	\$13.66
Aerospace Engineering & Operations Technologists & Technicians	13	16	3	25.1%	2	\$33.41
Nuclear Technicians	10	17	7	68.4%	2	\$41.89
Athletic Trainers	10	17	7	70.5%	2	\$21.09
Broadcast Technicians	10	14	4	42.2%	2	\$18.15
Dancers	10	12	2	17.1%	2	\$15.14
Mechanical Door Repairers	9	17	7	79.3%	2	\$19.97
Tire Builders	5	16	11	219.1%	2	\$23.35
Dentists, All Other Specialists	35	37	2	6.6%	1	\$116.65
Obstetricians & Gynecologists	17	21	3	18.5%	1	\$105.34
Aerospace Engineers	17	18	1	8.2%	1	\$54.46
Transit & Railroad Police	15	17	2	10.0%	1	\$31.08
Exercise Physiologists	14	17	2	14.5%	1	\$25.04
Aircraft Cargo Handling Supervisors	13	12	(1)	(5.1%)	1	\$32.27
Floor Sanders & Finishers	13	11	(2)	(14.9%)	1	\$16.64
Mining & Geological Engineers, Including Mining Safety Engineers	12	13	1	7.2%	1	\$45.36
Textile Cutting Machine Setters, Operators, & Tenders	12	13	1	7.1%	1	\$12.87
Watch & Clock Repairers	12	11	(1)	(9.6%)	1	\$16.56
Shoe & Leather Workers & Repairers	12	11	(1)	(8.7%)	1	\$12.24
Parking Enforcement Workers	12	9	(3)	(27.0%)	1	\$14.76
Layout Workers, Metal & Plastic	11	10	(1)	(5.8%)	1	\$29.53
Motorboat Operators	11	10	(0)	0.0%	1	\$25.83
Paperhangers	11	9	(1)	(12.2%)	1	\$19.14
Audiologists	10	17	7	67.9%	1	\$29.03
Painting, Coating, & Decorating Workers	10	11	1	6.9%	1	\$13.24



<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>CHANGE</b>	<b>% CHANGE</b>	<b>ANNUAL JOB OPENINGS</b>	<b>MEDIAN HOURLY WAGE</b>
Rail Transportation Workers, All Other	10	10	0	0.0%	1	\$22.68
Sewers, Hand	10	10	0	0.0%	1	\$8.94
Hoist & Winch Operators	10	9	(1)	(6.8%)	1	\$13.36
Forest Fire Inspectors & Prevention Specialists	9	11	2	18.0%	1	\$18.04
Automotive Glass Installers & Repairers	9	11	2	18.6%	1	\$11.72
Judges, Magistrate Judges, & Magistrates	9	11	3	28.5%	1	\$8.16
Shoe Machine Operators & Tenders	9	9	0	0.0%	1	\$15.87
Makeup Artists, Theatrical & Performance	9	9	0	0.0%	1	\$14.36
Foundry Mold & Coremakers	9	7	(2)	(18.2%)	1	\$18.56
Proofreaders & Copy Markers	9	7	(2)	(18.7%)	1	\$16.81
Pourers & Casters, Metal	8	9	1	12.6%	1	\$17.53
Industrial-Organizational Psychologists	8	7	(1)	(12.9%)	1	\$28.27
Special Education Teachers, Preschool	7	10	3	34.7%	1	\$26.01
Textile Knitting & Weaving Machine Setters, Operators, & Tenders	7	10	3	44.3%	1	\$13.67
Lathe & Turning Machine Tool Setters, Operators, & Tenders, Metal & Plastic	7	9	2	28.9%	1	\$21.78
Cooling & Freezing Equipment Operators & Tenders	7	7	0	0.0%	1	\$16.60
Cooks, Private Household	6	7	1	15.3%	1	\$18.00
Animal Scientists	6	6	0	0.0%	1	\$25.96
Archivists	6	6	0	0.0%	1	\$21.46
Photographic Process Workers & Processing Machine Operators	6	6	0	0.0%	1	\$15.34
Desktop Publishers	6	3	(3)	(47.0%)	1	\$12.36
Medical Appliance Technicians	5	8	3	49.9%	1	\$18.82
Nurse Midwives	5	7	2	40.3%	1	\$41.69
Statistical Assistants	5	7	2	30.5%	1	\$24.31
Metal-Refining Furnace Operators & Tenders	4	9	5	109.0%	1	\$23.94
Terrazzo Workers & Finishers	4	5	0	0.0%	1	\$22.33
Fallers	4	4	0	0.0%	1	\$19.05
Rotary Drill Operators, Oil & Gas	3	5	3	101.2%	1	\$21.66
Animal Breeders	2	3	1	46.5%	1	\$19.79
Arbitrators, Mediators, & Conciliators	7	7	0	0.0%	0	\$29.70



