







The Economic Development Alliance for Brazoria County

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

Main Report: Northern Brazoria County

July 2023

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Lightcast provides colleges, universities, and other entities with labor market data that helps create better outcomes for students, businesses, and communities. 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. Hundreds of institutions use Lightcast to align programs with regional needs, drive enrollment, connect students with in-demand careers, track their alumni's employment outcomes, and demonstrate their institution's economic impact on their region. Visit lightcast.io/solutions/education to learn more or connect with us.

Executive Summary

The Economic Development Alliance for Brazoria County (The Alliance) is a membership-based organization created as a resource and advocate for the economic development and diversification of Brazoria County. To further its goal of providing the county with well-trained and well-educated residents, The Alliance continually pursues 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 of Brazoria County as they seek to adapt their program offerings to the requirements of an ever-changing workforce. The Alliance partnered with Lightcast, 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>HIGH DEMAND, LOW SUPPLY</p> <p><i>How can we expand these program opportunities?</i></p> <p>General Office Occupations & Clerical Services (CERT) Business Administration & Management (CERT, ASSOC, & BACH) Culinary Arts/Chef Training (CERT & ASSOC) Administrative Assistant & Secretarial Science (CERT & ASSOC) Elementary Education & Teaching (T-T)</p>	<p>HIGH DEMAND, HIGH SUPPLY*</p> <p><i>Can we maintain focus on program quality & student success?</i></p> <p>Nursing Assistant/Aide & Patient Care Assistant/Aide (CERT) Welding Technology/Welder (CERT) Business/Commerce (ASSOC)</p>
<p>LOW DEMAND, LOW SUPPLY</p> <p><i>Should we reevaluate these programs?</i></p> <p>Prepress/Desktop Publishing & Digital Imaging Design (CERT) Electroneurodiagnostic/Electroencephalographic Technology/Technologist (CERT) Criminalistics & Criminal Science (CERT) Music (ASSOC) Child Care & Support Services Management (ASSOC)</p>	<p>LOW DEMAND, HIGH SUPPLY</p> <p><i>Are we connecting these programs to opportunities outside the region?</i></p> <p>Chemical Technology/Technician (CERT & ASSOC) Registered Nursing/Registered Nurse (ASSOC)</p>

Source: Lightcast program demand gap model.

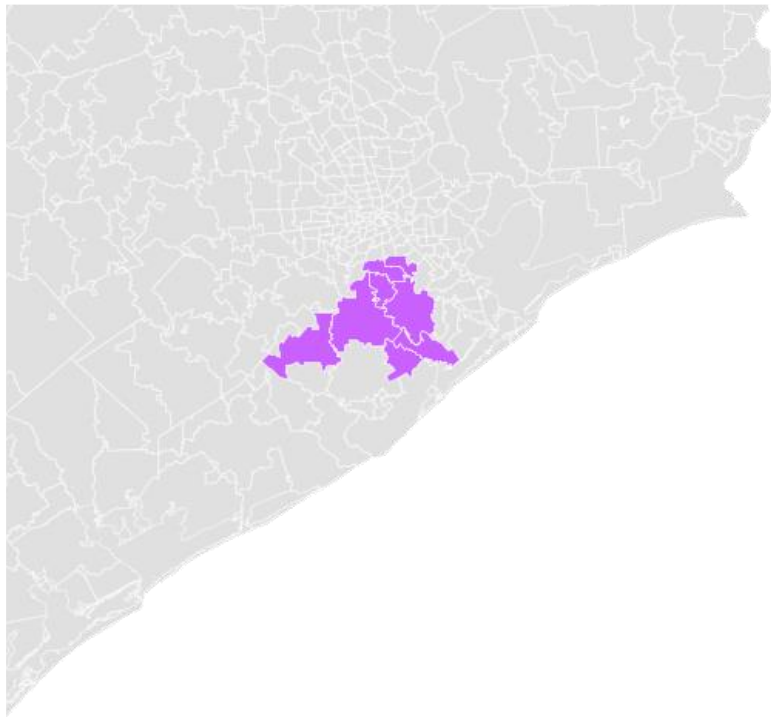
*The supply of the 'High Demand, High Supply' programs is not meeting demand. See Chapter 3 for more information.



INTRODUCTION

For the purposes of this study, a region called Northern Brazoria County¹ is analyzed. This report outlines the region's economy and uses the region's average annual projected job openings between 2022 and 2032 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 Northern Brazoria County



Source: Lightcast Analyst. Region provided by BC.

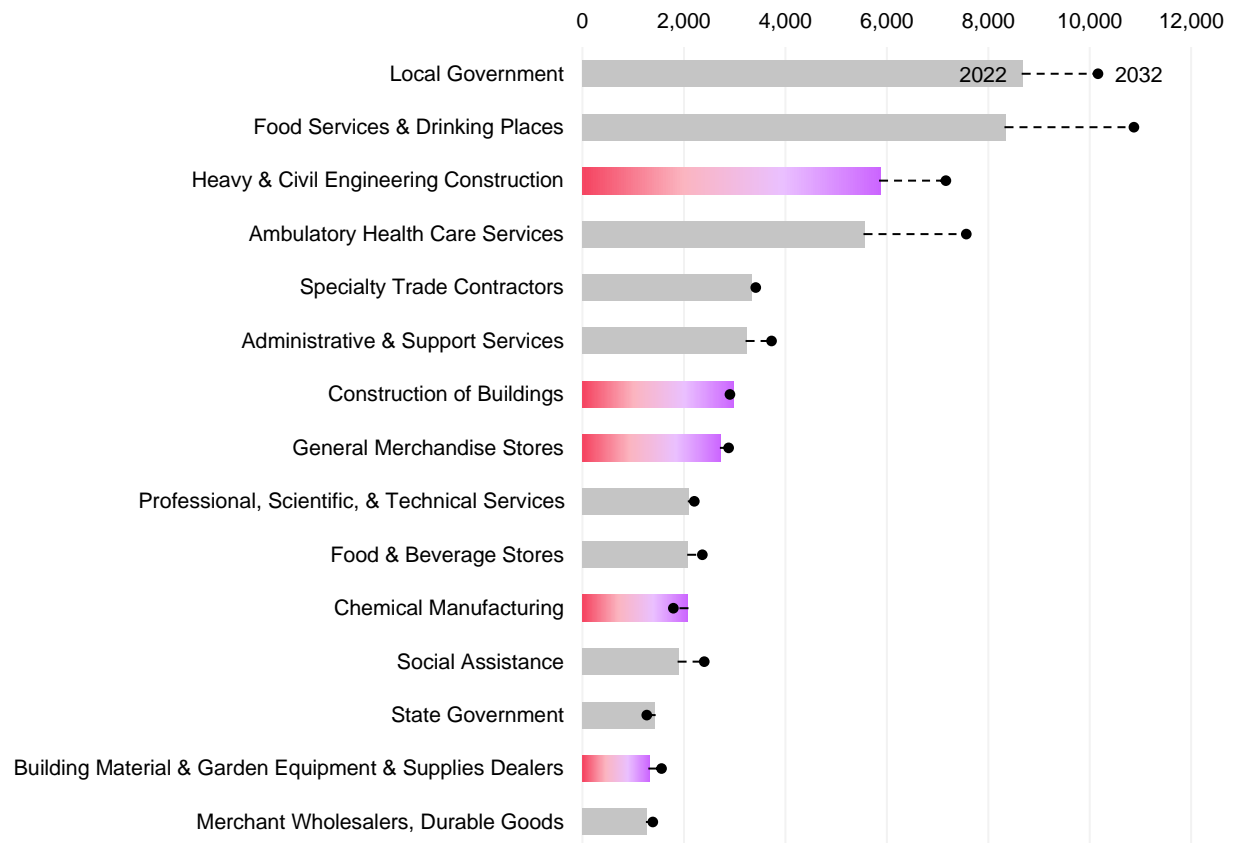
¹ Northern Brazoria County consists of the following 10 ZIP codes in Brazoria County: 77431, 77512, 77534, 77577, 77578, 77581, 77584, 77588, 77511, and 77583.



ECONOMIC OVERVIEW

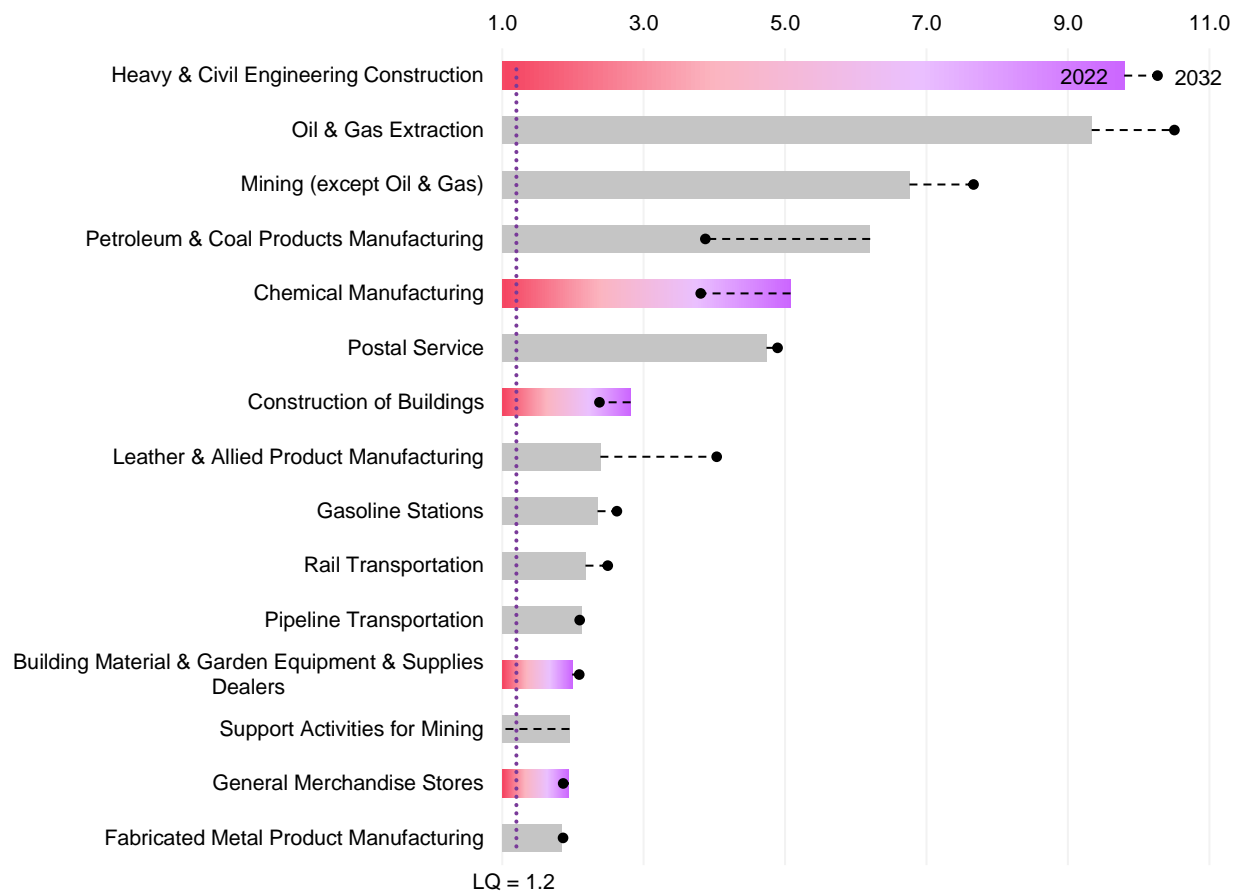
Figure 2 displays the top industry subsectors in terms of employment in Northern Brazoria County, and Figure 3 shows the top industry subsectors in terms of employment concentrations, referred to as location quotients (LQs). High LQs (usually anything greater than 1.2) are an indication that the region 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 Northern Brazoria County by Jobs



Source: Employees & Self-Employed 2023.1.

Figure 3: Top Industry Subsectors in Northern Brazoria County by Employment Concentration (LQ)



Source: Employees & Self-Employed 2023.1.

Note the highlighted bars in the figures. Across all of Northern Brazoria County'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 colleges insight into potential employment opportunities for its students. These industry subsectors, ranked by 2022 jobs, are:

- Heavy & Civil Engineering Construction;
- Construction of Buildings;
- General Merchandise Stores;
- Chemical Manufacturing; and
- Building Material & Garden Equipment & Supplies Dealers.



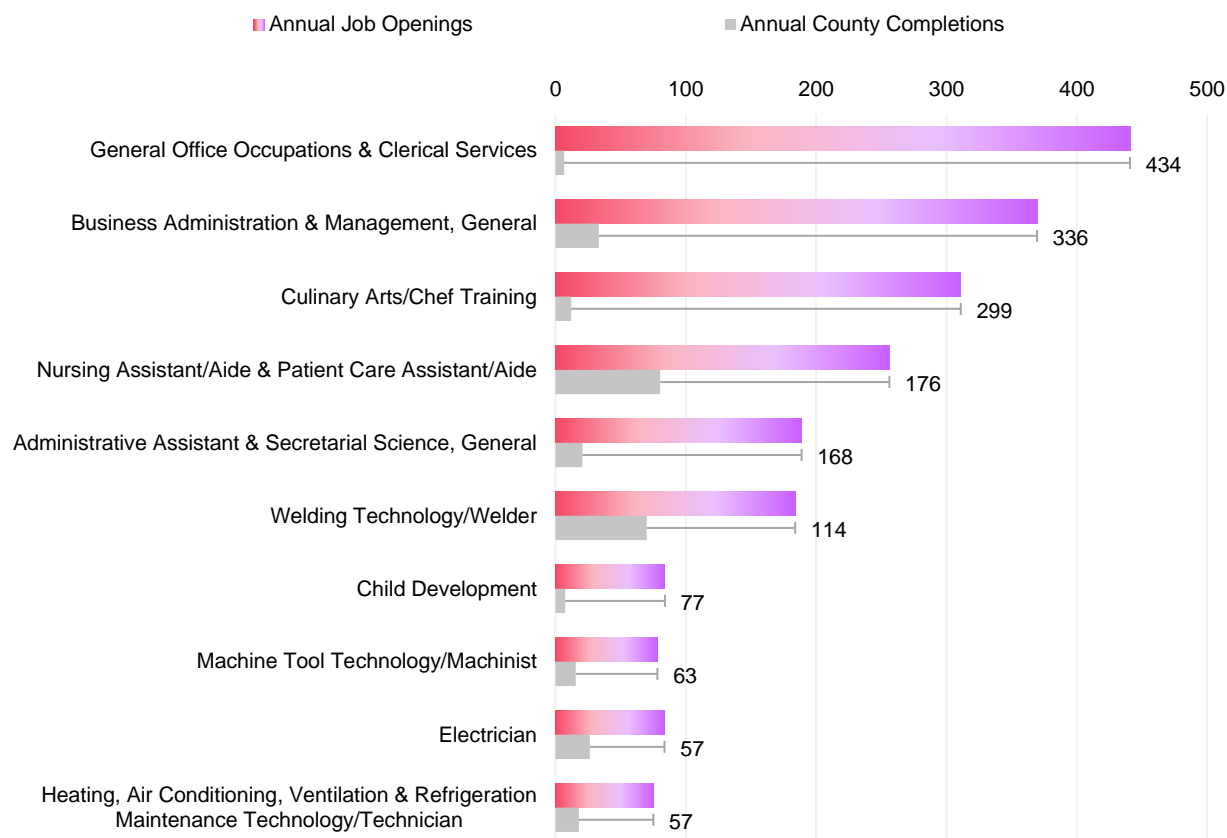
PROGRAM DEMAND GAP ANALYSIS

The program demand gap analysis provides results across all of the certificate, and degree level programs offered in the region, which have been classified by their formal CIP code.² 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 50 is considered beyond normal labor market fluctuations and therefore an area of consideration for program development.

The colleges of Northern Brazoria County offer 33 certificate level programs, 11 of which have a significant gap above the 50-openings level of significance as shown in Figure 4. One program at this level has a significant surplus of completers. With regards to specific programmatic results, the following certificate level programs should be considered for expansion due to their gap and median hourly wage: Business Administration & Management, General; Welding Technology/Welder; Machine Tool Technology/Machinist; Electrician; Heating, Air Conditioning, Ventilation & Refrigeration Maintenance Technology/Technician; and Construction Engineering Technology/Technician. The three largest certificate level programs in terms of average annual completions are Chemical Technology/Technician, Nursing Assistant/Aide & Patient Care Assistant/Aide, and Welding Technology/Welder. Despite Chemical Manufacturing being a key industry subsector in the region, Chemical Technology/Technician has a significant surplus of 179 completers. This surplus coupled with the slight decline in employment projected over the next ten years for the industry suggest that colleges maintain communication with major regional employers to ensure students are finding employment and employers are well-staffed. The Nursing Assistant/Aide & Patient Care Assistant/Aide program has a significant gap, but the median hourly wage is below the living wage for two adults (both working) and two children in Brazoria County. Colleges should consider how this program and subsequent work experience can be used as a stepping stone by graduates to higher wage occupations along their career path.

² 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).

Figure 4: Top 10 Certificate Level Gaps

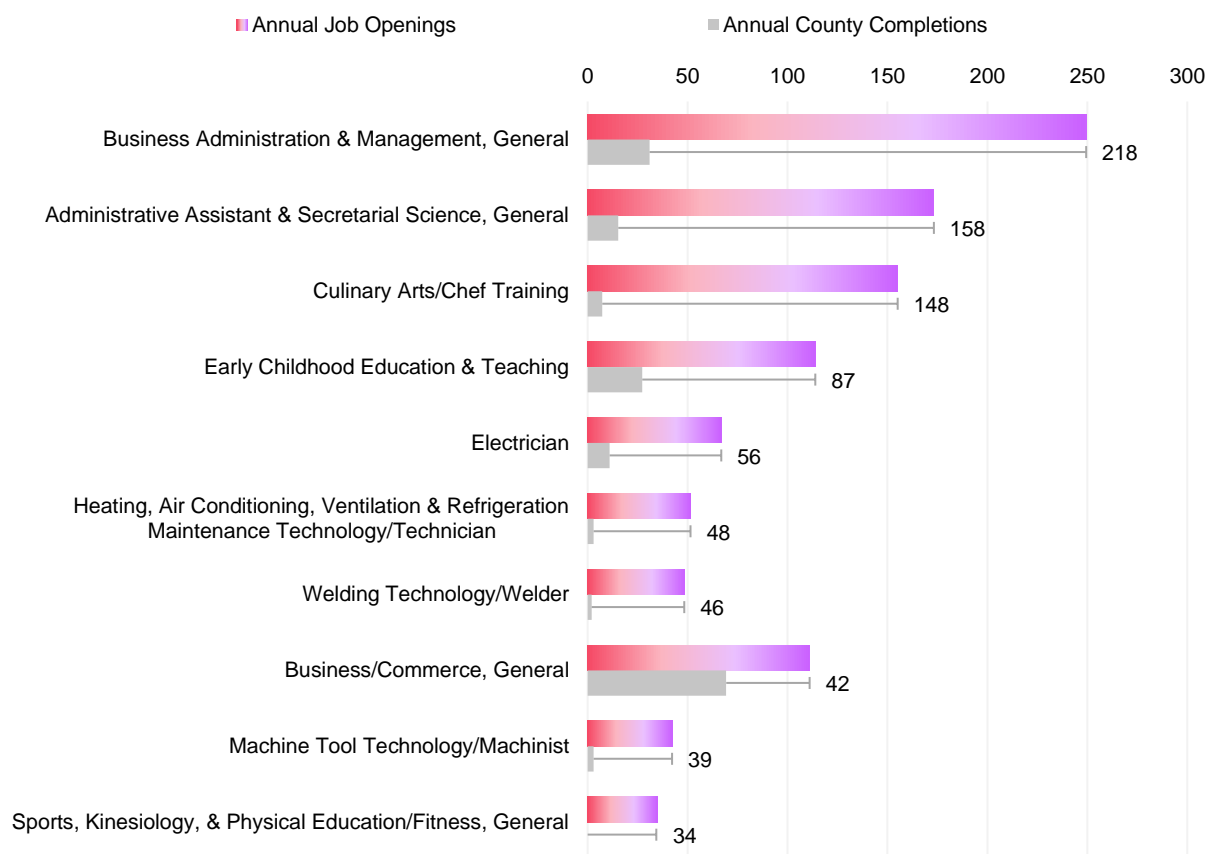


Source: Lightcast program demand gap model.

The colleges of Northern Brazoria County offer 49 associate degree level programs, five of which have a significant gap above the 50-openings level of significance (Figure 5). Two programs at this award level have a significant surplus of completions. With regards to specific programmatic results, the following associate degree programs should be considered for expansion due to their gap and median hourly wage: Business Administration & Management, General and Electrician. The three largest associate degree programs in terms of average annual completions are Registered Nursing/Registered Nurse, Chemical Technology/Technician, and Business/Commerce, General. Both the Registered Nursing/Registered Nurse and Chemical Technology/Technician programs have a significant surplus of completions. Chemical Technology/Technician was discussed in the certificate level analysis. There are more job openings for the Registered Nursing/Registered Nurse program at the bachelor's degree level and these program completers are likely finding employment outside Northern Brazoria County. While not a significant gap, the Business/Commerce, General program has a median hourly wage of \$40.76, the second highest of all the associate degree programs offered in the region. Business and administration/management programs can lead to leadership positions in a variety of industries; colleges are advised to consider the

industry mix of their service region to align curriculum to meet the needs of the region and train students most effectively to be competitive in the local labor market.