<b>SOC TITLE</b>	<b>2020 JOBS</b>	<b>2030 JOBS</b>	<b>CHANGE</b>	<b>% CHANGE</b>	<b>ANNUAL JOB OPENINGS</b>	<b>MEDIAN HOURLY WAGE</b>
Manufactured Building & Mobile Home Installers	6	5	(1)	(14.5%)	0	\$15.96
Astronomers	4	4	0	0.0%	0	\$49.58
Genetic Counselors	3	4	1	20.9%	0	\$35.47
Museum Technicians & Conservators	3	4	2	59.4%	0	\$12.01
Gas Compressor & Gas Pumping Station Operators	3	3	0	0.0%	0	\$32.35
Epidemiologists	3	3	0	0.0%	0	\$23.88
Cutters & Trimmers, Hand	3	3	0	0.0%	0	\$13.19
Model Makers, Wood	2	4	1	42.9%	0	\$17.08
Mathematicians	2	3	1	36.3%	0	\$45.31
Model Makers, Metal & Plastic	2	3	1	39.9%	0	\$29.63
Textile Bleaching & Dyeing Machine Operators & Tenders	2	3	1	26.2%	0	\$15.64
Orthodontists	2	2	0	0.0%	0	\$124.91
Patternmakers, Metal & Plastic	2	2	0	0.0%	0	\$24.68
Fabric & Apparel Patternmakers	2	2	0	0.0%	0	\$19.50
Semiconductor Processing Technicians	2	2	0	0.0%	0	\$19.48
Oral & Maxillofacial Surgeons	2	1	(1)	(55.3%)	0	\$139.27
Loading & Moving Machine Operators, Underground Mining	2	1	(0)	0.0%	0	\$22.64
Life Scientists, All Other	1	3	1	98.2%	0	\$27.20
Administrative Law Judges, Adjudicators, & Hearing Officers	1	2	1	147.2%	0	\$26.94
Prosthodontists	1	1	0	0.0%	0	\$94.30
Agricultural Engineers	1	1	0	0.0%	0	\$34.93
Patternmakers, Wood	1	1	0	0.0%	0	\$17.05
Log Graders & Scalers	0	2	1	289.1%	0	\$11.14
Geographers	0	0	0	0.0%	0	\$32.32
Farm Labor Contractors	0	0	0	0.0%	0	\$29.34
Derrick Operators, Oil & Gas	0	0	0	0.0%	0	\$26.74
Refractory Materials Repairers, Except Brickmasons	0	0	0	0.0%	0	\$18.62
Roof Bolters, Mining	0	0	0	0.0%	0	\$0.00

Source: Employees & Self-Employed 2020.4.



## APPENDIX 7: Unemployment

Data on unemployment give researchers an idea of where skills mismatches may exist in the region. Unemployment data can also provide important context when identifying the training programs that are best suited to transitioning unemployed workers into in-demand occupations.

The tables and figures present the number of people unemployed by two-digit industry sector and by two-digit occupational group<sup>23</sup> in the RMLA Region 2. Data reflect August 2020 and follow the same methodology used by federal statistical agencies to determine the number of workers in an industry or occupation who are not currently employed. The unemployment rate is not provided because it is difficult to accurately determine the size of the labor force in an industry or occupation every month. Rather than the unemployment rate, the percent of all unemployed workers in the region, state, and U.S. are provided.

Table A7.1: Unemployed Workers by Industry Sector in the RMLA Region 2 with State and National Comparisons

NAICS CODE	NAICS TITLE	REGION UNEMPLOYED	REGION % UNEMPLOYED	STATE % UNEMPLOYED	U.S. % UNEMPLOYED
72	Accommodation & Food Services	7,484	20%	24%	16%
23	Construction	5,350	14%	10%	5%
44	Retail Trade	3,903	11%	11%	10%
62	Health Care & Social Assistance	3,375	9%	11%	10%
99	No Previous Work Experience/Unspecified	3,088	8%	4%	10%
56	Administrative & Support & Waste Management & Remediation Services	2,769	7%	8%	9%
31	Manufacturing	2,247	6%	6%	9%
48	Transportation & Warehousing	1,336	4%	4%	5%
81	Other Services (except Public Administration)	1,303	4%	4%	4%
54	Professional, Scientific, & Technical Services	1,030	3%	3%	4%
71	Arts, Entertainment, & Recreation	1,028	3%	3%	3%
42	Wholesale Trade	887	2%	2%	3%
61	Educational Services	800	2%	3%	4%

23 Unemployment by industry data is only available at the two-digit level whereas the industry data reported elsewhere in this analysis is at the three-digit level.