Figure 5: Top 10 Associate Degree Level Gaps



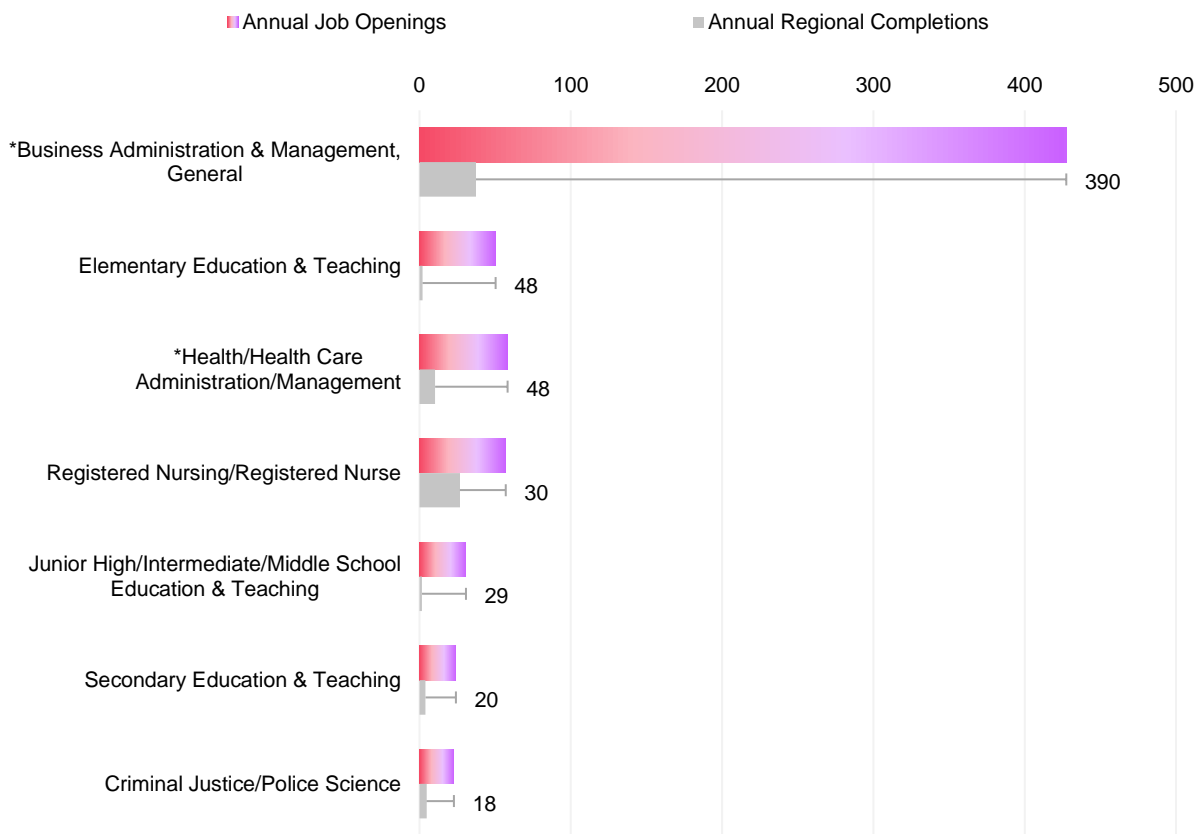
Source: Lightcast program demand gap model.

Brazosport College offers five transfer-track degree programs.³ 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. Brazosport College's two bachelor's degree programs are also analyzed in this section. Of these programs, one has a significant gap above the 50-openings level of significance, as shown in Figure 6. With regards to specific programmatic results, the following transfer-track degree programs should be considered for expansion due to their gap and median hourly wage: Business Administration & Management, General; Elementary Education & Teaching; and Health/Health Care Administration/Management. At Brazosport College the three education/teaching transfer-track

³ Brazosport College selected five associate degree programs from the college's offerings to be analyzed as transfer-track programs in the sister study to this report concerning Southern Brazoria County. None of Alvin Community College's associate degree offerings were assumed to be transfer-track programs in this report.

programs are offered as one degree. Considering the job openings and completions together, the combined education/teaching program has a significant gap, which further highlights this program as an opportunity for expansion. The three largest transfer-track degree programs in terms of average annual completions are Business Administration & Management, General; Registered Nursing/Registered Nurse; and Health/Health Care Administration/Management. All three programs have a gap at this level and a median hourly wage of over \$26.00. The Business Administration & Management, General and Health/Health Care Administration/Management programs are recommended for expansion given their large gaps and high median hourly wages. A transfer-track program expansion requires a close examination of the process by which a student transfers to a four-year institution. For these programs to be successful these students must be able to transfer their credits with ease.

Figure 6: Transfer-Track and Bachelor's Degree Level Gaps



*These programs award completers with a bachelor's degree. All other programs in this section of the analysis award completers with an associate degree, but the demand for jobs considers a bachelor's degree level of education.
Source: Lightcast program demand gap model.

A liberal arts program expansion is not recommended at this time, but college administrators should be aware that students can find success in a variety of business-related occupations. Using Lightcast'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 Northern Brazoria County. The colleges' liberal arts programs, therefore, serve as a starting point to students' career goals beyond an associate degree level of education.



PROGRAM ADDITIONS

Twenty-three certificate level programmatic areas of opportunity have been identified in the program demand gap analysis, many of which are related to installation, maintenance, & repair 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 the focus is on job openings in Northern Brazoria County or Texas. Another 10 transfer-track degree level programmatic areas of opportunity were identified in the program demand gap analysis, many of which are related to sales & related occupations. Some program additions may be 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

SOC TITLE	2022 JOBS	ANNUAL JOB OPENINGS	ANNUAL COMPL.	GAP	MEDIAN HOURLY WAGE	ED. LEVEL
Construction Laborers	2,145	145	0	145	\$16.09	CERT
Medical Assistants	512	65	0	65	\$15.93	CERT
Operating Engineers & Other Construction Equipment Operators	622	58	0	58	\$20.83	CERT
Carpenters	798	46	0	46	\$19.42	CERT
Dental Assistants	299	33	0	33	\$17.24	CERT
First-Line Supervisors of Production & Operating Workers	380	26	0	26	\$34.19	CERT
First-Line Supervisors of Transportation & Material Moving Workers, Except Aircraft Cargo Handling Supervisors	264	24	0	24	\$24.41	CERT
Inspectors, Testers, Sorters, Samplers, & Weighers	301	24	0	24	\$17.71	CERT
Mobile Heavy Equipment Mechanics, Except Engines	195	17	0	17	\$24.96	CERT
Electrical Power-Line Installers & Repairers	134	14	0	14	\$33.84	CERT
Physical Therapist Assistants	61	9	0	9	\$38.67	ASSOC
Occupational Therapy Assistants	35	6	0	6	\$40.45	ASSOC

SOC TITLE	2022 JOBS	ANNUAL JOB OPENINGS	ANNUAL COMPL.	GAP	MEDIAN HOURLY WAGE	ED. LEVEL
Dental Hygienists	92	5	0	5	\$35.13	ASSOC
Civil Engineers	208	10	0	10	\$44.90	T-T
Buyers & Purchasing Agents	167	8	0	8	\$27.78	T-T
Insurance Sales Agents	131	7	0	7	\$21.75	T-T
Training & Development Specialists	141	7	0	7	\$27.38	T-T
Real Estate Sales Agents	109	6	0	6	\$16.84	T-T

SOC refers to the Standard Occupational Classification system used to classify occupations. Average annual job openings represent regional data from 2022 to 2032. Numbers may not sum due to rounding.

Source: Lightcast 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 Economic Development Alliance for Brazoria County (The Alliance) partnered with Lightcast, a labor market analytics firm, serving higher education, economic and workforce development, talent acquisition, and site selection. In this report, Lightcast conducts an overview of the region's economy, provides a program demand gap analysis of the program offerings of the colleges of Northern Brazoria County, 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 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 Alliance with relevant data and information that it 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 Alliance for discussions of 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 Alliance 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 Alliance, specific implications may be considered for programs with substantial gaps or surpluses.

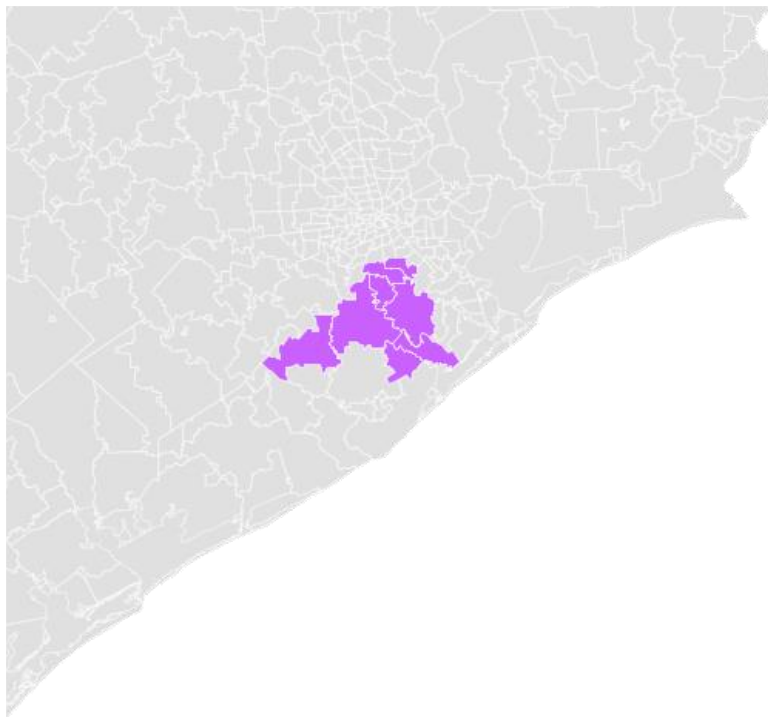
It must be noted that our analysis does have its limitations in that only the education supply pipeline is considered. This is due to data availability at the region and institutional levels. However, other sources—unemployed workers, industry trained pipelines, workers migrating to the region, and job 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 Lightcast 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 Alliance should first consider the economic structure of the region, referred to in this report as Northern Brazoria County⁴ (Figure 2.1). Identifying the driving industries within the region is an important first step for three reasons: 1) it helps The Alliance understand where colleges 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 Northern Brazoria County



Source: Lightcast Analyst. Region provided by BC.

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

⁴ Northern Brazoria County consists of the following 10 ZIP codes in Brazoria County: 77431, 77512, 77534, 77577, 77578, 77581, 77584, 77588, 77511, and 77583.

provides an overview of Northern Brazoria County'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.

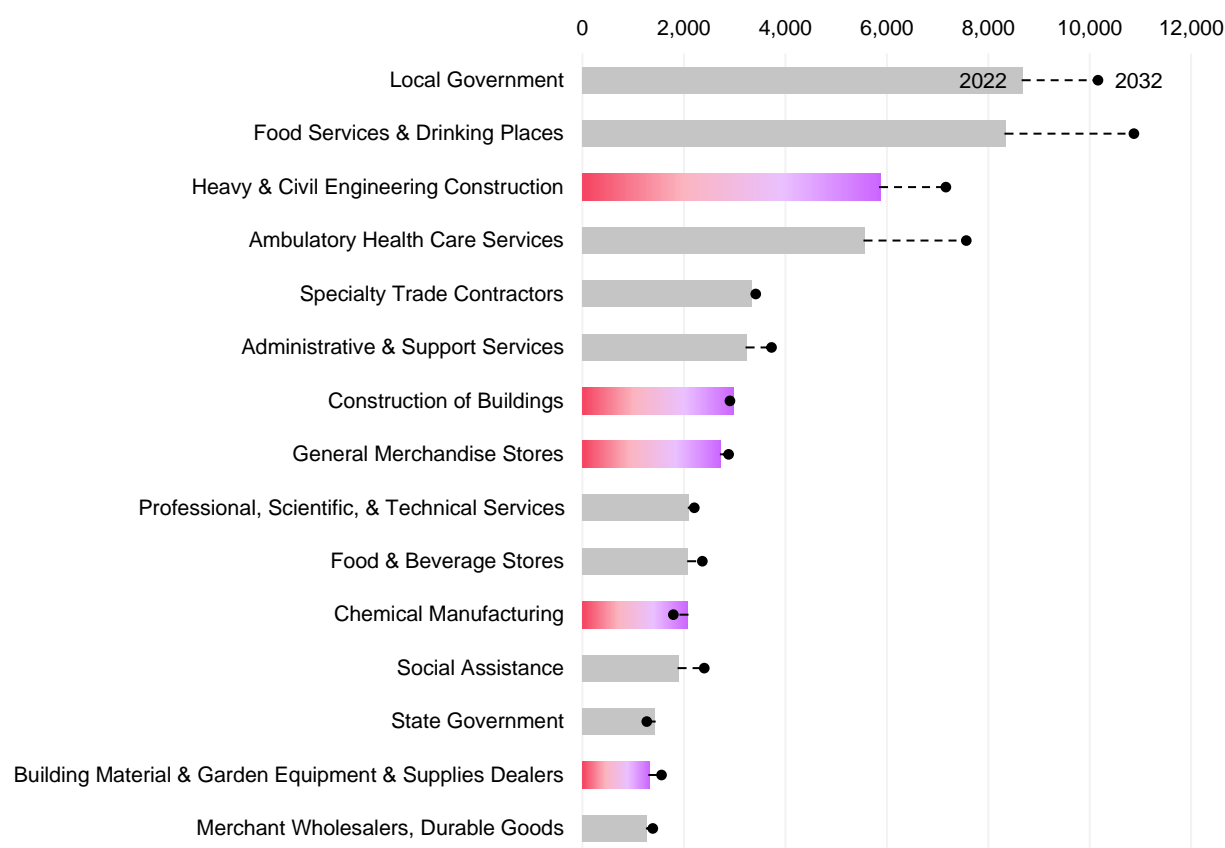
INDUSTRY COMPOSITION

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, Lightcast has aggregated industries into their three-digit NAICS codes, referred to as industry subsectors.⁵

Figure 2.2 presents the 15 largest industry subsectors in Northern Brazoria County, by their 2022 job counts and also shows the industry subsectors' projected change over the next decade. The region supported 76,040 jobs in 2022, and by 2032, it is projected to add 11,800 new jobs for a 16% job increase. As shown in the figure, Local Government is the largest employer, with 8,680 jobs in 2022. The Food Services & Drinking Places and Heavy & Civil Engineering Construction industry subsectors are the next largest, with 8,340 and 5,870 jobs in 2022, respectively. As for growth, Food Services & Drinking Places is projected to add the most jobs of the top 15 industry subsectors, with a 10-year increase of 2,530 new jobs for a 30% job growth. On the other hand, three of the top 15 industry subsectors are expected to contract between 2022 and 2032. The top two are Chemical Manufacturing and State Government

⁵ In Lightcast 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 Northern Brazoria County, 2022 and 2032



The highlighted industry subsectors are identified as key industry subsectors and further defined in the following section.
Source: Employees & Self-Employed 2023.1.

The employment concentration of Northern Brazoria County'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 Northern Brazoria County 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 Northern Brazoria County, 2022 and 2032



The highlighted industry subsectors are identified as key industry subsectors and further defined in the following section.
Source: Employees & Self-Employed 2023.1.

The industry subsectors with the 15 highest LQs in Northern Brazoria County are shown in Figure 2.3. The Heavy & Civil Engineering Construction industry subsector had the highest LQ in 2022 at 9.8. The industry subsector is expected to increase in employment concentration between 2022 and 2032 and remain among the top five industry subsectors with the largest LQs. The Oil & Gas Extraction; Mining (except Oil & Gas); and Petroleum & Coal Products Manufacturing industry subsectors also have relatively large employment concentrations, with LQs of 9.3, 6.8, and 6.2 in 2022, respectively. As for 10-year growth, Leather & Allied Product Manufacturing is projected to increase in LQ by 69% from an LQ of 2.4 to an LQ of 4, which is the largest percent increase among the top 15 industry subsectors in the figure. On the other hand, six industry subsectors are expected to drop in LQ between 2022 and 2032. Support Activities for Mining has the largest percent decrease (55%). Despite the declines, most of 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 Figure 2.2 and Figure 2.3 because they are large employers and have high LQs. Altogether, the industry subsectors represent 20% of Northern Brazoria County's jobs. These industry subsectors, in descending order of 2022 jobs, are:

- Heavy & Civil Engineering Construction;
- Construction of Buildings;
- General Merchandise Stores;
- Chemical Manufacturing; and
- Building Material & Garden Equipment & Supplies Dealers.

Their appearance in the figures provides an indication of their relative strength in Northern Brazoria County, and thus, we identified the most common occupations within the five industry subsectors, called a staffing pattern.⁶ The industry subsectors' staffing patterns provide insight into not only the region's labor market demand, but by extension, the demand for the program offerings of colleges in the region.

The **Heavy & Civil Engineering Construction** industry subsector in the region supported 5,870 jobs in 2022 and had an LQ of 9.8. It is comprised of six industries at the six-digit NAICS code level. The largest industry is the Oil & Gas Pipeline & Related Structures Construction industry, with 82% of jobs in the industry subsector. The top occupation employed by the Heavy & Civil Engineering Construction industry subsector is construction laborers, which constitutes 21% of the industry subsector's jobs. It is followed by first-line supervisors of construction trades & extraction workers (9%) and operating engineers & other construction equipment operators (7%). 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:

- electrical power-line installers & repairers (\$33.84);
- first-line supervisors of mechanics, installers, & repairers (\$31.44);
- first-line supervisors of construction trades & extraction workers (\$29.38);
- telecommunications line installers & repairers (\$28.96); and
- electricians (\$25.65).

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

- project management specialists (\$42.92);
- general & operations managers (\$42.41); and
- managers, all other (\$36.81).

⁶ 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 Lightcast's proprietary employment data.

The **Construction of Buildings** industry subsector in the region supported 2,980 jobs in 2022 and had an LQ of 2.8. It is comprised of six industries at the six-digit NAICS code level. The largest industry is the Industrial Building Construction industry, with 69% of jobs in the industry subsector. The top occupation employed by the Construction of Buildings industry subsector is construction laborers, which constitutes 16% of the industry subsector's jobs. It is followed by carpenters (11%) and construction managers (11%). 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 construction trades & extraction workers (\$29.38);
- electricians (\$25.65);
- plumbers, pipefitters, & steamfitters (\$23.92);
- structural iron & steel workers (\$21.67); and
- welders, cutters, solderers, & brazers (\$21.30).

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

- civil engineers (\$44.90);
- project management specialists (\$42.92); and
- general & operations managers (\$42.41).

The **General Merchandise Stores** industry subsector in the region supported 2,730 jobs in 2022 and had an LQ of 1.9. It is comprised of three industries at the six-digit NAICS code level. The largest industry is the Warehouse Clubs & Supercenters industry, with 51% of jobs in the industry subsector. The top occupation employed by the General Merchandise Stores industry subsector is retail salespersons, which constitutes 22% of the industry subsector's jobs. It is followed by stockers & order fillers (22%) and cashiers (19%). 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 office & administrative support workers (\$26.23);
- first-line supervisors of transportation & material moving workers, except aircraft cargo handling supervisors (\$24.41);
- first-line supervisors of retail sales workers (\$18.87);
- industrial truck & tractor operators (\$17.96); and
- pharmacy technicians (\$16.98).

The two occupations that require a bachelor's degree are:

- general & operations managers (\$42.41) and
- sales & related workers, all other (\$13.17).

The **Chemical Manufacturing** industry subsector in the region supported 2,070 jobs in 2022 and had an LQ of 5.1. It is comprised of 29 industries at the six-digit NAICS code level. The largest industry is the Petrochemical Manufacturing industry, with 78% of jobs in the industry subsector. The top occupation employed by the Chemical Manufacturing industry subsector is

chemical equipment operators & tenders, which constitutes 15% of the industry subsector's jobs. It is followed by chemical plant & system operators (9%) and first-line supervisors of production & operating workers (5%). 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:

- chemical plant & system operators (\$39.21);
- chemical equipment operators & tenders (\$38.40);
- first-line supervisors of production & operating workers (\$34.19);
- first-line supervisors of mechanics, installers, & repairers (\$31.44); and
- industrial machinery mechanics (\$26.95).

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

- chemical engineers (\$74.11);
- industrial production managers (\$58.74); and
- industrial engineers (\$46.17).

The **Building Material & Garden Equipment & Supplies Dealers** industry subsector in the region supported 1,320 jobs in 2022 and had an LQ of 2.0. It is comprised of six industries at the six-digit NAICS code level. The largest industry is the Home Centers industry, with 68% of jobs in the industry subsector. The top occupation employed by the Building Material & Garden Equipment & Supplies Dealers industry subsector is retail salespersons, which constitutes 36% of the industry subsector's jobs. It is followed by cashiers (12%) and stockers & order fillers (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 office & administrative support workers (\$26.23);
- first-line supervisors of transportation & material moving workers, except aircraft cargo handling supervisors (\$24.41);
- production, planning, & expediting clerks (\$21.44);
- heavy & tractor-trailer truck drivers (\$20.57); and
- bookkeeping, accounting, & auditing clerks (\$20.14).

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

- sales managers (\$54.38);
- general & operations managers (\$42.41); and
- sales representatives, wholesale & manufacturing, except technical & scientific products (\$26.80).