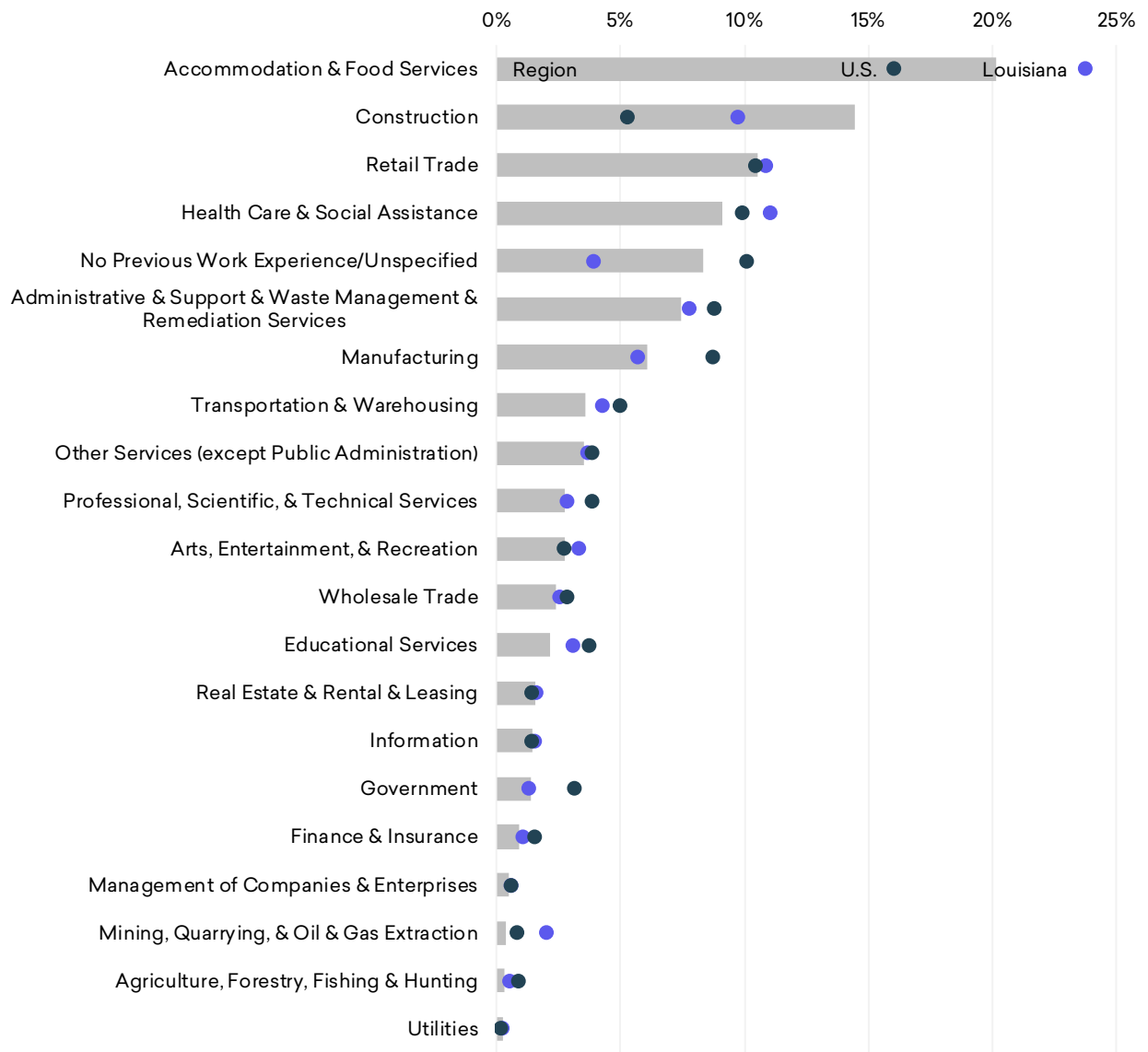
<b>NAICS CODE</b>	<b>NAICS TITLE</b>	<b>REGION UNEMPLOYED</b>	<b>REGION % UNEMPLOYED</b>	<b>STATE % UNEMPLOYED</b>	<b>U.S. % UNEMPLOYED</b>
53	Real Estate & Rental & Leasing	576	2%	2%	1%
51	Information	530	1%	1%	1%
90	Government	517	1%	1%	3%
52	Finance & Insurance	340	1%	1%	1%
55	Management of Companies & Enterprises	185	0%	1%	1%
21	Mining, Quarrying, & Oil & Gas Extraction	138	0%	2%	1%
11	Agriculture, Forestry, Fishing & Hunting	126	0%	0%	1%
22	Utilities	87	0%	0%	0%

Source: Emsi Total Unemployment (August 2020).