WORKFORCE COMMUTING PATTERNS

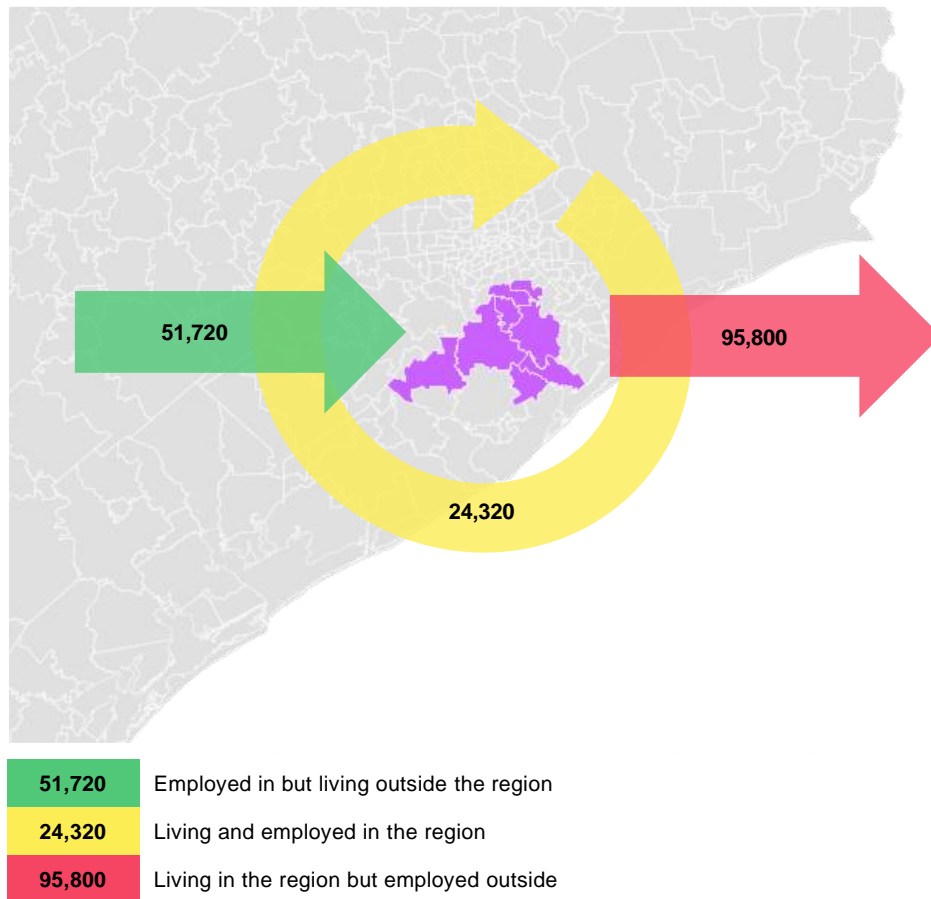
The Longitudinal Employer-Household Dynamics (LEHD) program⁷ at the U.S. Census Bureau provides information on the residential and employment locations of workers. Such data show the commuting patterns of regional employees. More specifically, the LEHD data demonstrate the extent to which employees commute to Northern Brazoria County⁸ 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 Northern Brazoria County. LEHD data identify 76,040 jobs in the region, with 24,320 jobs filled by residents and 51,720 jobs filled by people living outside the region. In addition, 95,800 jobs are held by the region's residents outside Northern Brazoria County. In other words, 95,800 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 Lightcast's complete employment data (see industry data in Appendix 2). As shown in the figure, slightly more workers out-commute than in-commute.

⁷ 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.

⁸ Workforce commuting patterns data at the county level is available in Appendix 3.

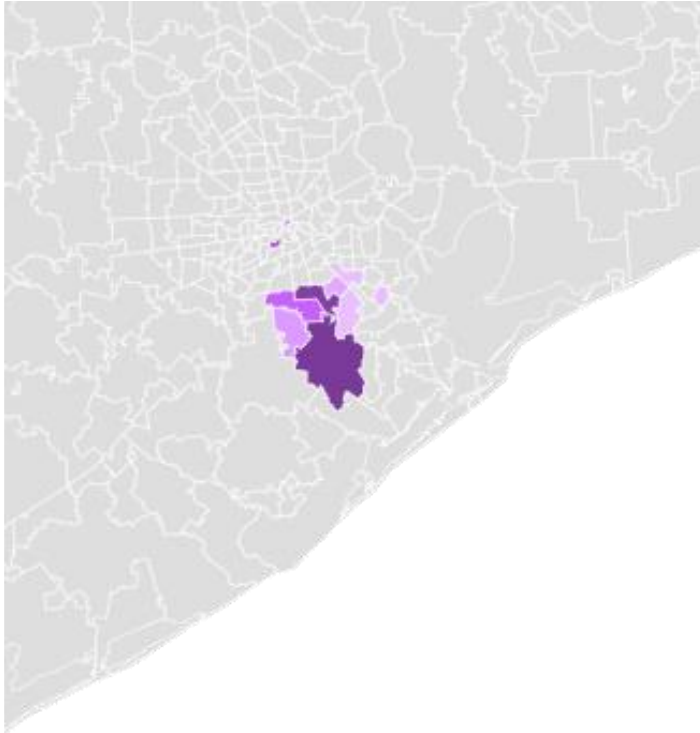
Figure 2.4: Northern Brazoria County Job Inflow and Outflow



Source: Census Bureau, Center for Economic Studies.

Figure 2.5 and Table 2.1 provide 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 counties for work, but the greatest number of residents work in 77511 (Alvin) (6% of all jobs). Figure 2.6 and Table 2.2 also show commuting patterns, except the data highlight the ZIP codes in which the region's workers reside.

Figure 2.5: ZIP codes where Northern Brazoria County Residents Work



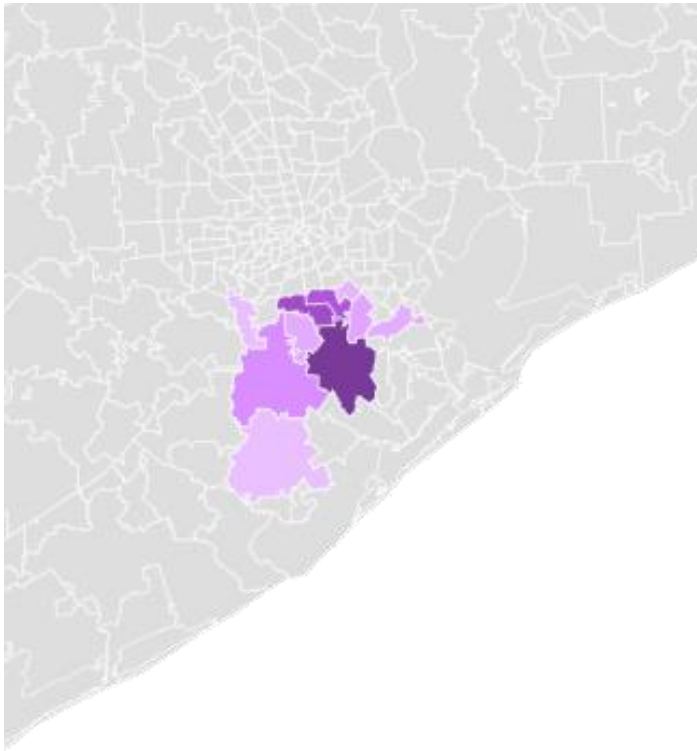
Source: Census Bureau, Center for Economic Studies.

Table 2.1: ZIP codes where Northern Brazoria County Residents Work

ZIP CODE OF EMPLOYMENT	JOBS	% JOBS
77511 - Alvin	7,350	6%
77581 - Pearland	6,980	6%
77030 - Houston	5,130	4%
77584 - Pearland	4,600	4%
77002 - Houston	3,280	3%
77578 - Manvel	2,800	2%
77089 - Houston	2,340	2%
77058 - Houston	1,760	1%
77034 - Houston	1,680	1%
77546 - Friendswood	1,660	1%
All Other Locations	82,550	69%
Total Primary Jobs, Residents	120,120	100%

Source: Census Bureau, Center for Economic Studies.

Figure 2.6: ZIP codes where Northern Brazoria County Workers Live



Source: Census Bureau, Center for Economic Studies.

Table 2.2: ZIP codes where Northern Brazoria County Workers Live

ZIP CODE OF RESIDENCE	JOBS	% JOBS
77511 - Alvin	7,430	10%
77584 - Pearland	5,890	8%
77581 - Pearland	5,210	7%
77583 - Rosharon	2,710	4%
77546 - Friendswood	1,970	3%
77578 - Manvel	1,710	2%
77573 - League City	1,700	2%
77089 - Houston	1,370	2%
77459 - Missouri City	1,100	1%
77515 - Angleton	1,060	1%
All Other Locations	45,890	60%
Total Primary Jobs, Workers	76,040	100%

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 Lightcast'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 Brazoria County⁹ 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:

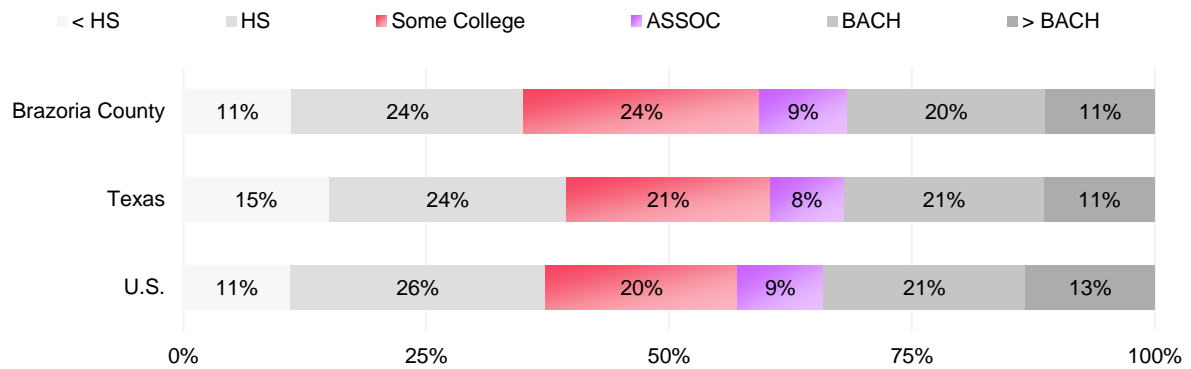
- Less than a high school diploma (<HS);
- High school diploma or equivalent (HS);
- Some college;¹⁰
- Associate degree (Assoc);
- Bachelor's degree (Bach);
- Greater than a bachelor's degree (>Bach).

About 252,330 adults live in Brazoria County, and Figure 2.7 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 county, 35% of adults have a high school diploma or less, which is less than the state average (39%) and less than the national average (37%). Out of all the award categories in the figure, the people who are most likely to seek education and training from colleges in the county are those in the "Less than High School Diploma," "High School Diploma," and "Some College" categories. Together, these categories total 149,650 people, or 59% of the county's adults.

⁹ Due to data limitations, population demographics data are presented here at the county level (Brazoria County).

¹⁰ 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 2.7: Highest Educational Attainments of Adults in Brazoria County, Texas, and the U.S.

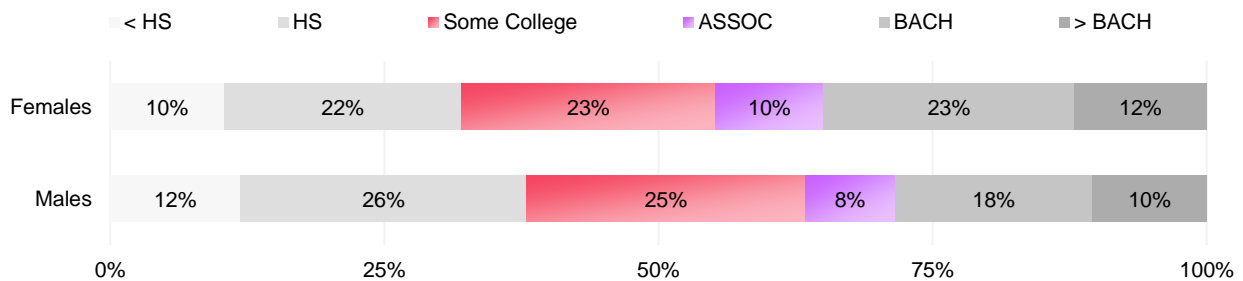


Numbers may not sum due to rounding.

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

Between female and male adults in Brazoria County, there is little variation in the distribution of their award categories. Twenty-three percent of the county's female adults and 25% of the county's male adults have some college education but no degree, which represent 29,030 females and 32,200 males. Ten percent of female adults and eight percent of male adults in the county have an associate degree as their highest award level. This information appears in Figure 2.8.

Figure 2.8: Highest Educational Attainments of Adults in Brazoria County by Gender



Numbers may not sum due to rounding.

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

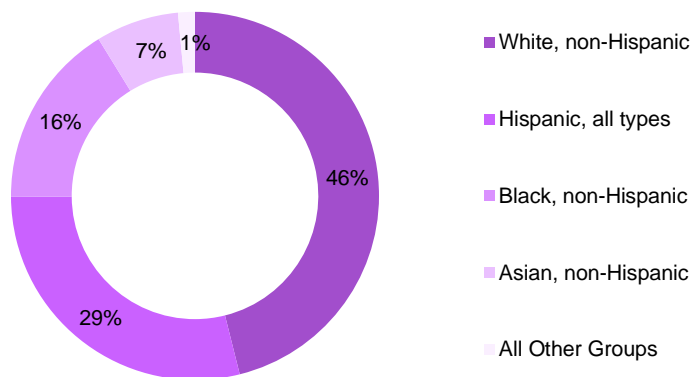
Table 2.3 and Figure 2.9 show the adults in Brazoria County by the major race and ethnic groups. As shown, 46% of the county's adults are White, non-Hispanic. Another 29% of adults are Hispanic, all types, 16% are Black, non-Hispanic, and 7% are Asian, non-Hispanic, the next largest groups. Altogether, less than 2% percent of the county's adults are 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 Brazoria County by Major Race and Ethnic Groups

GROUP	POPULATION	% POPULATION
White, non-Hispanic	116,294	46.1%
Hispanic, all types	72,733	28.8%
Black, non-Hispanic	41,158	16.3%
Asian, non-Hispanic	18,408	7.3%
Two or more races, non-Hispanic	2,620	1.0%
American Indian or Alaskan Native, non-Hispanic	975	0.4%
Native Hawaiian or Pacific Islander, non-Hispanic	141	0.1%
Total	252,330	100%

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

Figure 2.9: Adults in Brazoria County by Major Race and Ethnic Groups

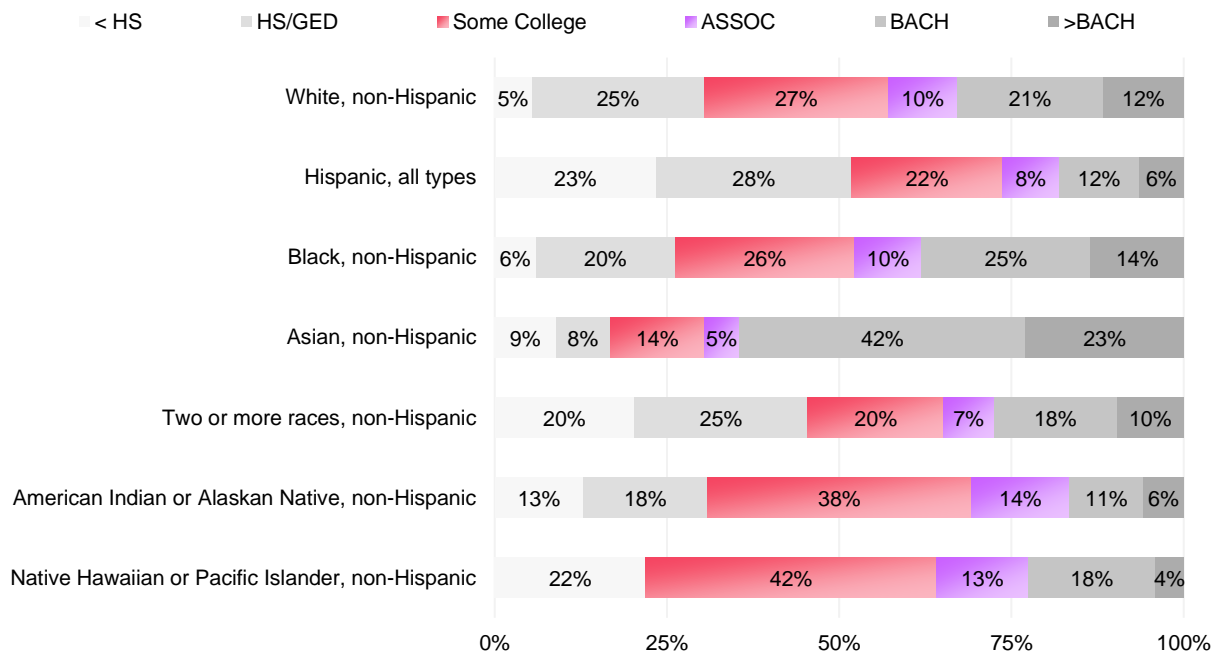


Source: Lightcast demographics data and U.S. Census Bureau, American Community Survey.

Figure 2.10 displays the highest educational attainment of Brazoria County's adults by their major race and ethnic groups. Asian, non-Hispanic adults have the highest percentage of adults with a postsecondary education (83%) among all the groups. White, non-hispanic adults, the most populous group in the county, follow with 70%. The Native Hawaiian or Pacific Islander, non-Hispanic group follows with 78%. Hispanic, all types adults and Two or more races, non-Hispanic adults have the lowest levels of educational attainment in the county. For these groups, only 48% and 55%, 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 county's adults, whether such actions involve outreach to local high schools or supporting college students who plan to transfer into a bachelor's degree level program.

Figure 2.10: Highest Educational Attainments of Adults in Brazoria County by Major Race and Ethnic Groups



Numbers may not sum due to rounding.

Source: Lightcast 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 college completions?

This chapter outlines the deficit of regional 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 programs offered in Northern Brazoria County and their alignment with the region's 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 Northern Brazoria County. 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 Northern Brazoria County Workforce

<p>HIGH DEMAND, LOW SUPPLY</p> <p><i>How can we expand these program opportunities?</i></p> <p>General Office Occupations & Clerical Services (CERT) Business Administration & Management (CERT, ASSOC, & BACH) Culinary Arts/Chef Training (CERT & ASSOC) Administrative Assistant & Secretarial Science (CERT & ASSOC) Elementary Education & Teaching (T-T)</p>	<p>HIGH DEMAND, HIGH SUPPLY</p> <p><i>Can we maintain focus on program quality & student success?</i></p> <p>Nursing Assistant/Aide & Patient Care Assistant/Aide (CERT) Welding Technology/Welder (CERT) Business/Commerce (ASSOC)</p>
<p>LOW DEMAND, LOW SUPPLY</p> <p><i>Should we reevaluate these programs?</i></p> <p>Prepress/Desktop Publishing & Digital Imaging Design (CERT) Electroneurodiagnostic/Electroencephalographic Technology/Technologist (CERT) Criminalistics & Criminal Science (CERT) Music (ASSOC) Child Care & Support Services Management (ASSOC)</p>	<p>LOW DEMAND, HIGH SUPPLY</p> <p><i>Are we connecting these programs to opportunities outside the region?</i></p> <p>Chemical Technology/Technician (CERT & ASSOC) Registered Nursing/Registered Nurse (ASSOC)</p>

Source: Lightcast 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.

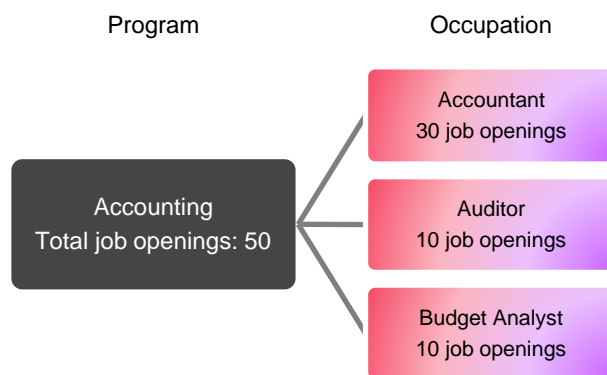
Surplus Represents an oversupply, or when there are more completions than there are job openings in an occupation. If left unaddressed, significant surpluses may lead to higher unemployment rates or higher attrition rates—the colleges could be educating a workforce that is leaving the region after program 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 Northern Brazoria County, any gap or surplus within 50 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.