Figure A7.1: Unemployed Workers by Industry Sector in the RMLA Region 2 with State and National Comparisons



Source: Emsi Total Unemployment (August 2020).



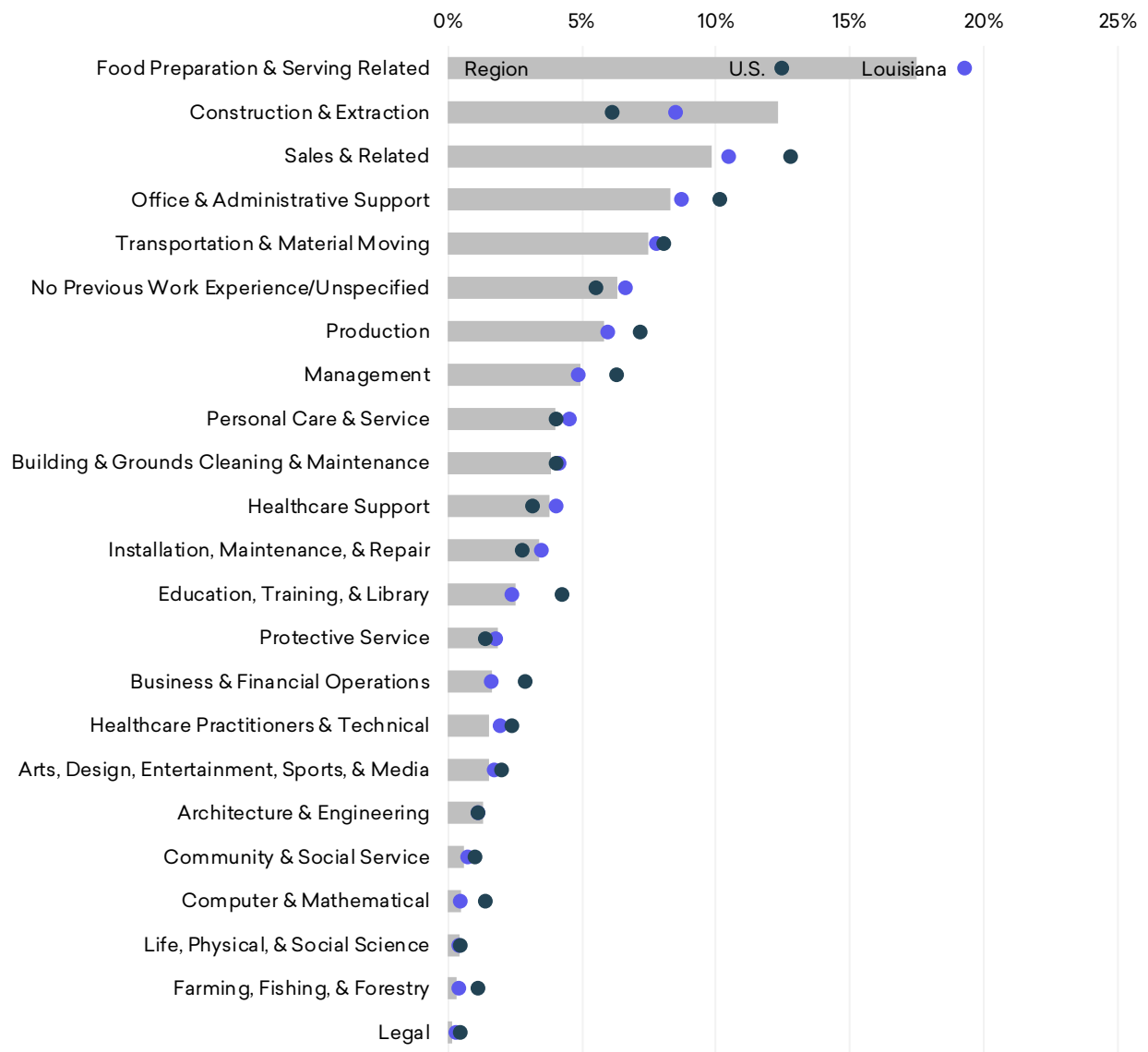
Table A7.2: Unemployed Workers by Occupational Group in the RMLA Region 2 with State and National Comparisons

<b>SOC CODE</b>	<b>SOC TITLE</b>	<b>REGION UNEMPLOYED</b>	<b>REGION % UNEMPLOYED</b>	<b>STATE % UNEMPLOYED</b>	<b>U.S. % UNEMPLOYED</b>
35-0000	Food Preparation & Serving Related	6,487	17%	19%	12%
47-0000	Construction & Extraction	4,568	12%	8%	6%
41-0000	Sales & Related	3,647	10%	10%	13%
43-0000	Office & Administrative Support	3,085	8%	9%	10%
53-0000	Transportation & Material Moving	2,779	7%	8%	8%
99-0000	No Previous Work Experience/Unspecified	2,345	6%	7%	5%
51-0000	Production	2,166	6%	6%	7%
11-0000	Management	1,833	5%	5%	6%
39-0000	Personal Care & Service	1,495	4%	5%	4%
37-0000	Building & Grounds Cleaning & Maintenance	1,423	4%	4%	4%
31-0000	Healthcare Support	1,402	4%	4%	3%
49-0000	Installation, Maintenance, & Repair	1,257	3%	3%	3%
25-0000	Education, Training, & Library	943	3%	2%	4%
33-0000	Protective Service	682	2%	2%	1%
13-0000	Business & Financial Operations	614	2%	2%	3%
29-0000	Healthcare Practitioners & Technical	575	2%	2%	2%
27-0000	Arts, Design, Entertainment, Sports, & Media	558	2%	2%	2%
17-0000	Architecture & Engineering	486	1%	1%	1%
21-0000	Community & Social Service	228	1%	1%	1%
15-0000	Computer & Mathematical	177	0%	0%	1%
19-0000	Life, Physical, & Social Science	159	0%	0%	0%
45-0000	Farming, Fishing, & Forestry	112	0%	0%	1%
23-0000	Legal	66	0%	0%	0%

Source: Emsi Total Unemployment (August 2020).



Figure A7.2: Unemployed Workers by Occupational Group in the RMLA Region 2 with State and National Comparisons



Source: Emsi Total Unemployment (August 2020).



## APPENDIX 8: Living Wage

As shown in the following tables, the living wage is the hourly rate that an individual must earn to support his or her family as a sole income provider working full-time or 2,080 hours annually. Part-time is defined as less than 35 hours per week of work. State minimum wage rates are the same for all individuals, regardless of the number of dependents in the household. Values are reported per adult in the household. The poverty rate is typically reported as gross annual income and has been adjusted to an hourly wage rate.

Table A8.1: Living Wage Calculations for the RMLA Region 2

ADULTS IN HOUSEHOLD	CHILDREN IN HOUSEHOLD	LIVING WAGE	POVERTY WAGE	MINIMUM WAGE
One adult	No children	\$11.39	\$5.84	\$7.25
	One child	\$23.64	\$7.91	-
	Two children	\$27.14	\$9.99	-
	Three children	\$32.84	\$12.07	-
Two adults, one working	No children	\$18.84	\$7.91	-
	One child	\$22.57	\$9.99	-
	Two children	\$25.10	\$12.07	-
	Three children	\$27.53	\$14.14	-
Two adults	No children	\$9.42	\$3.96	-
	One child	\$12.94	\$5.00	-
	Two children	\$14.90	\$6.03	-
	Three children	\$16.82	\$7.07	-

Source: Dr. Amy K. Glasmeier and the Massachusetts Institute of Technology, <http://livingwage.mit.edu>. Minimum wage provided by the U.S. Department of Labor.



Table A8.2: Living Wage Calculations for the State

ADULTS IN HOUSEHOLD	CHILDREN IN HOUSEHOLD	LIVING WAGE	POVERTY WAGE	MINIMUM WAGE
One adult	No children	\$11.28	\$5.84	\$7.25
	One child	\$23.48	\$7.91	-
	Two children	\$26.98	\$9.99	-
	Three children	\$32.76	\$12.07	-
Two adults, one working	No children	\$18.57	\$7.91	-
	One child	\$22.41	\$9.99	-
	Two children	\$24.94	\$12.07	-
	Three children	\$27.44	\$14.14	-
Two adults	No children	\$9.29	\$3.96	-
	One child	\$12.86	\$5.00	-
	Two children	\$14.82	\$6.03	-
	Three children	\$16.78	\$7.07	-

Source: Dr. Amy K. Glasmeier and the Massachusetts Institute of Technology, <http://livingwage.mit.edu>. Minimum wage provided by the U.S. Department of Labor.