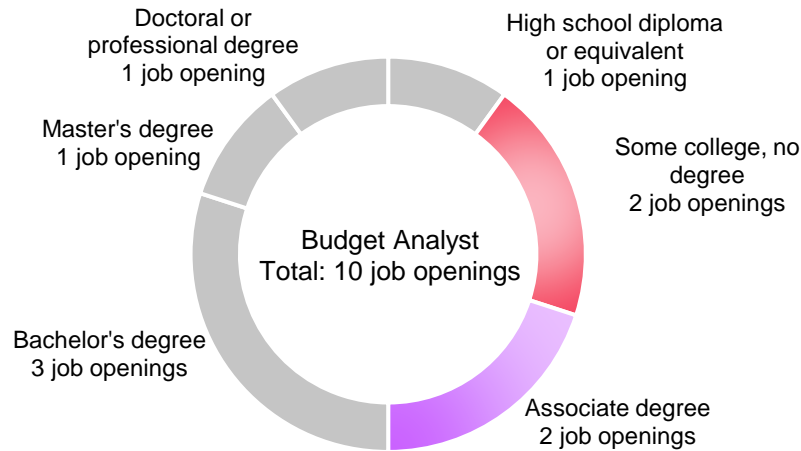
The figures show the gap between job demand and the supply of program completions. An explanation of job demand is warranted here, and a more detailed description can be found in Appendix 5. A program's job demand is measured as its total number of annual job openings, on average, from 2022 to 2032. 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



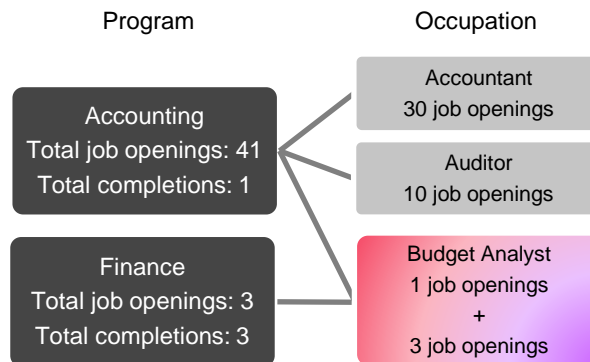
Furthermore, an occupation's job openings are not a gross measure of job openings available in the region. For every occupation, job openings have been weighted by the program's award level and one level below and account for the highest educational attainments of those employed in the position. Figure 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 2019 and 2021.¹¹ Three postsecondary educational institutions in Northern Brazoria County report to IPEDS,¹² the source of the completions data. The gap, then, is the difference between job openings and program completions. Appendix 4 has a program to occupation map with adjusted employment.

A great amount of data is presented in the tables. The first set shows the gaps and surpluses across all the programs offered by colleges in the region 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 colleges in the region, and the gap or surplus for Northern Brazoria County. The programs' median hourly wage rates are specific to Northern Brazoria County.

The second set of tables identify the occupations mapped to the programs with a significant gap or surplus, 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 2022 and 2032 with the change in jobs and average annual job openings for those years. The occupations' median hourly wage rates are specific to Northern Brazoria County. See Appendix 6 for a complete list of job projections and Appendix 7 for unemployment information by industry and occupation.

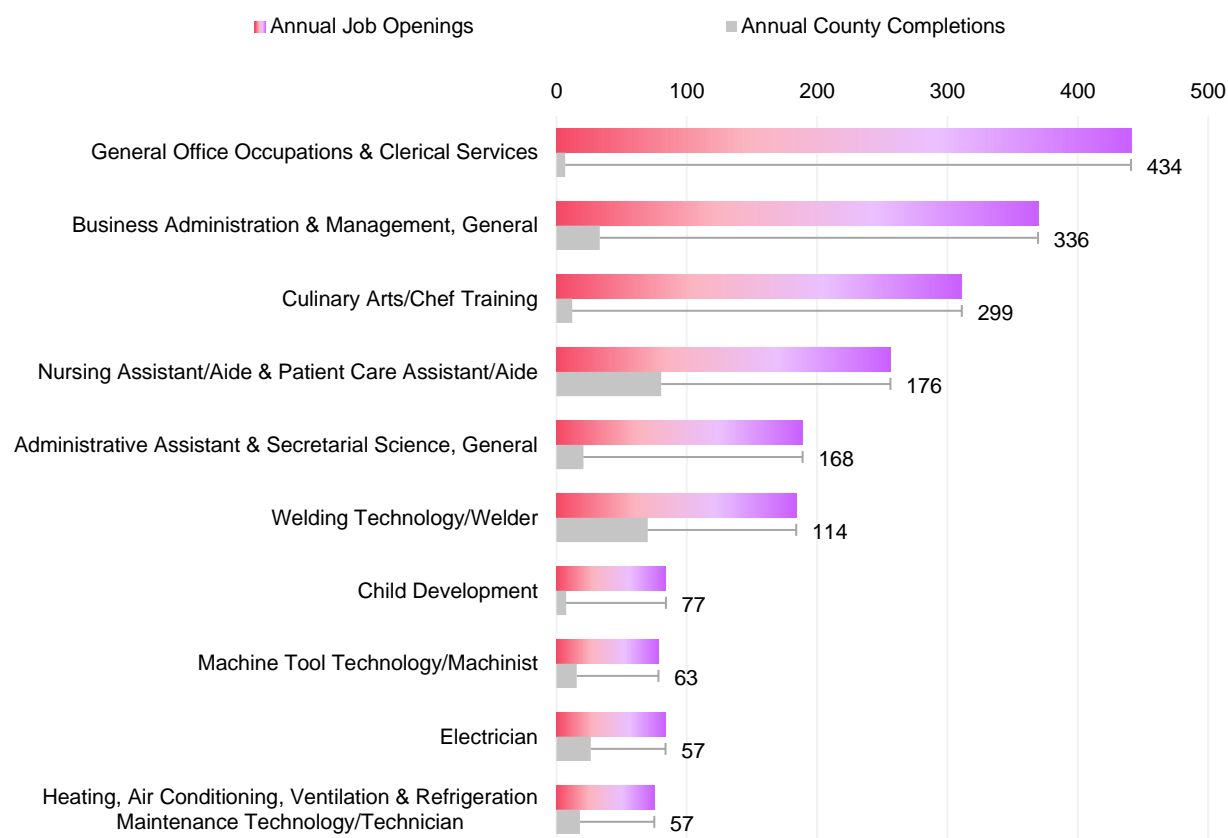
CERTIFICATE LEVEL ANALYSIS

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, unique certificate level programs offered by colleges in the region aggregate into 33 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.

¹¹ The average annual completions data for Brazosport College (BC) were updated to the years 2020 to 2022 and reviewed for accuracy by BC.

¹² 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.

Figure 3.5: Top 10 Certificate Level Programs with a Gap



Source: Lightcast program demand gap model.

Eleven significant gaps above the 50-openings level of significance have been identified at the certificate level. The largest certificate level gap, at 434 job openings, is for the General Office Occupations & Clerical Services program (Figure 3.5). On average, the colleges in the region have seven annual completions in this program. Table 3.1 shows all the award level's program gaps and surpluses. There is one program with a significant surplus of program completions. Programs with a significant gap or surplus 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 REGIONAL COMPLETIONS	GAP OR SURPLUS	MEDIAN HOURLY WAGE
52.0408	General Office Occupations & Clerical Services	441	7	434	\$16.02
52.0201	Business Administration & Management, General	369	33	336	\$28.47
12.0503	Culinary Arts/Chef Training	311	12	299	\$13.22
51.3902	Nursing Assistant/Aide & Patient Care Assistant/Aide	256	80	176	\$11.91

CIP CODE	CIP TITLE	ANNUAL JOB OPENINGS	ANNUAL REGIONAL COMPLETIONS	GAP OR SURPLUS	MEDIAN HOURLY WAGE
52.0401	Administrative Assistant & Secretarial Science, General	189	21	168	\$15.46
48.0508	Welding Technology/Welder	184	70	114	\$23.01
19.0706	Child Development	84	7	77	\$11.14
48.0501	Machine Tool Technology/Machinist	78	16	63	\$23.18
46.0302	Electrician	84	26	57	\$26.50
47.0201	Heating, Air Conditioning, Ventilation & Refrigeration Maintenance Technology/Technician	75	18	57	\$23.03
15.1001	Construction Engineering Technology/Technician	65	12	54	\$33.82
12.0401	Cosmetology/Cosmetologist, General	34	15	19	\$13.29
19.0708	Child Care & Support Services Management	17	1	15	\$12.74
47.0604	Automobile/Automotive Mechanics Technology/Technician	36	23	13	\$23.40
51.0805	Pharmacy Technician/Assistant	22	12	10	\$16.56
51.0904	Emergency Medical Technology/Technician (EMT Paramedic)	17	15	3	\$17.81
46.0502	Pipefitting/Pipefitter & Sprinkler Fitter	5	3	2	\$24.68
09.0701	Radio & Television	4	3	1	\$25.34
10.0303	Prepress/Desktop Publishing & Digital Imaging Design	2	<1	1	\$23.00
51.0910	Diagnostic Medical Sonography/Sonographer & Ultrasound Technician	3	2	1	\$21.30
22.0303	Court Reporting & Captioning/Court Reporter	6	5	1	\$20.71
12.0413	Cosmetology, Barber/Styling, & Nail Instructor	2	2	0	\$12.04
51.0903	Electroneurodiagnostic/Electroencephalographic Technology/Technologist	1	<1	0	\$21.30
43.0402	Criminalistics & Criminal Science	0	<1	(0)	\$28.54
15.0701	Occupational Safety & Health Technology/Technician	13	15	(2)	\$34.80
22.0302	Legal Assistant/Paralegal	7	12	(5)	\$25.46
51.3901	Licensed Practical/Vocational Nurse Training	27	32	(5)	\$22.78
11.0201	Computer Programming/Programmer, General	9	17	(8)	\$40.61
51.1501	Substance Abuse/Addiction Counseling	6	16	(10)	\$19.28
15.0404	Instrumentation Technology/Technician	13	43	(29)	\$25.06
15.1301	Drafting & Design Technology/Technician, General	5	42	(37)	\$28.02
43.0107	Criminal Justice/Police Science	19	57	(38)	\$28.53
41.0301	Chemical Technology/Technician	35	214	(179)	\$38.48

Numbers may not sum due to rounding.

Source: Lightcast program demand gap model.

Several occupations mapped to General Office Occupations & Clerical Services, such as stockers & order fillers; bookkeeping, accounting, & auditing clerks; and shipping, receiving, & inventory clerks (Table 3.2). The median hourly wage for the General Office Occupations & Clerical Services program is \$16.02, when weighted by the openings and median hourly wages for each occupation mapped to the program. For context, the Texas state minimum wage is \$7.25¹³ per hour, and the living wage in Brazoria County is \$22.42 per hour for a household with two working adults and two children.¹⁴ While this program could be expanded, colleges should focus their efforts on expanding the higher wage programs identified in the analysis.¹⁵

While the gaps are important for building or expanding programs, the surpluses are equally important. An analysis of the surplus programs ensures that the colleges are educating and training students with the skills the region's workforce requires. There is one certificate program with a significant surplus beyond the 50-openings level of significance. The Chemical Technology/Technician program has a surplus of 179 completers annually. Brazosport College produces 147 annual completers for the 35 annual openings, and when combined with the other regional institutions, there are a total of 214 completers per year, resulting in the large surplus. Chemical Manufacturing is one of the key industry subsectors in the region identified in Chapter 2. However, in light of this surplus and the slight contraction in employment projected for the Chemical Manufacturing industry over the next ten years, colleges should communicate with employers in the region to ensure that students are finding employment after completing the program. It is also possible that completers of this program are finding employment outside Northern Brazoria County.

Using Table 3.2, 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 certificate level programs with a significant gap. 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 Northern Brazoria County. On the other hand, students completing programs with a significant surplus may be finding employment opportunities outside the region.

¹³ The Texas minimum wage as of January 1, 2023, is \$7.25 per hour. Source: Lightcast Complete Employment Data.

¹⁴ Living wage calculations provided by Dr. Amy K. Glasmeier and the Massachusetts Institute of Technology. See Appendix 8.

¹⁵ 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. Lightcast is available to conduct this research; see your Lightcast contact for details.

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

SOC CODE	SOC TITLE	2022 JOBS	2032 JOBS	JOB CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
GENERAL OFFICE OCCUPATIONS & CLERICAL SERVICES (CIP CODE 52.0408)						
53-7065	Stockers & Order Fillers	1,494	1,766	272	207	\$14.24
43-3031	Bookkeeping, Accounting, & Auditing Clerks	662	707	46	57	\$20.14
43-5071	Shipping, Receiving, & Inventory Clerks	386	385	(1)	30	\$16.31
43-9061	Office Clerks, General	1,303	1,400	97	27	\$15.66
43-4051	Customer Service Representatives	1,163	1,212	49	16	\$15.80
43-3021	Billing & Posting Clerks	175	217	42	16	\$16.82
43-6014	Secretaries & Administrative Assistants, Except Legal, Medical, & Executive	894	921	27	16	\$16.46
43-4171	Receptionists & Information Clerks	547	651	104	15	\$12.92
41-2021	Counter & Rental Clerks	155	172	18	14	\$13.48
43-5061	Production, Planning, & Expediting Clerks	158	175	17	10	\$21.44
43-5032	Dispatchers, Except Police, Fire, & Ambulance	98	104	6	7	\$18.35
43-1011	First-Line Supervisors of Office & Administrative Support Workers	715	778	63	7	\$26.23
43-3051	Payroll & Timekeeping Clerks	73	73	0	5	\$20.35
43-5011	Cargo & Freight Agents	31	39	8	3	\$20.45
43-9041	Insurance Claims & Policy Processing Clerks	39	44	5	3	\$17.29
43-4151	Order Clerks	27	26	(1)	2	\$16.32
43-9051	Mail Clerks & Mail Machine Operators, Except Postal Service	21	21	0	2	\$15.80
43-6011	Executive Secretaries & Executive Administrative Assistants	129	124	(4)	2	\$27.32
43-9021	Data Entry Keyers	64	60	(5)	1	\$14.81
43-3061	Procurement Clerks	20	21	1	1	\$19.80
43-4071	File Clerks	40	41	1	1	\$13.70
43-4141	New Accounts Clerks	6	5	(0)	0	\$16.68
43-4021	Correspondence Clerks	2	3	0	0	\$15.90
43-9022	Word Processors & Typists	9	7	(2)	0	\$16.62
BUSINESS ADMINISTRATION & MANAGEMENT, GENERAL (CIP CODE 52.0201)						
43-4051	Customer Service Representatives	1,163	1,212	49	82	\$15.80
11-1021	General & Operations Managers	1,739	2,013	274	80	\$42.41
41-1011	First-Line Supervisors of Retail Sales Workers	945	1,053	108	70	\$18.87
43-1011	First-Line Supervisors of Office & Administrative Support Workers	715	778	63	35	\$26.23
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, & Travel	432	491	59	20	\$26.03

SOC CODE	SOC TITLE	2022 JOBS	2032 JOBS	JOB CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
41-4012	Sales Representatives, Wholesale & Manufacturing, Except Technical & Scientific Products	372	433	60	18	\$26.80
11-9199	Managers, All Other	521	610	89	11	\$36.81
13-1071	Human Resources Specialists	250	297	47	8	\$27.22
13-1082	Project Management Specialists	573	636	62	8	\$42.92
15-1232	Computer User Support Specialists	201	224	23	7	\$21.18
11-3031	Financial Managers	178	217	39	5	\$66.45
11-2022	Sales Managers	163	186	22	5	\$54.38
13-1199	Business Operations Specialists, All Other	247	290	43	4	\$33.23
13-2011	Accountants & Auditors	450	502	51	4	\$34.71
41-4011	Sales Representatives, Wholesale & Manufacturing, Technical & Scientific Products	76	88	12	4	\$36.44
13-1161	Market Research Analysts & Marketing Specialists	127	169	43	3	\$27.50
13-1111	Management Analysts	98	117	19	2	\$39.35
11-3121	Human Resources Managers	52	60	8	1	\$56.38
11-1011	Chief Executives	47	56	9	1	\$96.09
11-3021	Computer & Information Systems Managers	91	109	17	1	\$69.28
11-2021	Marketing Managers	55	65	10	1	\$55.29
CULINARY ARTS/CHEF TRAINING (CIP CODE 12.0503)						
35-1012	First-Line Supervisors of Food Preparation & Serving Workers	998	1,289	292	134	\$13.15
35-2014	Cooks, Restaurant	888	1,354	466	132	\$12.37
35-2012	Cooks, Institution & Cafeteria	172	201	29	19	\$13.07
11-9051	Food Service Managers	99	140	40	10	\$26.21
35-2015	Cooks, Short Order	80	95	15	9	\$9.82
35-1011	Chefs & Head Cooks	69	92	23	7	\$16.81
35-2013	Cooks, Private Household	1	1	0	0	\$19.21
NURSING ASSISTANT/AIDE & PATIENT CARE ASSISTANT/AIDE (CIP CODE 51.3902)						
31-1128	Home Health & Personal Care Aides	1,676	2,200	524	212	\$11.56
31-1131	Nursing Assistants	379	406	26	43	\$13.62
31-1132	Orderlies	7	7	(0)	1	\$12.67
ADMINISTRATIVE ASSISTANT & SECRETARIAL SCIENCE, GENERAL (CIP CODE 52.0401)						
43-9061	Office Clerks, General	1,303	1,400	97	83	\$15.66
43-6014	Secretaries & Administrative Assistants, Except Legal, Medical, & Executive	894	921	27	49	\$16.46
43-4171	Receptionists & Information Clerks	547	651	104	46	\$12.92

SOC CODE	SOC TITLE	2022 JOBS	2032 JOBS	JOB CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
43-6011	Executive Secretaries & Executive Administrative Assistants	129	124	(4)	5	\$27.32
43-9021	Data Entry Keyers	64	60	(5)	3	\$14.81
43-4071	File Clerks	40	41	1	2	\$13.70
43-9022	Word Processors & Typists	9	7	(2)	0	\$16.62
WELDING TECHNOLOGY/WELDER (CIP CODE 48.0508)						
47-1011	First-Line Supervisors of Construction Trades & Extraction Workers	1,101	1,223	121	52	\$29.38
51-4121	Welders, Cutters, Solderers, & Brazers	505	577	72	46	\$21.30
49-9071	Maintenance & Repair Workers, General	615	699	85	39	\$16.65
47-2152	Plumbers, Pipefitters, & Steamfitters	432	496	63	30	\$23.92
47-2221	Structural Iron & Steel Workers	95	94	(1)	8	\$21.67
47-2211	Sheet Metal Workers	77	83	6	5	\$20.63
47-2171	Reinforcing Iron & Rebar Workers	59	59	0	4	\$21.54
51-4122	Welding, Soldering, & Brazing Machine Setters, Operators, & Tenders	15	16	1	1	\$20.60
CHILD DEVELOPMENT (CIP CODE 19.0706)						
39-9011	Childcare Workers	672	717	45	59	\$10.07
25-2011	Preschool Teachers, Except Special Education	537	634	97	20	\$12.41
21-1093	Social & Human Service Assistants	121	148	27	2	\$17.58
21-1021	Child, Family, & School Social Workers	124	146	22	2	\$20.94
11-9031	Education & Childcare Administrators, Preschool & Daycare	66	74	8	1	\$22.26
25-9021	Farm & Home Management Educators	1	1	0	0	\$12.12
MACHINE TOOL TECHNOLOGY/MACHINIST (CIP CODE 48.0501)						
49-9041	Industrial Machinery Mechanics	393	462	69	31	\$26.95
51-4041	Machinists	211	231	20	19	\$21.92
51-9161	Computer Numerically Controlled Tool Operators	90	93	3	7	\$21.85
51-4031	Cutting, Punching, & Press Machine Setters, Operators, & Tenders, Metal & Plastic	55	59	4	5	\$16.36
51-4081	Multiple Machine Tool Setters, Operators, & Tenders, Metal & Plastic	48	52	4	4	\$16.49
49-9043	Maintenance Workers, Machinery	29	32	3	3	\$26.62
49-9044	Millwrights	31	34	3	2	\$26.91
51-4033	Grinding, Lapping, Polishing, & Buffing Machine Tool Setters, Operators, & Tenders, Metal & Plastic	24	25	2	2	\$17.64
51-4034	Lathe & Turning Machine Tool Setters, Operators, & Tenders, Metal & Plastic	16	16	0	2	\$17.64
51-4021	Extruding & Drawing Machine Setters, Operators, & Tenders, Metal & Plastic	16	14	(2)	1	\$17.41
51-4191	Heat Treating Equipment Setters, Operators, & Tenders, Metal & Plastic	13	12	(1)	1	\$22.18

SOC CODE	SOC TITLE	2022 JOBS	2032 JOBS	JOB CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
51-4032	Drilling & Boring Machine Tool Setters, Operators, & Tenders, Metal & Plastic	9	9	(0)	1	\$17.48
51-4199	Metal Workers & Plastic Workers, All Other	9	10	1	1	\$16.31
51-4023	Rolling Machine Setters, Operators, & Tenders, Metal & Plastic	4	4	0	0	\$21.21
51-4035	Milling & Planing Machine Setters, Operators, & Tenders, Metal & Plastic	3	3	(0)	0	\$17.97
51-4022	Forging Machine Setters, Operators, & Tenders, Metal & Plastic	2	2	0	0	\$21.64
51-4192	Layout Workers, Metal & Plastic	1	1	0	0	\$22.27
ELECTRICIAN (CIP CODE 46.0302)						
47-2111	Electricians	497	575	78	43	\$25.65
47-1011	First-Line Supervisors of Construction Trades & Extraction Workers	1,101	1,223	121	19	\$29.38
49-1011	First-Line Supervisors of Mechanics, Installers, & Repairers	347	392	45	10	\$31.44
47-3013	Helpers--Electricians	98	104	6	7	\$19.02
49-2098	Security & Fire Alarm Systems Installers	37	41	4	3	\$21.20
49-9097	Signal & Track Switch Repairers	8	9	1	1	\$29.41
HEATING, AIR CONDITIONING, VENTILATION & REFRIGERATION MAINTENANCE TECHNOLOGY/TECHNICIAN (CIP CODE 47.0201)						
49-9021	Heating, Air Conditioning, & Refrigeration Mechanics & Installers	225	258	33	18	\$20.95
49-9071	Maintenance & Repair Workers, General	615	699	85	10	\$16.65
49-9098	Helpers--Installation, Maintenance, & Repair Workers	98	111	13	8	\$14.68
47-2152	Plumbers, Pipefitters, & Steamfitters	432	496	63	8	\$23.92
47-2151	Pipelayers	123	129	6	7	\$16.69
49-1011	First-Line Supervisors of Mechanics, Installers, & Repairers	347	392	45	7	\$31.44
47-4011	Construction & Building Inspectors	108	113	4	5	\$33.29
13-1082	Project Management Specialists	573	636	62	4	\$42.92
47-4098	Miscellaneous Construction & Related Workers	29	32	3	2	\$20.68
13-1199	Business Operations Specialists, All Other	247	290	43	2	\$33.23
49-9031	Home Appliance Repairers	19	21	2	2	\$18.91
47-2211	Sheet Metal Workers	77	83	6	1	\$20.63
49-2094	Electrical & Electronics Repairers, Commercial & Industrial Equipment	39	44	5	1	\$32.54
CONSTRUCTION ENGINEERING TECHNOLOGY/TECHNICIAN (CIP CODE 15.1001)						
11-9021	Construction Managers	797	935	137	40	\$36.66
47-1011	First-Line Supervisors of Construction Trades & Extraction Workers	1,101	1,223	121	9	\$29.38
13-1051	Cost Estimators	163	172	9	8	\$32.56
17-3031	Surveying & Mapping Technicians	41	42	2	3	\$20.69
47-4011	Construction & Building Inspectors	108	113	4	3	\$33.29

SOC CODE	SOC TITLE	2022 JOBS	2032 JOBS	JOB CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
17-3022	Civil Engineering Technologists & Technicians	43	42	(1)	2	\$27.42
17-3011	Architectural & Civil Drafters	53	55	2	0	\$27.16

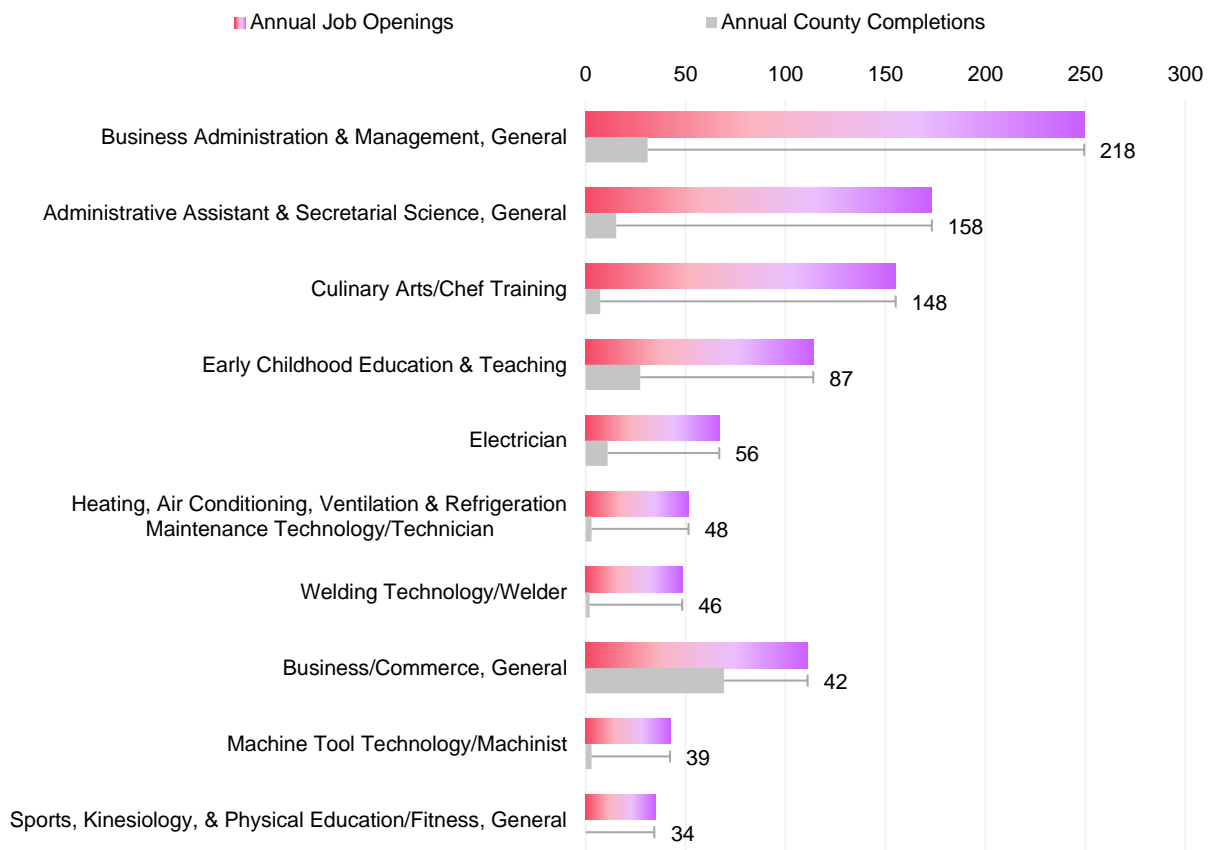
Numbers may not sum due to rounding.

Source: Lightcast program demand gap model.

ASSOCIATE DEGREE LEVEL ANALYSIS

The colleges in the region offer 49 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: Lightcast program demand gap model.

As shown in Figure 3.6, five programs have a significant gap above the 50-openings level of significance. The Business Administration & Management, General program has the largest, followed by the Administrative Assistant & Secretarial Science, General and Culinary Arts/Chef Training programs. As shown in Table 3.3, the Business Administration & Management, General program has 249 average annual job openings, considering the region's labor market. On average, the colleges have 31 annual completions, leaving a gap of 218 annual job openings. There are two programs with a significant surplus of program completions above the 50-openings level of significance. Programs with a significant gap or surplus 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 REGIONAL COMPLETIONS	GAP OR SURPLUS	MEDIAN HOURLY WAGE
52.0201	Business Administration & Management, General	249	31	218	\$25.20
52.0401	Administrative Assistant & Secretarial Science, General	173	15	158	\$15.44
12.0503	Culinary Arts/Chef Training	155	7	148	\$13.48
13.1210	Early Childhood Education & Teaching	114	27	87	\$13.37
46.0302	Electrician	67	11	56	\$27.41
47.0201	Heating, Air Conditioning, Ventilation & Refrigeration Maintenance Technology/Technician	51	3	48	\$20.81
48.0508	Welding Technology/Welder	48	2	46	\$21.16
52.0101	Business/Commerce, General	111	69	42	\$40.76
48.0501	Machine Tool Technology/Machinist	42	3	39	\$23.67
31.0501	Sports, Kinesiology, & Physical Education/Fitness, General	35	<1	34	\$16.24
43.0104	Criminal Justice/Safety Studies	32	11	21	\$24.96
15.1001	Construction Engineering Technology/Technician	25	7	18	\$29.47
47.0604	Automobile/Automotive Mechanics Technology/Technician	15	<1	15	\$21.53
51.0805	Pharmacy Technician/Assistant	18	4	14	\$16.59
51.0904	Emergency Medical Technology/Technician (EMT Paramedic)	18	5	14	\$18.88
52.0402	Executive Assistant/Executive Secretary	14	5	9	\$17.65
19.0706	Child Development	10	4	6	\$11.41
50.0701	Art/Art Studies, General	13	8	5	\$15.40
46.0502	Pipefitting/Pipefitter & Sprinkler Fitter	6	1	5	\$24.56
22.0303	Court Reporting & Captioning/Court Reporter	5	2	3	\$22.24
40.0101	Physical Sciences, General	3	1	2	\$45.04
50.0901	Music, General	2	<1	1	\$21.37

CIP CODE	CIP TITLE	ANNUAL JOB OPENINGS	ANNUAL REGIONAL COMPLETIONS	GAP OR SURPLUS	MEDIAN HOURLY WAGE
50.0501	Drama & Dramatics/Theatre Arts, General	3	2	1	\$23.61
19.0708	Child Care & Support Services Management	1	<1	0	\$11.56
42.0101	Psychology, General	14	14	0	\$26.22
54.0101	History, General	0	<1	(0)	\$30.55
40.0801	Physics, General	0	<1	(0)	\$33.55
13.1203	Junior High/Intermediate/Middle School Education & Teaching	1	2	(1)	\$30.99
13.1202	Elementary Education & Teaching	1	2	(1)	\$31.00
45.1101	Sociology, General	0	2	(1)	\$31.32
15.0701	Occupational Safety & Health Technology/Technician	7	10	(3)	\$33.92
50.0903	Music Performance, General	2	5	(3)	\$31.82
43.0107	Criminal Justice/Police Science	12	15	(3)	\$28.54
26.0101	Biology/Biological Sciences, General	4	7	(3)	\$23.55
13.1205	Secondary Education & Teaching	1	5	(4)	\$33.10
22.0302	Legal Assistant/Paralegal	7	12	(4)	\$25.36
09.0101	Speech Communication & Rhetoric	1	6	(5)	\$29.58
11.0201	Computer Programming/Programmer, General	9	15	(6)	\$41.47
09.0701	Radio & Television	4	10	(6)	\$25.54
27.0101	Mathematics, General	4	10	(6)	\$32.37
51.0000	Health Services/Allied Health/Health Sciences, General	51	57	(6)	\$18.03
51.0908	Respiratory Care Therapy/Therapist	1	13	(12)	\$25.61
15.1301	Drafting & Design Technology/Technician, General	6	20	(14)	\$27.98
51.1502	Psychiatric/Mental Health Services Technician	1	16	(15)	\$15.73
51.0903	Electroneurodiagnostic/Electroencephalographic Technology/Technologist	1	19	(18)	\$26.20
51.0910	Diagnostic Medical Sonography/Sonographer & Ultrasound Technician	1	20	(19)	\$26.20
15.0404	Instrumentation Technology/Technician	11	36	(25)	\$27.17
41.0301	Chemical Technology/Technician	23	119	(97)	\$38.47
51.3801	Registered Nursing/Registered Nurse	24	139	(115)	\$36.71

Numbers may not sum due to rounding.

Source: Lightcast program demand gap model.

Several occupations mapped to Business Administration & Management, General such as customer service representatives; first-line supervisors of retail sales workers; and first-line supervisors of office & administrative support workers (Table 3.4). The median hourly wage for

this program is \$25.20, when weighted by the openings and median hourly wages for each occupation mapped to the program. For context, the Texas state minimum wage is \$7.25¹⁶ per hour, and the living wage in Brazoria County is \$22.42 per hour for a household with two working adults and two children.¹⁷ This program is recommended for expansion because of the large gap and high median hourly wage. Business Administration/Management programs can lead to leadership positions in a variety of industries; colleges are advised to consider the industry mix of their service region to align curriculum to meet the needs of the region and train students most effectively to be competitive in the local labor market.¹⁸

While the gaps are important to keep in mind for building or expanding programs, the surpluses are equally important to ensure colleges are training students with skills the regional workforce requires. There are two associate degree programs offered in the region with a significant surplus. Registered Nursing/Registered Nurse has the largest, with a surplus of 115. More job openings are available for registered nurses with a bachelor's degree, as is illustrated in the bachelor's degree level analysis, and registered nurses are likely finding employment outside Northern Brazoria County. Chemical Technology/Technician also has a significant surplus, with a surplus of 97. Although Chemical Manufacturing is a key industry subsector identified in chapter 2, in light of this program surplus and the slight contraction in employment projected for the Chemical Manufacturing industry over the next ten years, colleges should communicate with employers in the region to ensure that students are finding employment after completing the program and consider whether students are finding employment outside Northern Brazoria County.

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 Associate Degree Level Programs with a Significant Gap

SOC CODE	SOC TITLE	2022 JOBS	2032 JOBS	JOB CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
BUSINESS ADMINISTRATION & MANAGEMENT, GENERAL (CIP CODE 52.0201)						
43-4051	Customer Service Representatives	1,163	1,212	49	73	\$15.80

¹⁶ The Texas minimum wage as of January 1, 2023, is \$7.25 per hour. Source: Lightcast Complete Employment Data.

¹⁷ Living wage calculations provided by Dr. Amy K. Glasmeier and the Massachusetts Institute of Technology. See Appendix 8.

¹⁸ As stated previously, further research must be conducted before making a final determination. Lightcast is available to conduct this research; see your Lightcast contact for details.

SOC CODE	SOC TITLE	2022 JOBS	2032 JOBS	JOB CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
41-1011	First-Line Supervisors of Retail Sales Workers	945	1,053	108	47	\$18.87
43-1011	First-Line Supervisors of Office & Administrative Support Workers	715	778	63	35	\$26.23
11-1021	General & Operations Managers	1,739	2,013	274	20	\$42.41
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, & Travel	432	491	59	16	\$26.03
41-4012	Sales Representatives, Wholesale & Manufacturing, Except Technical & Scientific Products	372	433	60	15	\$26.80
15-1232	Computer User Support Specialists	201	224	23	7	\$21.18
13-2011	Accountants & Auditors	450	502	51	6	\$34.71
13-1071	Human Resources Specialists	250	297	47	5	\$27.22
11-3031	Financial Managers	178	217	39	5	\$66.45
13-1082	Project Management Specialists	573	636	62	3	\$42.92
11-9199	Managers, All Other	521	610	89	3	\$36.81
41-4011	Sales Representatives, Wholesale & Manufacturing, Technical & Scientific Products	76	88	12	3	\$36.44
13-1161	Market Research Analysts & Marketing Specialists	127	169	43	3	\$27.50
13-1199	Business Operations Specialists, All Other	247	290	43	2	\$33.23
11-2022	Sales Managers	163	186	22	1	\$54.38
11-3021	Computer & Information Systems Managers	91	109	17	1	\$69.28
11-2021	Marketing Managers	55	65	10	1	\$55.29
11-3121	Human Resources Managers	52	60	8	1	\$56.38
13-1111	Management Analysts	98	117	19	1	\$39.35
11-1011	Chief Executives	47	56	9	0	\$96.09
ADMINISTRATIVE ASSISTANT & SECRETARIAL SCIENCE, GENERAL (CIP CODE 52.0401)						
43-9061	Office Clerks, General	1,303	1,400	97	81	\$15.66
43-4171	Receptionists & Information Clerks	547	651	104	43	\$12.92
43-6014	Secretaries & Administrative Assistants, Except Legal, Medical, & Executive	894	921	27	39	\$16.46
43-6011	Executive Secretaries & Executive Administrative Assistants	129	124	(4)	5	\$27.32
43-9021	Data Entry Keyers	64	60	(5)	4	\$14.81
43-4071	File Clerks	40	41	1	2	\$13.70
43-9022	Word Processors & Typists	9	7	(2)	0	\$16.62
CULINARY ARTS/CHEF TRAINING (CIP CODE 12.0503)						
35-1012	First-Line Supervisors of Food Preparation & Serving Workers	998	1,289	292	78	\$13.15
35-2014	Cooks, Restaurant	888	1,354	466	54	\$12.37
35-2012	Cooks, Institution & Cafeteria	172	201	29	8	\$13.07

SOC CODE	SOC TITLE	2022 JOBS	2032 JOBS	JOB CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
11-9051	Food Service Managers	99	140	40	7	\$26.21
35-1011	Chefs & Head Cooks	69	92	23	5	\$16.81
35-2015	Cooks, Short Order	80	95	15	4	\$9.82
35-2013	Cooks, Private Household	1	1	0	0	\$19.21
EARLY CHILDHOOD EDUCATION & TEACHING (CIP CODE 13.1210)						
25-9045	Teaching Assistants, Except Postsecondary	647	799	152	39	\$10.59
39-9011	Childcare Workers	672	717	45	38	\$10.07
25-2011	Preschool Teachers, Except Special Education	537	634	97	21	\$12.41
25-2021	Elementary School Teachers, Except Special Education	923	1,115	192	5	\$28.62
25-2012	Kindergarten Teachers, Except Special Education	94	112	18	4	\$28.57
25-9031	Instructional Coordinators	174	208	34	3	\$28.99
11-9032	Education Administrators, Kindergarten through Secondary	192	231	39	2	\$43.21
21-1021	Child, Family, & School Social Workers	124	146	22	1	\$20.94
25-2052	Special Education Teachers, Kindergarten & Elementary School	112	137	25	1	\$28.71
11-9031	Education & Childcare Administrators, Preschool & Daycare	66	74	8	1	\$22.26
25-2051	Special Education Teachers, Preschool	15	19	3	0	\$23.42
19-3034	School Psychologists	52	62	10	0	\$36.28
ELECTRICIAN (CIP CODE 46.0302)						
47-2111	Electricians	497	575	78	30	\$25.65
47-1011	First-Line Supervisors of Construction Trades & Extraction Workers	1,101	1,223	121	20	\$29.38
49-1011	First-Line Supervisors of Mechanics, Installers, & Repairers	347	392	45	12	\$31.44
47-3013	Helpers--Electricians	98	104	6	3	\$19.02
49-2098	Security & Fire Alarm Systems Installers	37	41	4	2	\$21.20
49-9097	Signal & Track Switch Repairers	8	9	1	0	\$29.41

Numbers may not sum due to rounding.

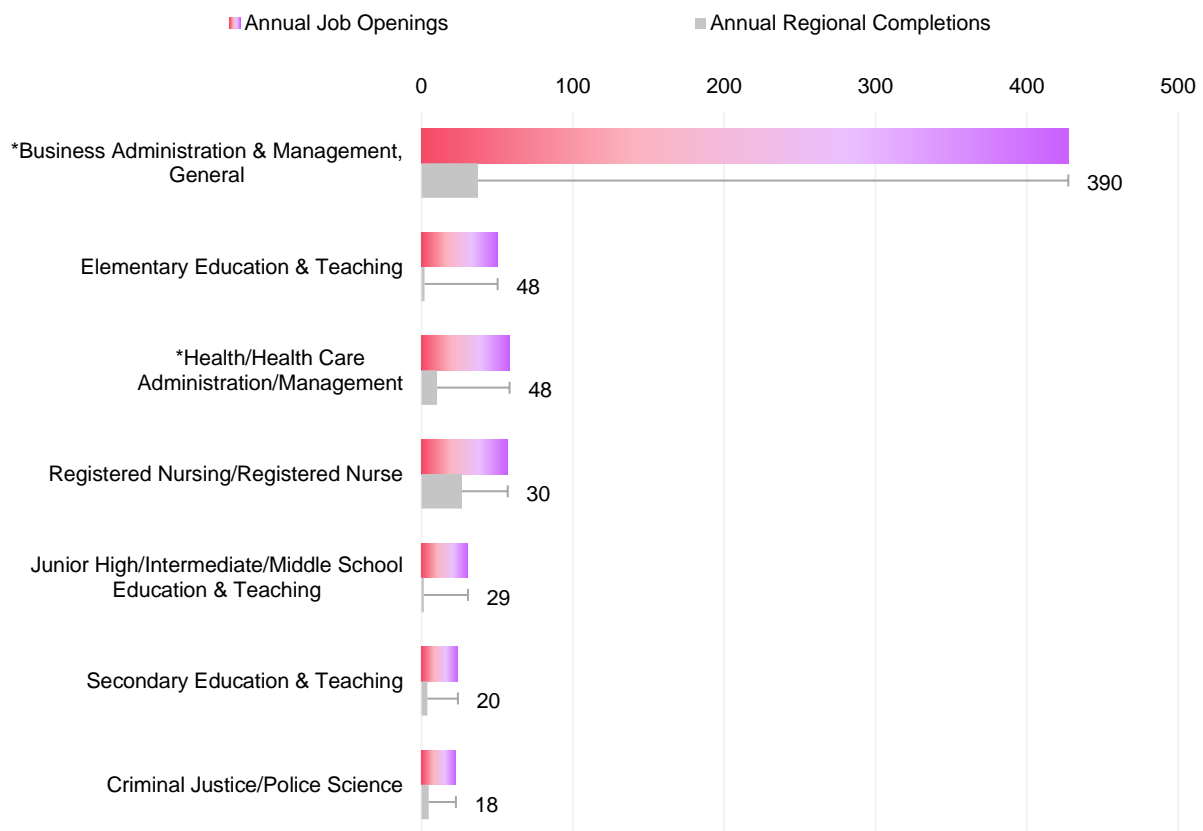
Source: Lightcast program demand gap model.

TRANSFER-TRACK AND BACHELOR'S DEGREE LEVEL ANALYSIS

The analysis in this section again evaluates a selection of associate degree level programs 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. Brazosport College offers five such transfer-track degree level programs, when the

programs are classified by their six-digit CIP codes.¹⁹ In addition, this section also evaluates the two bachelor's degree programs offered at Brazosport College (BC). BC is one of a few postsecondary educational institutions in the service area but is the only institution in the service area currently offering bachelor's degree level programs; however, colleges in the surrounding area are adding baccalaureate programs to their offerings, and there are a number of universities nearby as well. 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.

Figure 3.7: Transfer-Track and Bachelor's Degree Level Programs with a Gap



*These programs award completers with a bachelor's degree. All other programs in this section of the analysis award completers with an associate degree, but the demand for jobs considers a bachelor's degree level of education.

Source: Lightcast program demand gap model.

Figure 3.7 shows the programs with a significant gap. The Business Administration & Management, General program has the largest, followed by the Elementary Education &

¹⁹ Brazosport College selected five associate degree programs from the college's offerings to be analyzed as transfer-track programs in the sister study to this report concerning Southern Brazoria County. None of Alvin Community College's associate degree offerings were assumed to be transfer-track programs in this report.

Teaching and Health/Health Care Administration/Management programs. As shown in Table 3.5, there are 427 average annual job openings in the region for occupations related to the Business Administration & Management, General program. On average, Brazosport College graduates 37 annual completers. Programs with a significant gap or surplus have been highlighted in Table 3.5.

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

CIP CODE	CIP TITLE	ANNUAL JOB OPENINGS	ANNUAL BC COMPLETIONS	GAP OR SURPLUS	MEDIAN HOURLY WAGE
52.0201	*Business Administration & Management, General	427	37	390	\$32.53
13.1202	Elementary Education & Teaching	50	2	48	\$29.06
51.0701	*Health/Health Care Administration/Management	58	10	48	\$26.58
51.3801	Registered Nursing/Registered Nurse	57	27	30	\$36.65
13.1203	Junior High/Intermediate/Middle School Education & Teaching	31	2	29	\$29.19
13.1205	Secondary Education & Teaching	24	4	20	\$30.41
43.0107	Criminal Justice/Police Science	23	5	18	\$28.89

*These programs award completers with a bachelor's degree. All other programs in this section of the analysis 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: Lightcast program demand gap model.

Since Business Administration & Management, General was analyzed in the previous section, we will focus on Elementary Education & Teaching here. This program mapped to several occupations, such as elementary school teachers, except special education; kindergarten teachers, except special education; and education administrators, kindergarten through secondary (Table 3.6). The median hourly wage for this program is \$29.06, when weighted by the openings and median hourly wages for each occupation mapped to the program. For context, the Texas state minimum wage is \$7.25²⁰ per hour, and the living wage in Brazoria County is \$22.42 per hour for a household with two working adults and two children.²¹ This program is recommended for expansion because of the large gap and high median hourly wage. At Brazosport College the three education/teaching transfer-track programs are offered as one degree. Considering the job openings and completions together, the combined education/teaching program has a significant gap, which further highlights this program as an opportunity for expansion. A transfer-track program expansion requires a close examination of

²⁰ The Texas minimum wage as of January 1, 2023, is \$7.25 per hour. Source: Lightcast Complete Employment Data.

²¹ Living wage calculations provided by Dr. Amy K. Glasmeier and the Massachusetts Institute of Technology. See Appendix 8.

the process by which a student transfers to a four-year institution. For these programs to be successful these students must be able to transfer their credits with ease.²²

Using Table 3.6, this step-by-step process of evaluating occupational gaps by their median hourly wage rates can be applied to the other transfer-track and bachelor's degree programs with a significant gap. In general, gaps around occupations with high wages should be considered more noteworthy than gaps around occupations with low wages. Also, if the occupational forecasts around a certain gap are not positive, the gap may not be worth further consideration. Keep in mind that there could be other sources of skilled workers filling the gaps, such as unemployed workers or workers from outside the region.

Table 3.6: Occupations Mapped to the Bachelor's Degree Level Program with a Significant Gap

SOC CODE	SOC TITLE	2022 JOBS	2032 JOBS	JOB CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
*BUSINESS ADMINISTRATION & MANAGEMENT, GENERAL (CIP CODE 52.0201)						
11-1021	General & Operations Managers	1,739	2,013	274	82	\$42.41
43-4051	Customer Service Representatives	1,163	1,212	49	61	\$15.80
41-1011	First-Line Supervisors of Retail Sales Workers	945	1,053	108	39	\$18.87
13-2011	Accountants & Auditors	450	502	51	30	\$34.71
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, & Travel	432	491	59	29	\$26.03
13-1082	Project Management Specialists	573	636	62	28	\$42.92
43-1011	First-Line Supervisors of Office & Administrative Support Workers	715	778	63	28	\$26.23
41-4012	Sales Representatives, Wholesale & Manufacturing, Except Technical & Scientific Products	372	433	60	23	\$26.80
11-9199	Managers, All Other	521	610	89	18	\$36.81
13-1199	Business Operations Specialists, All Other	247	290	43	15	\$33.23
13-1071	Human Resources Specialists	250	297	47	13	\$27.22
13-1161	Market Research Analysts & Marketing Specialists	127	169	43	11	\$27.50
15-1232	Computer User Support Specialists	201	224	23	10	\$21.18
11-2022	Sales Managers	163	186	22	9	\$54.38
11-3031	Financial Managers	178	217	39	9	\$66.45
13-1111	Management Analysts	98	117	19	6	\$39.35
11-3021	Computer & Information Systems Managers	91	109	17	5	\$69.28
41-4011	Sales Representatives, Wholesale & Manufacturing, Technical & Scientific Products	76	88	12	5	\$36.44

²² As stated previously, further research must be conducted before making a final determination. Lightcast is available to conduct this research; see your Lightcast contact for details.

SOC CODE	SOC TITLE	2022 JOBS	2032 JOBS	JOB CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
11-2021	Marketing Managers	55	65	10	4	\$55.29
11-1011	Chief Executives	47	56	9	2	\$96.09
11-3121	Human Resources Managers	52	60	8	2	\$56.38

*This program and the Health/Health Care Administration/Management program award completers with a bachelor's degree. All other programs in this section of the analysis 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: Lightcast program demand gap model.

LIBERAL ARTS TRANSFER STUDENTS

A number of students attend college 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 college, a large portion of them receive an associate degree in general studies. In fact, over the past three years, 648 students, on average, have completed such a program.

Once liberal arts students leave college, 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 2022 and 2032, 2,340 job openings will require a bachelor's degree level of education.

This section shows the top occupations mapped to liberal arts programs, using Lightcast'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 3.7 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, customer service representatives, and secretaries & administrative assistants. Together, the three occupations account for 54% 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 college 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 3.7: Occupations Related to Liberal Arts Programs

SOC CODE	SOC TITLE	2022 JOBS	2032 JOBS	JOB CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
41-2031	Retail Salespersons	2,325	2,632	306	392	\$11.93
11-1021	General & Operations Managers	1,739	2,013	274	192	\$42.41
43-4051	Customer Service Representatives	1,163	1,212	49	174	\$15.80
43-6014	Secretaries & Administrative Assistants, Except Legal, Medical, & Executive	894	921	27	111	\$16.46
43-1011	First-Line Supervisors of Office & Administrative Support Workers	715	778	63	87	\$26.23
11-9199	Managers, All Other	521	610	89	53	\$36.81
13-2011	Accountants & Auditors	450	502	51	46	\$34.71
13-1071	Human Resources Specialists	250	297	47	31	\$27.22
13-1199	Business Operations Specialists, All Other	247	290	43	29	\$33.23
15-1232	Computer User Support Specialists	201	224	23	19	\$21.18
11-3031	Financial Managers	178	217	39	19	\$66.45
21-1093	Social & Human Service Assistants	121	148	27	18	\$17.58
15-1252	Software Developers	181	226	45	18	\$44.61
11-2022	Sales Managers	163	186	22	17	\$54.38
43-6011	Executive Secretaries & Executive Administrative Assistants	129	124	(4)	15	\$27.32
13-1111	Management Analysts	98	117	19	12	\$39.35
25-3099	Teachers & Instructors, All Other	36	53	17	7	\$21.75
11-2021	Marketing Managers	55	65	10	6	\$55.29
11-3121	Human Resources Managers	52	60	8	5	\$56.38
11-1011	Chief Executives	47	56	9	5	\$96.09

Source: Lightcast gap model.

SUMMARY

Across all award levels, there are a total of 17 programs associated with significant workforce gaps—with four programs having significant gaps at multiple levels.

The colleges of Northern Brazoria County offer 33 certificate level programs, 11 of which have a significant gap above the 50-openings level of significance, and one program at this level has a significant surplus of completions. With regards to specific programmatic results, the following certificate level programs should be considered for expansion due to their gap and median hourly wage: Business Administration & Management, General; Welding Technology/Welder; Machine Tool Technology/Machinist; Electrician; Heating, Air Conditioning, Ventilation & Refrigeration Maintenance Technology/Technician; and

Construction Engineering Technology/Technician. The three largest certificate level programs in terms of average annual completions are Chemical Technology/Technician, Nursing Assistant/Aide & Patient Care Assistant/Aide, and Welding Technology/Welder. Despite Chemical Manufacturing being a key industry subsector in the region, Chemical Technology/Technician has a significant surplus of 179 completers. This surplus coupled with the slight decline in employment projected over the next ten years for the industry suggest that colleges maintain communication with major regional employers to ensure students are finding employment and employers are well-staffed. The Nursing Assistant/Aide & Patient Care Assistant/Aide program has a significant gap, but the median hourly wage is below the living wage for two adults (both working) and two children in Brazoria County. Colleges should consider how this program and subsequent work experience can be used as a stepping stone by graduates to higher wage occupations along their career path. The certificate level programs with the top three largest gaps are:

- General Office Occupations & Clerical Services (gap of 434; median hourly wage \$16.02)
- Business Administration & Management, General (gap of 336; median hourly wage \$28.47)
- Culinary Arts/Chef Training (gap of 299; median hourly wage \$13.22)

The colleges of Northern Brazoria County offer 49 associate degree level programs, five of which have a significant gap above the 50-openings level of significance, and two programs at this award level have a significant surplus of completions. With regards to specific programmatic results, the following associate degree programs should be considered for expansion due to their gap and median hourly wage: Business Administration & Management, General and Electrician. The three largest associate degree programs in terms of average annual completions are Registered Nursing/Registered Nurse, Chemical Technology/Technician, and Business/Commerce, General. Both the Registered Nursing/Registered Nurse and Chemical Technology/Technician programs have a significant surplus of completions. Chemical Technology/Technician was discussed in the certificate level analysis. There are more job openings for the Registered Nursing/Registered Nurse program at the bachelor's degree level and these program completers are likely finding employment outside Northern Brazoria County. While not a significant gap, the Business/Commerce, General program has a median hourly wage of \$40.76, the second highest of all the associate degree programs offered in the region. Business and administration/management programs can lead to leadership positions in a variety of industries; colleges are advised to consider the industry mix of their service region to align curriculum to meet the needs of the region and train students most effectively to be competitive in the local labor market. The associate degree programs with the top three largest gaps are:

- Business Administration & Management, General (gap of 218; median hourly wage \$25.20)
- Administrative Assistant & Secretarial Science, General (gap of 158; median hourly wage \$15.44)

- Culinary Arts/Chef Training (gap of 148; median hourly wage \$13.48)

Brazosport College offers five transfer-track degree programs.²³ 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. Brazosport College's two bachelor's degree programs are also analyzed in this section. Of these programs, one has a significant gap above the 50-openings level of significance. With regards to specific programmatic results, the following transfer-track degree programs should be considered for expansion due to their gap and median hourly wage: Business Administration & Management, General; Elementary Education & Teaching; and Health/Health Care Administration/Management. At Brazosport College the three education/teaching transfer-track programs are offered as one degree. Considering the job openings and completions together, the combined education/teaching program has a significant gap, which further highlights this program as an opportunity for expansion. The three largest transfer-track degree programs in terms of average annual completions are Business Administration & Management, General; Registered Nursing/Registered Nurse; and Health/Health Care Administration/Management. All three programs have a gap at this level and a median hourly wage of over \$26.00. The Business Administration & Management, General and Health/Health Care Administration/Management programs are recommended for expansion given their large gaps and high median hourly wages. A transfer-track program expansion requires a close examination of the process by which a student transfers to a four-year institution. For these programs to be successful these students must be able to transfer their credits with ease. The transfer-track degree level programs with the three largest gaps are:

- Business Administration & Management, General (gap of 390; median hourly wage \$32.53)
- Elementary Education & Teaching (gap of 48; median hourly wage \$29.06)
- Health/Health Care Administration/Management (gap of 48; median hourly wage \$26.58)

A liberal arts program expansion is not recommended at this time, but college 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 Northern Brazoria County, and the colleges' liberal arts programs serve as a starting point to students' future career goals.

²³ Brazosport College selected five associate degree programs from the college's offerings to be analyzed as transfer-track programs in the sister study to this report concerning Southern Brazoria County. None of Alvin Community College's associate degree offerings were assumed to be transfer-track programs in this report.



New Program Additions

Thus far, the analysis has centered around programs offered by colleges in Northern Brazoria County. This chapter looks at workforce gaps that exist within occupations that these 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' administration will still need to undergo steps before deciding whether these programs would be a good fit for the college(s) 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

Twenty-three 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 Northern Brazoria County (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.

As shown, there is diversity in the types of occupations in the table, with a limited number of job openings in the county for some. Although some occupations have relatively few openings on an annual basis, there may be opportunities to train for multiple occupations found in the table through a single program. The most represented occupational group in the table is installation, maintenance, & repair occupations (SOC 49-0000), with six occupations and about 670 jobs in the region in 2022. The second most represented occupation group is production and is followed by healthcare support.

Notably, a number of occupations relating to construction trades and civil engineering are identified as certificate level programmatic areas of opportunity. This aligns with these three key industries identified in Chapter 2: Heavy & Civil Engineering Construction, Construction of

Buildings, and Building & Garden Equipment & Supplies Dealers. These industry subsectors represent some of the region's economic strengths and offer more opportunities for graduates.

The colleges should prioritize which occupations would result in the best employment outcomes for students. The top three opportunities by median hourly wage are petroleum pump system operators, refinery operators, & gaugers; first-line supervisors of production & operating workers; and electrical power-line installers & repairers. There are also a number of opportunities for the colleges to support occupations experiencing positive employment growth over the next decade. The top three opportunities by percent job change from 2022 to 2032 are wind turbine service technicians, pest control workers, and medical assistants.

Table 4.1: Programmatic Areas of Opportunity at the Certificate Level

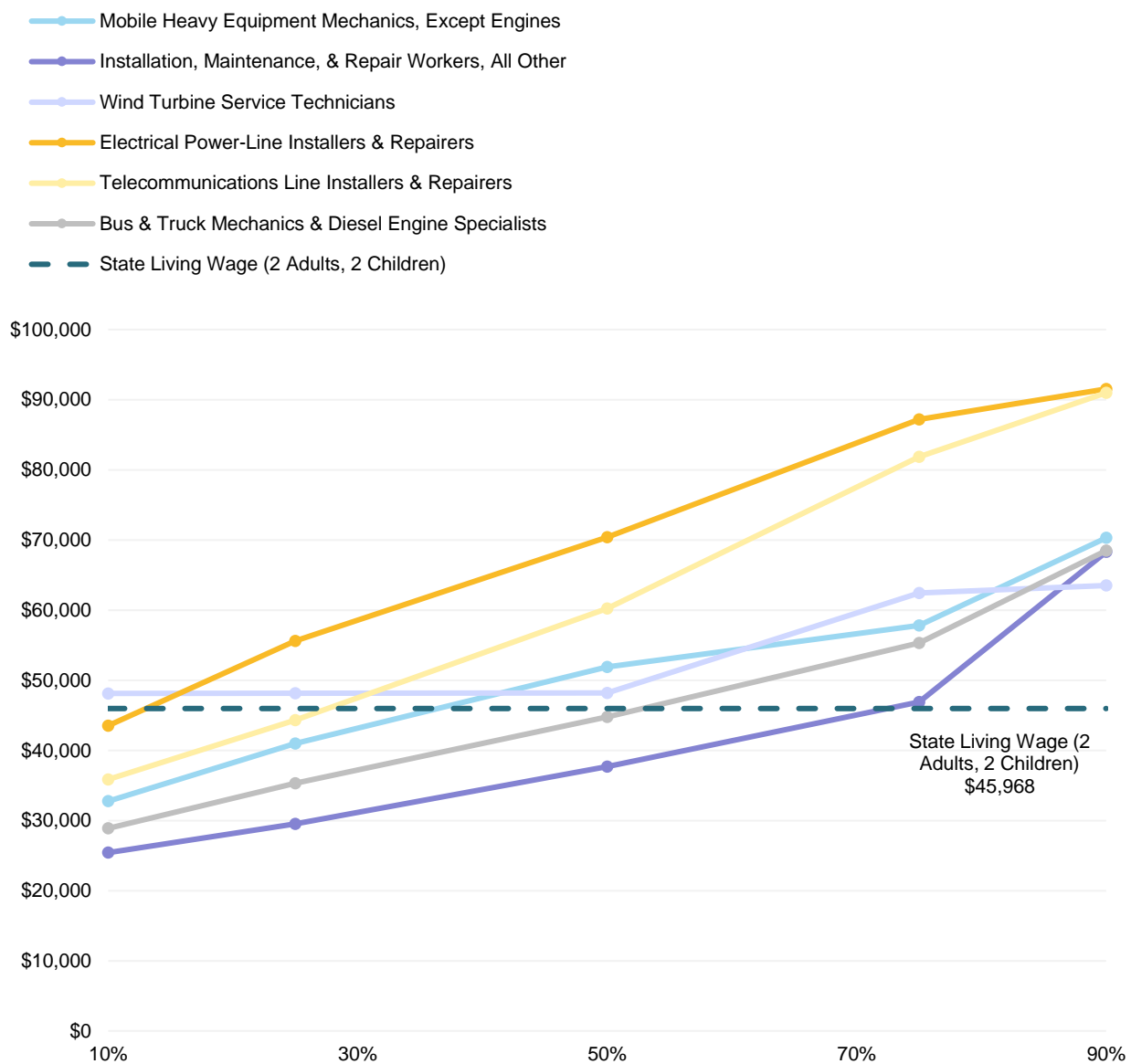
SOC TITLE	2022 JOBS	% JOB CHANGE	ANNUAL JOB OPENINGS	ANNUAL COMPL.	GAP	MEDIAN HOURLY WAGE
Construction Laborers	2,145	14.1%	145	0	145	\$16.09
Medical Assistants	512	41.1%	65	0	65	\$15.93
Operating Engineers & Other Construction Equipment Operators	622	19.2%	58	0	58	\$20.83
Carpenters	798	(2.1%)	46	0	46	\$19.42
Dental Assistants	299	16.6%	33	0	33	\$17.24
First-Line Supervisors of Production & Operating Workers	380	1.2%	26	0	26	\$34.19
First-Line Supervisors of Transportation & Material Moving Workers, Except Aircraft Cargo Handling Supervisors	264	12.6%	24	0	24	\$24.41
Inspectors, Testers, Sorters, Samplers, & Weighers	301	0.1%	24	0	24	\$17.71
Mobile Heavy Equipment Mechanics, Except Engines	195	18.9%	17	0	17	\$24.96
Electrical Power-Line Installers & Repairers	134	41.1%	14	0	14	\$33.84
Bus & Truck Mechanics & Diesel Engine Specialists	142	6.4%	10	0	10	\$21.52
Farmers, Ranchers, & Other Agricultural Managers	141	13.1%	9	0	9	\$18.42
Pest Control Workers	49	46.3%	8	0	8	\$19.63
Tellers	109	(12.3%)	7	0	7	\$15.93
Installation, Maintenance, & Repair Workers, All Other	89	10.5%	7	0	7	\$18.12
Telecommunications Line Installers & Repairers	65	27.2%	7	0	7	\$28.96
Packaging & Filling Machine Operators & Tenders	103	(4.4%)	7	0	7	\$16.47
Massage Therapists	63	36.2%	7	0	7	\$18.80
Healthcare Support Workers, All Other	59	19.8%	6	0	6	\$17.04
First-Line Supervisors of Housekeeping & Janitorial Workers	64	13.4%	6	0	6	\$17.11
Petroleum Pump System Operators, Refinery Operators, & Gaugers	84	(17.5%)	5	0	5	\$34.65

SOC TITLE	2022 JOBS	% JOB CHANGE	ANNUAL JOB OPENINGS	ANNUAL COMPL.	GAP	MEDIAN HOURLY WAGE
Mixing & Blending Machine Setters, Operators, & Tenders	78	(11.2%)	5	0	5	\$17.94
Wind Turbine Service Technicians	44	50.5%	5	0	5	\$23.17

Numbers may not sum due to rounding.

Source: Lightcast program demand gap model.

Figure 4.1: Percentile Wage Rates of Production Occupations Identified as New Program Opportunities



Source: Employees & Self-Employed 2023.1.

The annual wage rates of installation, maintenance, & repair occupations from Table 4.1 are shown in Figure 4.1, with an emphasis on low and high wage-earners. For those people in Northern Brazoria County employed as electrical power-line installers & repairers, annual wage rates are the highest, except for wind turbine service technicians at the 10th percentile. Notably, the difference between the lowest wage earners in the occupation (10th percentile) and the highest (90th percentile) is about \$48,000. For college students, these results may indicate that time spent working as electrical power-line installers & repairers could lead to progressively higher wages throughout their careers. On the other hand, there is about a \$15,000 difference between the lowest and highest wage earners for wind turbine service technicians. 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 five occupations in the table, three are related to healthcare practitioners & technical occupations (SOC 29-0000), with about 190 jobs in the region. While the gaps for many of these occupations are smaller in size, these occupations provide critical healthcare services to residents in Northern Brazoria County 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	2022 JOBS	% JOB CHANGE	ANNUAL JOB OPENINGS	ANNUAL COMPL.	GAP	MEDIAN HOURLY WAGE
Physical Therapist Assistants	61	65.7%	9	0	9	\$38.67
Occupational Therapy Assistants	35	55.4%	6	0	6	\$40.45
Dental Hygienists	92	26.0%	5	0	5	\$35.13
Radiologic Technologists & Technicians	62	26.3%	4	0	4	\$27.47
Surgical Technologists	37	14.4%	2	0	2	\$25.30

Numbers may not sum due to rounding.

Source: Lightcast program demand gap model.

ADDITIONS AT THE TRANSFER-TRACK DEGREE LEVEL

As shown in Table 4.3, 10 occupations have been identified as transfer-track degree level programmatic areas of opportunity. The select occupations present unmet annual job openings within Northern Brazoria County (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.

The table shows a diverse set of occupations, with a limited number of job openings in the county for some. Although some occupations have relatively few openings on an annual basis, there may be opportunities to train for multiple occupations found in the table through a single program. The most represented occupational group in the table is sales & related occupations (SOC 41-0000), with four occupations and about 440 jobs in the region in 2022. The second most represented occupation group is architecture & engineering and is followed by business & financial operations. Some of the occupations could be trained for through a Business Administration, General program, however, colleges in the region could also explore offering more specific programs, such as Finance, Insurance, or Real Estate.

Colleges should prioritize which occupations would result in the best employment outcomes for students. The top three opportunities by median hourly wage are mechanical engineers, industrial engineers, and civil engineers. There are also a number of opportunities for colleges to support occupations experiencing positive employment growth over the next decade. The top three opportunities by percent job change from 2022 to 2032 are training & development specialists; real estate sales agents; and information & record clerks, all other.

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

SOC TITLE	2022 JOBS	% JOB CHANGE	ANNUAL JOB OPENINGS	ANNUAL COMPL.	GAP	MEDIAN HOURLY WAGE
Civil Engineers	208	5.8%	10	0	10	\$44.90
Buyers & Purchasing Agents	167	2.6%	8	0	8	\$27.78
Insurance Sales Agents	131	14.3%	7	0	7	\$21.75
Training & Development Specialists	141	16.4%	7	0	7	\$27.38
Real Estate Sales Agents	109	16.0%	6	0	6	\$16.84
Mechanical Engineers	130	1.9%	5	0	5	\$56.48
Industrial Engineers	126	3.1%	5	0	5	\$46.17
Securities, Commodities, & Financial Services Sales Agents	92	8.6%	5	0	5	\$33.09
Information & Record Clerks, All Other	82	15.3%	5	0	5	\$15.79
First-Line Supervisors of Non-Retail Sales Workers	106	10.8%	5	0	5	\$32.65

Numbers may not sum due to rounding.

Source: Lightcast program demand gap model.

SUMMARY

Twenty-three certificate level programmatic areas of opportunity have been identified in the program demand gap analysis, many of which are related to installation, maintenance, & repair 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 the focus is on job openings in Northern Brazoria County or Texas. Another 10 transfer-track degree level programmatic areas of opportunity were identified in the program demand gap analysis, many of which are related to sales & related occupations. Some program additions may be 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 Lightcast industry data have various sources depending on the class of worker. Lightcast 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 2022 and 2032. Job openings are calculated for each occupation mapped to a program and are de-duplicated across programs mapped to the same occupation using Lightcast'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 county'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, Lightcast treats establishments with public and private sector ownership differently. In Lightcast 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, Lightcast 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 Lightcast and standard SOC codes. Primarily, Lightcast 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, Lightcast 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. Lightcast 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 Lightcast 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. Lightcast'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. Lightcast data are used to calculate the projected number of annual job openings from 2022 to 2032. 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, Lightcast gathers and integrates economic, labor market, demographic, and educational data from over 40 government and private-sector sources. In doing so, Lightcast creates a comprehensive and current database that includes both published data and detailed estimates, with full coverage of the U.S.

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

APPENDIX 3: Additional Jobs Data

INDUSTRY COMPOSITION

Table A3.1: Current and Projected Jobs by Industry Subsector in Northern Brazoria County, 2022 and 2032

NAICS CODE	NAICS TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE
903	Local Government	8,679	10,164	1,485	17.1%
722	Food Services & Drinking Places	8,341	10,872	2,532	30.4%
237	Heavy & Civil Engineering Construction	5,868	7,166	1,298	22.1%
621	Ambulatory Health Care Services	5,561	7,568	2,007	36.1%
238	Specialty Trade Contractors	3,332	3,417	86	2.6%
561	Administrative & Support Services	3,237	3,729	492	15.2%
236	Construction of Buildings	2,982	2,909	(74)	(2.5%)
452	General Merchandise Stores	2,731	2,883	152	5.6%
541	Professional, Scientific, & Technical Services	2,098	2,206	108	5.2%
445	Food & Beverage Stores	2,086	2,365	279	13.4%
325	Chemical Manufacturing	2,072	1,793	(279)	(13.5%)
624	Social Assistance	1,896	2,402	506	26.7%
902	State Government	1,424	1,269	(155)	(10.9%)
444	Building Material & Garden Equipment & Supplies Dealers	1,320	1,560	240	18.2%
423	Merchant Wholesalers, Durable Goods	1,272	1,388	116	9.1%
623	Nursing & Residential Care Facilities	1,263	1,320	56	4.5%
332	Fabricated Metal Product Manufacturing	1,206	1,350	144	11.9%
901	Federal Government	1,180	1,326	146	12.4%
441	Motor Vehicle & Parts Dealers	1,099	1,233	135	12.3%
811	Repair & Maintenance	1,092	1,279	188	17.2%
447	Gasoline Stations	1,032	1,162	130	12.6%
611	Educational Services	1,015	1,534	518	51.0%
813	Religious, Grantmaking, Civic, Professional, & Similar Organizations	968	994	26	2.6%
713	Amusement, Gambling, & Recreation Industries	753	929	176	23.4%
484	Truck Transportation	739	648	(90)	(12.2%)
446	Health & Personal Care Stores	693	789	96	13.8%

NAICS CODE	NAICS TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE
531	Real Estate	628	690	62	9.9%
522	Credit Intermediation & Related Activities	626	627	1	0.1%
448	Clothing & Clothing Accessories Stores	598	655	57	9.5%
424	Merchant Wholesalers, Nondurable Goods	588	815	227	38.5%
212	Mining (except Oil & Gas)	557	685	128	23.1%
488	Support Activities for Transportation	520	617	97	18.7%
814	Private Households	500	437	(63)	(12.6%)
812	Personal & Laundry Services	494	607	113	22.9%
211	Oil & Gas Extraction	483	563	80	16.7%
333	Machinery Manufacturing	436	356	(80)	(18.4%)
524	Insurance Carriers & Related Activities	392	424	31	8.0%
532	Rental & Leasing Services	349	385	36	10.4%
622	Hospitals	340	238	(102)	(30.0%)
451	Sporting Goods, Hobby, Musical Instrument, & Book Stores	336	410	73	21.8%
562	Waste Management & Remediation Services	321	420	99	30.9%
711	Performing Arts, Spectator Sports, & Related Industries	305	561	256	84.0%
111	Crop Production	305	355	50	16.4%
453	Miscellaneous Store Retailers	300	277	(23)	(7.8%)
324	Petroleum & Coal Products Manufacturing	296	204	(92)	(31.2%)
721	Accommodation	261	402	141	54.2%
443	Electronics & Appliance Stores	258	268	10	3.8%
442	Furniture & Home Furnishings Stores	234	299	65	27.9%
213	Support Activities for Mining	222	134	(88)	(39.6%)
482	Rail Transportation	215	271	56	25.9%
221	Utilities	209	272	63	30.0%
311	Food Manufacturing	207	141	(66)	(31.7%)
493	Warehousing & Storage	187	197	10	5.3%
335	Electrical Equipment, Appliance, & Component Manufacturing	183	126	(57)	(31.3%)
327	Nonmetallic Mineral Product Manufacturing	175	160	(14)	(8.2%)
115	Support Activities for Agriculture & Forestry	138	189	50	36.6%
454	Nonstore Retailers	133	96	(37)	(27.5%)
336	Transportation Equipment Manufacturing	112	194	82	72.7%
425	Wholesale Electronic Markets & Agents & Brokers	85	124	38	45.0%

NAICS CODE	NAICS TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE
517	Telecommunications	85	38	(47)	(54.9%)
511	Publishing Industries (except Internet)	81	67	(14)	(17.0%)
523	Securities, Commodity Contracts, & Other Financial Investments & Related Activities	80	101	21	26.7%
512	Motion Picture & Sound Recording Industries	69	89	20	28.5%
321	Wood Product Manufacturing	55	84	29	51.8%
326	Plastics & Rubber Products Manufacturing	53	52	(1)	(1.7%)
337	Furniture & Related Product Manufacturing	52	80	28	53.5%
323	Printing & Related Support Activities	52	29	(23)	(44.5%)
483	Water Transportation	51	85	34	67.4%
334	Computer & Electronic Product Manufacturing	49	43	(6)	(12.4%)
486	Pipeline Transportation	48	55	7	15.2%
313	Textile Mills	43	71	28	65.7%
551	Management of Companies & Enterprises	42	60	18	41.9%
112	Animal Production & Aquaculture	35	30	(5)	(14.0%)
316	Leather & Allied Product Manufacturing	34	58	25	73.5%
491	Postal Service	33	52	19	57.5%
312	Beverage & Tobacco Product Manufacturing	26	54	28	109.4%
314	Textile Product Mills	25	25	(0)	(0.4%)
339	Miscellaneous Manufacturing	25	23	(2)	(8.3%)
485	Transit & Ground Passenger Transportation	24	52	28	115.0%
492	Couriers & Messengers	22	29	7	31.0%
712	Museums, Historical Sites, & Similar Institutions	16	38	22	134.5%
518	Data Processing, Hosting, & Related Services	9	10	0	2.9%
481	Air Transportation	9	1	(8)	(87.9%)
519	Other Information Services	7	10	2	32.2%
331	Primary Metal Manufacturing	7	5	(2)	(28.1%)
515	Broadcasting (except Internet)	6	4	(2)	(39.1%)
533	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	4	8	3	70.5%
322	Paper Manufacturing	3	2	(0)	(5.9%)
487	Scenic & Sightseeing Transportation	3	0	(3)	(84.5%)
114	Fishing, Hunting & Trapping	2	5	3	105.8%
525	Funds, Trusts, & Other Financial Vehicles	2	4	2	79.8%
113	Forestry & Logging	0	0	0	0.0%

NAICS CODE	NAICS TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE
315	Apparel Manufacturing	0	0	0	47.5%
521	Monetary Authorities-Central Bank	0	0	0	0.0%
Total		75,984	87,718	11,731	15.4%

Source: Employees & Self-Employed 2023.1.

Table A3.2: Employment Concentration (LQ) by Industry Subsector in Northern Brazoria County, 2022 and 2032

NAICS CODE	NAICS TITLE	2022 LQ	2032 LQ
237	Heavy & Civil Engineering Construction	9.80	10.27
211	Oil & Gas Extraction	9.34	10.51
212	Mining (except Oil & Gas)	6.76	7.66
324	Petroleum & Coal Products Manufacturing	6.20	3.87
325	Chemical Manufacturing	5.08	3.81
491	Postal Service	4.74	4.89
236	Construction of Buildings	2.82	2.37
316	Leather & Allied Product Manufacturing	2.39	4.03
447	Gasoline Stations	2.35	2.62
482	Rail Transportation	2.18	2.49
486	Pipeline Transportation	2.12	2.09
444	Building Material & Garden Equipment & Supplies Dealers	1.99	2.09
213	Support Activities for Mining	1.95	0.87
452	General Merchandise Stores	1.94	1.86
332	Fabricated Metal Product Manufacturing	1.84	1.86
483	Water Transportation	1.77	2.60
722	Food Services & Drinking Places	1.57	1.68
532	Rental & Leasing Services	1.45	1.43
562	Waste Management & Remediation Services	1.44	1.61
621	Ambulatory Health Care Services	1.44	1.57
445	Food & Beverage Stores	1.43	1.57
446	Health & Personal Care Stores	1.42	1.54
488	Support Activities for Transportation	1.39	1.42
903	Local Government	1.36	1.45
811	Repair & Maintenance	1.35	1.39

NAICS CODE	NAICS TITLE	2022 LQ	2032 LQ
451	Sporting Goods, Hobby, Musical Instrument, & Book Stores	1.26	1.52
443	Electronics & Appliance Stores	1.25	1.41
238	Specialty Trade Contractors	1.23	1.13
441	Motor Vehicle & Parts Dealers	1.18	1.19
448	Clothing & Clothing Accessories Stores	1.13	1.15
442	Furniture & Home Furnishings Stores	1.07	1.26
335	Electrical Equipment, Appliance, & Component Manufacturing	1.00	0.59
713	Amusement, Gambling, & Recreation Industries	0.97	1.00
313	Textile Mills	0.92	1.62
623	Nursing & Residential Care Facilities	0.92	0.86
624	Social Assistance	0.91	0.87
327	Nonmetallic Mineral Product Manufacturing	0.91	0.75
484	Truck Transportation	0.89	0.69
333	Machinery Manufacturing	0.87	0.72
423	Merchant Wholesalers, Durable Goods	0.85	0.82
711	Performing Arts, Spectator Sports, & Related Industries	0.83	1.19
221	Utilities	0.82	1.02
111	Crop Production	0.77	0.79
813	Religious, Grantmaking, Civic, Professional, & Similar Organizations	0.75	0.68
561	Administrative & Support Services	0.71	0.71
814	Private Households	0.71	0.56
453	Miscellaneous Store Retailers	0.65	0.59
902	State Government	0.60	0.48
424	Merchant Wholesalers, Nondurable Goods	0.59	0.73
531	Real Estate	0.59	0.57
115	Support Activities for Agriculture & Forestry	0.56	0.61
901	Federal Government	0.53	0.55
611	Educational Services	0.51	0.63
522	Credit Intermediation & Related Activities	0.50	0.45
812	Personal & Laundry Services	0.48	0.48
314	Textile Product Mills	0.47	0.46
533	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	0.45	0.72
541	Professional, Scientific, & Technical Services	0.39	0.34

NAICS CODE	NAICS TITLE	2022 LQ	2032 LQ
425	Wholesale Electronic Markets & Agents & Brokers	0.36	0.50
454	Nonstore Retailers	0.36	0.20
721	Accommodation	0.34	0.41
512	Motion Picture & Sound Recording Industries	0.30	0.31
524	Insurance Carriers & Related Activities	0.29	0.27
323	Printing & Related Support Activities	0.29	0.19
337	Furniture & Related Product Manufacturing	0.28	0.40
321	Wood Product Manufacturing	0.27	0.36
311	Food Manufacturing	0.27	0.16
517	Telecommunications	0.27	0.12
712	Museums, Historical Sites, & Similar Institutions	0.23	0.41
493	Warehousing & Storage	0.22	0.19
511	Publishing Industries (except Internet)	0.21	0.16
487	Scenic & Sightseeing Transportation	0.21	0.02
525	Funds, Trusts, & Other Financial Vehicles	0.19	0.22
312	Beverage & Tobacco Product Manufacturing	0.17	0.32
114	Fishing, Hunting & Trapping	0.16	0.28
523	Securities, Commodity Contracts, & Other Financial Investments & Related Activities	0.16	0.17
326	Plastics & Rubber Products Manufacturing	0.16	0.14
112	Animal Production & Aquaculture	0.16	0.13
336	Transportation Equipment Manufacturing	0.15	0.23
622	Hospitals	0.15	0.09
334	Computer & Electronic Product Manufacturing	0.10	0.08
485	Transit & Ground Passenger Transportation	0.09	0.16
339	Miscellaneous Manufacturing	0.08	0.06
518	Data Processing, Hosting, & Related Services	0.05	0.04
515	Broadcasting (except Internet)	0.05	0.03
551	Management of Companies & Enterprises	0.04	0.05
492	Couriers & Messengers	0.04	0.04
519	Other Information Services	0.04	0.04
331	Primary Metal Manufacturing	0.04	0.03
481	Air Transportation	0.04	0.00
322	Paper Manufacturing	0.02	0.01

NAICS CODE	NAICS TITLE	2022 LQ	2032 LQ
315	Apparel Manufacturing	0.00	0.01
113	Forestry & Logging	0.00	0.00
521	Monetary Authorities-Central Bank	0.00	0.00

Source: Employees & Self-Employed 2023.1.

INDUSTRY STAFFING PATTERNS

The following tables show the staffing patterns of the industry subsectors discussed in Chapter 2. The Typical Ed Level column describes the typical award level held by workers 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 Northern Brazoria County for the Top 25 Occupations Related to the Heavy & Civil Engineering Construction Industry Subsector

SOC TITLE	2022 JOBS	2032 JOBS	JOB OPENINGS	% JOBS IN INDUSTRY	MEDIAN HOURLY WAGE	TYPICAL ED LEVEL
Construction Laborers	1,224	1,499	258	20.9%	\$16.09	HS/GED
First-Line Supervisors of Construction Trades & Extraction Workers	522	634	123	8.9%	\$29.38	HS/GED
Operating Engineers & Other Construction Equipment Operators	413	508	82	7.0%	\$20.83	HS/GED
Construction Managers	304	399	80	5.2%	\$36.66	BACH
Carpenters	238	259	76	4.0%	\$19.42	HS/GED
Plumbers, Pipefitters, & Steamfitters	193	239	54	3.3%	\$23.92	HS/GED
Heavy & Tractor-Trailer Truck Drivers	184	229	152	3.1%	\$20.57	HS/GED
Welders, Cutters, Solderers, & Brazers	143	177	67	2.4%	\$21.30	HS/GED
Managers, All Other	135	177	53	2.3%	\$36.81	BACH
General & Operations Managers	130	160	192	2.2%	\$42.41	BACH
Project Management Specialists	126	155	55	2.2%	\$42.92	BACH
Pipelayers	114	120	13	1.9%	\$16.69	HS/GED
Painters, Construction & Maintenance	114	125	33	1.9%	\$16.82	HS/GED
Office Clerks, General	111	128	181	1.9%	\$15.66	CERT

SOC TITLE	2022 JOBS	2032 JOBS	JOB OPENINGS	% JOBS IN INDUSTRY	MEDIAN HOURLY WAGE	TYPICAL ED LEVEL
Electrical Power-Line Installers & Repairers	101	137	19	1.7%	\$33.84	HS/GED
Electricians	79	100	63	1.3%	\$25.65	HS/GED
Mobile Heavy Equipment Mechanics, Except Engines	71	88	24	1.2%	\$24.96	HS/GED
Secretaries & Administrative Assistants, Except Legal, Medical, & Executive	62	68	111	1.1%	\$16.46	CERT
First-Line Supervisors of Mechanics, Installers, & Repairers	56	73	39	1.0%	\$31.44	HS/GED
Bookkeeping, Accounting, & Auditing Clerks	53	60	89	0.9%	\$20.14	CERT
Cost Estimators	47	55	16	0.8%	\$32.56	BACH
Laborers & Freight, Stock, & Material Movers, Hand	45	56	155	0.8%	\$13.60	HS/GED
Earth Drillers, Except Oil & Gas	45	55	7	0.8%	\$20.83	HS/GED
Telecommunications Line Installers & Repairers	44	64	10	0.7%	\$28.96	HS/GED
Excavating & Loading Machine & Dragline Operators, Surface Mining	42	53	20	0.7%	\$20.63	HS/GED

Source: Employees & Self-Employed 2023.1.

Table A3.4: Employment Projections in Northern Brazoria County for the Top 25 Occupations Related to the Construction of Buildings Industry Subsector

SOC TITLE	2022 JOBS	2032 JOBS	JOB OPENINGS	% JOBS IN INDUSTRY	MEDIAN HOURLY WAGE	TYPICAL ED LEVEL
Construction Laborers	465	453	258	15.6%	\$16.09	HS/GED
Carpenters	333	298	76	11.2%	\$19.42	HS/GED
Construction Managers	314	327	80	10.5%	\$36.66	BACH
First-Line Supervisors of Construction Trades & Extraction Workers	284	283	123	9.5%	\$29.38	HS/GED
Project Management Specialists	181	191	55	6.1%	\$42.92	BACH
Managers, All Other	102	93	53	3.4%	\$36.81	BACH
General & Operations Managers	96	101	192	3.2%	\$42.41	BACH
Painters, Construction & Maintenance	88	69	33	3.0%	\$16.82	HS/GED
Office Clerks, General	67	65	181	2.3%	\$15.66	CERT
Civil Engineers	55	59	16	1.8%	\$44.90	BACH
Electricians	52	49	63	1.8%	\$25.65	HS/GED
Plumbers, Pipefitters, & Steamfitters	52	47	54	1.7%	\$23.92	HS/GED
Cost Estimators	48	48	16	1.6%	\$32.56	BACH
Operating Engineers & Other Construction Equipment Operators	41	41	82	1.4%	\$20.83	HS/GED

SOC TITLE	2022 JOBS	2032 JOBS	JOB OPENINGS	% JOBS IN INDUSTRY	MEDIAN HOURLY WAGE	TYPICAL ED LEVEL
Secretaries & Administrative Assistants, Except Legal, Medical, & Executive	41	37	111	1.4%	\$16.46	CERT
Structural Iron & Steel Workers	41	42	10	1.4%	\$21.67	HS/GED
Bookkeeping, Accounting, & Auditing Clerks	40	38	89	1.3%	\$20.14	CERT
Cement Masons & Concrete Finishers	39	38	15	1.3%	\$19.88	HS/GED
Accountants & Auditors	30	31	46	1.0%	\$34.71	BACH
Welders, Cutters, Solderers, & Brazers	25	26	67	0.8%	\$21.30	HS/GED
Drywall & Ceiling Tile Installers	24	22	6	0.8%	\$19.60	NONE
Sales Representatives of Services, Except Advertising, Insurance, Financial Services, & Travel	23	24	55	0.8%	\$26.03	BACH
Heating, Air Conditioning, & Refrigeration Mechanics & Installers	19	16	26	0.6%	\$20.95	HS/GED
Heavy & Tractor-Trailer Truck Drivers	16	17	152	0.5%	\$20.57	HS/GED
Roofers	16	12	6	0.5%	\$18.82	NONE

Source: Employees & Self-Employed 2023.1.

Table A3.5: Employment Projections in Northern Brazoria County for the Top 25 Occupations Related to the General Merchandise Stores Industry Subsector

SOC TITLE	2022 JOBS	2032 JOBS	JOB OPENINGS	% JOBS IN INDUSTRY	MEDIAN HOURLY WAGE	TYPICAL ED LEVEL
Retail Salespersons	598	633	392	21.9%	\$11.93	HS/GED
Stockers & Order Fillers	591	671	305	21.6%	\$14.24	HS/GED
Cashiers	522	525	565	19.1%	\$10.65	HS/GED
First-Line Supervisors of Retail Sales Workers	236	247	121	8.6%	\$18.87	HS/GED
Customer Service Representatives	161	156	174	5.9%	\$15.80	CERT
Sales & Related Workers, All Other	119	125	28	4.3%	\$13.17	BACH
First-Line Supervisors of Office & Administrative Support Workers	50	49	87	1.8%	\$26.23	CERT
Laborers & Freight, Stock, & Material Movers, Hand	47	50	155	1.7%	\$13.60	HS/GED
Janitors & Cleaners, Except Maids & Housekeeping Cleaners	34	36	153	1.2%	\$12.33	HS/GED
Pharmacy Technicians	32	36	32	1.2%	\$16.98	CERT
General & Operations Managers	25	26	192	0.9%	\$42.41	BACH
Fast Food & Counter Workers	25	27	810	0.9%	\$9.69	HS/GED
Shipping, Receiving, & Inventory Clerks	20	20	43	0.7%	\$16.31	HS/GED

SOC TITLE	2022 JOBS	2032 JOBS	JOB OPENINGS	% JOBS IN INDUSTRY	MEDIAN HOURLY WAGE	TYPICAL ED LEVEL
First-Line Supervisors of Transportation & Material Moving Workers, Except Aircraft Cargo Handling Supervisors	19	20	37	0.7%	\$24.41	HS/GED
Packers & Packagers, Hand	17	18	25	0.6%	\$11.75	HS/GED
Food Preparation Workers	15	16	105	0.6%	\$13.08	HS/GED
Pharmacists	15	16	8	0.6%	\$57.59	PHD
Security Guards	15	14	33	0.5%	\$12.84	HS/GED
Automotive & Watercraft Service Attendants	13	14	13	0.5%	\$14.58	HS/GED
Tire Repairers & Changers	12	13	12	0.5%	\$14.03	HS/GED
Industrial Truck & Tractor Operators	12	13	39	0.4%	\$17.96	HS/GED
Butchers & Meat Cutters	10	11	16	0.4%	\$13.93	HS/GED
Bakers	10	10	23	0.4%	\$12.19	HS/GED
Hairdressers, Hairstylists, & Cosmetologists	9	10	26	0.3%	\$12.03	HS/GED
Food Processing Workers, All Other	9	9	3	0.3%	\$16.84	HS/GED

Source: Employees & Self-Employed 2023.1.

Table A3.6: Employment Projections in Northern Brazoria County for the Top 25 Occupations Related to the Chemical Manufacturing Industry Subsector

SOC TITLE	2022 JOBS	2032 JOBS	JOB OPENINGS	% JOBS IN INDUSTRY	MEDIAN HOURLY WAGE	TYPICAL ED LEVEL
Chemical Equipment Operators & Tenders	309	248	30	14.9%	\$38.40	HS/GED
Chemical Plant & System Operators	194	160	20	9.4%	\$39.21	HS/GED
First-Line Supervisors of Production & Operating Workers	110	96	40	5.3%	\$34.19	HS/GED
Chemical Engineers	100	97	7	4.8%	\$74.11	BACH
Industrial Machinery Mechanics	83	83	44	4.0%	\$26.95	HS/GED
Mixing & Blending Machine Setters, Operators, & Tenders	54	46	8	2.6%	\$17.94	HS/GED
Inspectors, Testers, Sorters, Samplers, & Weighers	51	45	38	2.4%	\$17.71	HS/GED
Packaging & Filling Machine Operators & Tenders	48	43	12	2.3%	\$16.47	HS/GED
Chemical Technicians	46	41	9	2.2%	\$36.29	BACH
General & Operations Managers	45	39	192	2.2%	\$42.41	BACH
Shipping, Receiving, & Inventory Clerks	41	33	43	2.0%	\$16.31	HS/GED
Laborers & Freight, Stock, & Material Movers, Hand	41	36	155	2.0%	\$13.60	HS/GED
Industrial Engineers	40	36	8	2.0%	\$46.17	BACH

SOC TITLE	2022 JOBS	2032 JOBS	JOB OPENINGS	% JOBS IN INDUSTRY	MEDIAN HOURLY WAGE	TYPICAL ED LEVEL
Maintenance & Repair Workers, General	40	35	72	1.9%	\$16.65	HS/GED
Industrial Production Managers	39	34	8	1.9%	\$58.74	BACH
Heavy & Tractor-Trailer Truck Drivers	39	34	152	1.9%	\$20.57	HS/GED
Industrial Truck & Tractor Operators	28	24	39	1.3%	\$17.96	HS/GED
Chemists	28	27	4	1.3%	\$41.10	BACH
Sales Representatives, Wholesale & Manufacturing, Except Technical & Scientific Products	24	21	47	1.2%	\$26.80	BACH
Customer Service Representatives	24	19	174	1.1%	\$15.80	CERT
Production, Planning, & Expediting Clerks	20	17	20	1.0%	\$21.44	CERT
First-Line Supervisors of Mechanics, Installers, & Repairers	19	17	39	0.9%	\$31.44	HS/GED
Accountants & Auditors	18	16	46	0.9%	\$34.71	BACH
Office Clerks, General	18	14	181	0.9%	\$15.66	CERT
Miscellaneous Assemblers & Fabricators	17	13	42	0.8%	\$16.69	HS/GED

Source: Employees & Self-Employed 2023.1.

Table A3.7: Employment Projections in Northern Brazoria County for the Top 25 Occupations Related to the Building Material & Garden Equipment & Supplies Dealers Industry Subsector

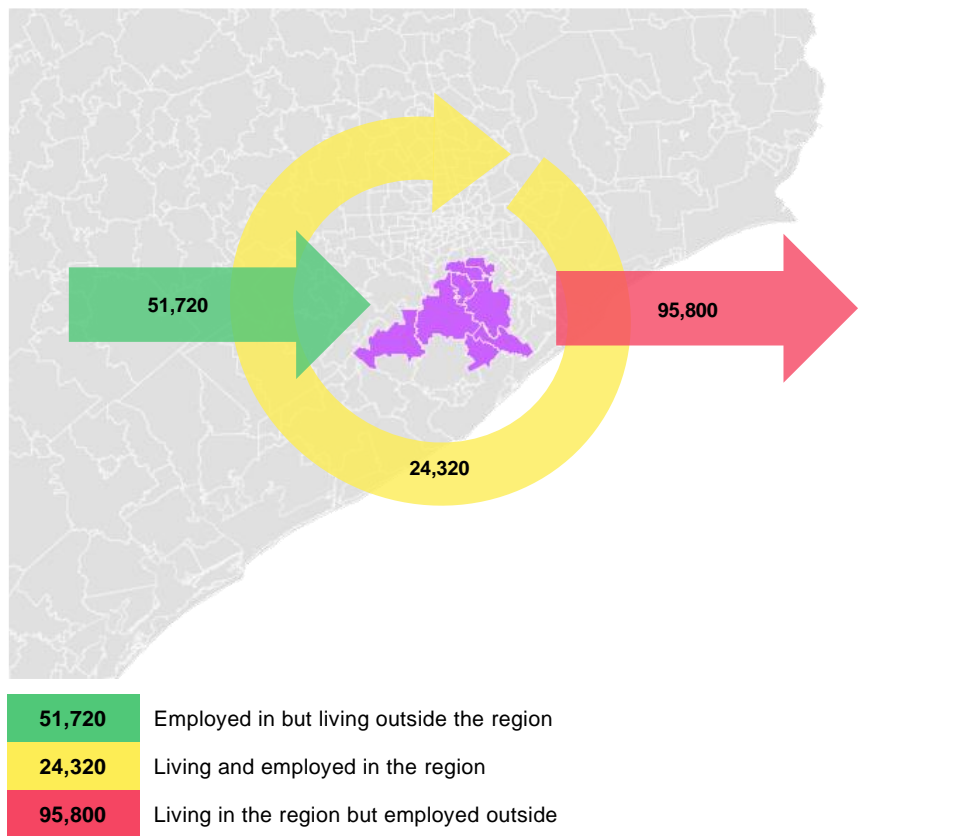
SOC TITLE	2022 JOBS	2032 JOBS	JOB OPENINGS	% JOBS IN INDUSTRY	MEDIAN HOURLY WAGE	TYPICAL ED LEVEL
Retail Salespersons	469	556	392	35.6%	\$11.93	HS/GED
Cashiers	153	168	565	11.6%	\$10.65	HS/GED
Stockers & Order Fillers	121	152	305	9.2%	\$14.24	HS/GED
First-Line Supervisors of Retail Sales Workers	111	136	121	8.4%	\$18.87	HS/GED
Laborers & Freight, Stock, & Material Movers, Hand	53	65	155	4.0%	\$13.60	HS/GED
Customer Service Representatives	50	55	174	3.8%	\$15.80	CERT
General & Operations Managers	38	45	192	2.9%	\$42.41	BACH
Shipping, Receiving, & Inventory Clerks	27	29	43	2.1%	\$16.31	HS/GED
Merchandise Displayers & Window Trimmers	25	30	7	1.9%	\$14.59	HS/GED
Heavy & Tractor-Trailer Truck Drivers	20	24	152	1.5%	\$20.57	HS/GED
Light Truck Drivers	19	23	43	1.4%	\$16.70	HS/GED
Office Clerks, General	17	19	181	1.3%	\$15.66	CERT
First-Line Supervisors of Office & Administrative Support Workers	15	16	87	1.1%	\$26.23	CERT

SOC TITLE	2022 JOBS	2032 JOBS	JOB OPENINGS	% JOBS IN INDUSTRY	MEDIAN HOURLY WAGE	TYPICAL ED LEVEL
Sales Representatives, Wholesale & Manufacturing, Except Technical & Scientific Products	14	16	47	1.0%	\$26.80	BACH
Bookkeeping, Accounting, & Auditing Clerks	12	13	89	0.9%	\$20.14	CERT
First-Line Supervisors of Transportation & Material Moving Workers, Except Aircraft Cargo Handling Supervisors	12	14	37	0.9%	\$24.41	HS/GED
Industrial Truck & Tractor Operators	11	12	39	0.8%	\$17.96	HS/GED
Glaziers	9	11	5	0.7%	\$18.99	HS/GED
Outdoor Power Equipment & Other Small Engine Mechanics	7	9	2	0.6%	\$15.63	HS/GED
Sales Managers	6	7	17	0.4%	\$54.38	BACH
Secretaries & Administrative Assistants, Except Legal, Medical, & Executive	5	6	111	0.4%	\$16.46	CERT
Landscaping & Groundskeeping Workers	5	7	49	0.4%	\$13.15	HS/GED
Counter & Rental Clerks	5	6	22	0.4%	\$13.48	HS/GED
Farmworkers & Laborers, Crop, Nursery, & Greenhouse	5	6	30	0.4%	\$13.62	NONE
Production, Planning, & Expediting Clerks	4	5	20	0.3%	\$21.44	CERT

Source: Employees & Self-Employed 2023.1.

WORKFORCE COMMUTING PATTERNS

Figure A3.1: Northern Brazoria County Job Inflow and Outflow



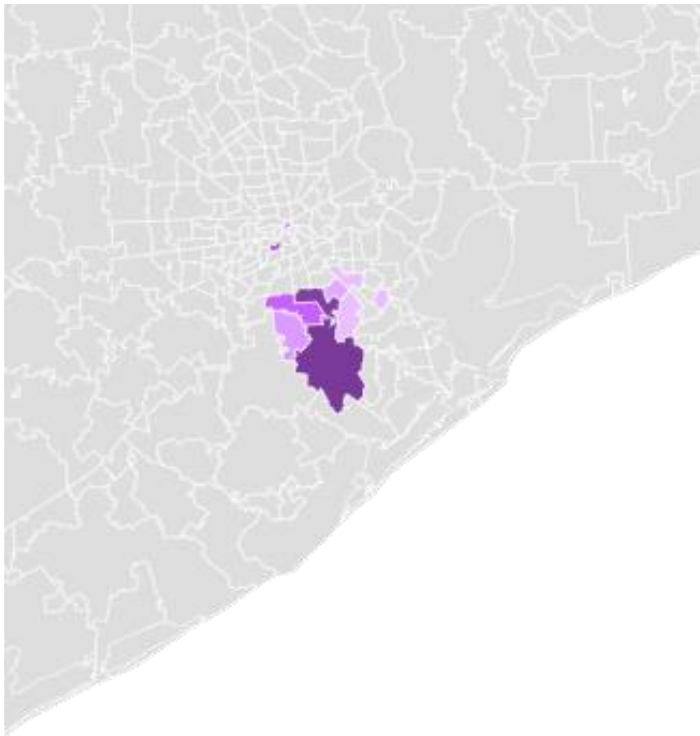
Source: Census Bureau, Center for Economic Studies.

Table A3.8: Northern Brazoria County Job Inflow and Outflow

COMMUTING PATTERN	JOBS	COMMUTE SHARE
EMPLOYMENT PATTERNS		
Employed in Northern Brazoria County	76,040	100%
Employed in Northern Brazoria County but living outside	51,720	68%
Employed and living in Northern Brazoria County	24,320	32%
RESIDENTIAL PATTERNS		
Living in Northern Brazoria County	120,120	100%
Living in Northern Brazoria County but employed outside	95,800	80%
Living and employed in Northern Brazoria County	24,320	20%

Source: Census Bureau, Center for Economic Studies.

Figure A3.2: ZIP codes where Northern Brazoria County Residents Work



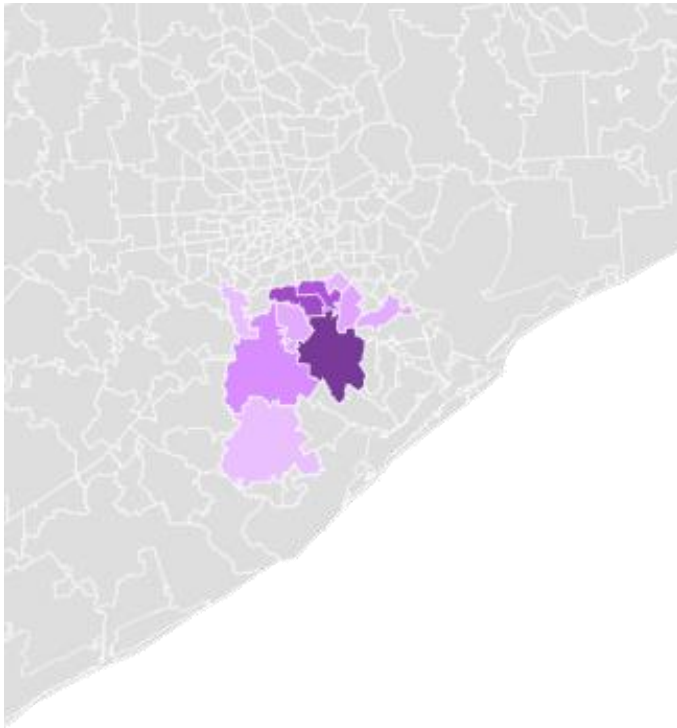
Source: Census Bureau, Center for Economic Studies.

Table A3.9: ZIP codes where Northern Brazoria County Residents Work

ZIP CODE OF EMPLOYMENT	JOBS	% JOBS
77511 - Alvin	7,350	6%
77581 - Pearland	6,980	6%
77030 - Houston	5,130	4%
77584 - Pearland	4,600	4%
77002 - Houston	3,280	3%
77578 - Manvel	2,800	2%
77089 - Houston	2,340	2%
77058 - Houston	1,760	1%
77034 - Houston	1,680	1%
77546 - Friendswood	1,660	1%
All Other Locations	82,550	69%
Total Primary Jobs, Residents	120,120	100%

Source: Census Bureau, Center for Economic Studies.

Figure A3.3: ZIP codes where Northern Brazoria County Workers Live



Source: Census Bureau, Center for Economic Studies.

Table A3.10: ZIP codes where Northern Brazoria County Workers Live

ZIP CODE OF RESIDENCE	JOBS	% JOBS
77511 - Alvin	7,430	10%
77584 - Pearland	5,890	8%
77581 - Pearland	5,210	7%
77583 - Rosharon	2,710	4%
77546 - Friendswood	1,970	3%
77578 - Manvel	1,710	2%
77573 - League City	1,700	2%
77089 - Houston	1,370	2%
77459 - Missouri City	1,100	1%
77515 - Angleton	1,060	1%
All Other Locations	45,890	60%
Total Primary Jobs, Workers	76,040	100%

Source: Census Bureau, Center for Economic Studies.

Figure A3.4: Brazoria County Job Inflow and Outflow

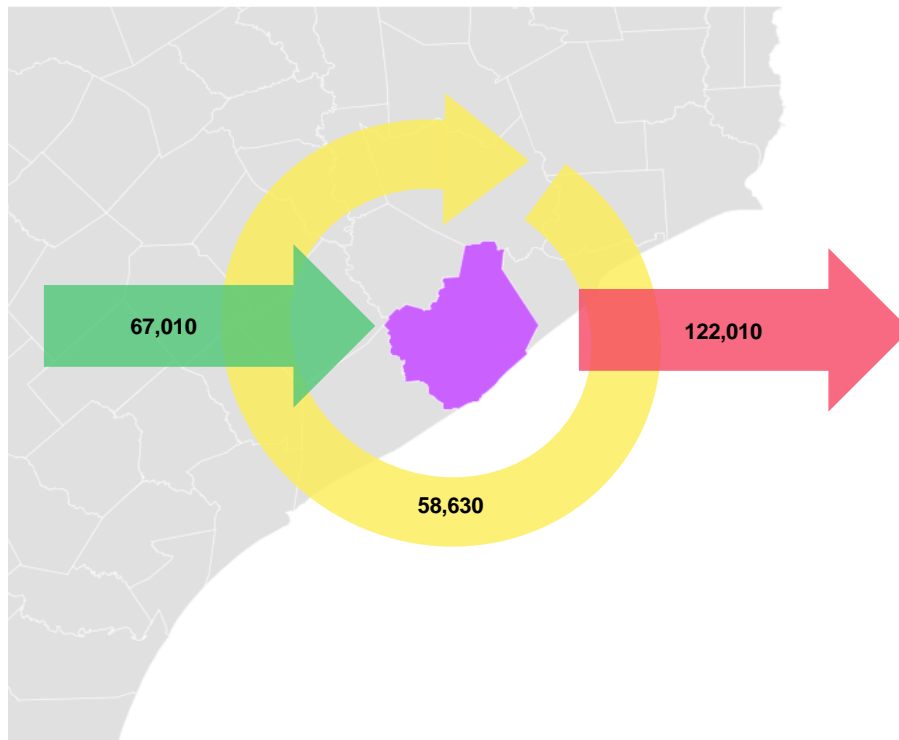
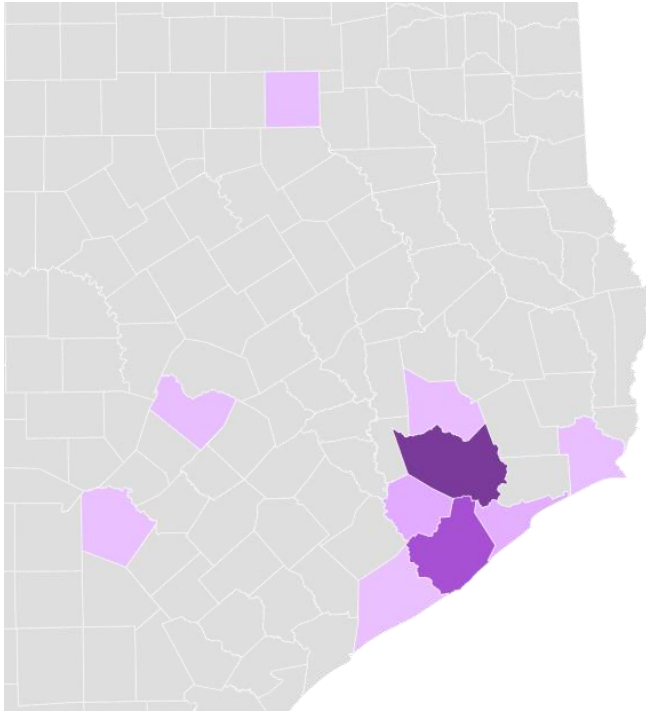


Table A3.11: Brazoria County Job Inflow and Outflow

COMMUTING PATTERN	JOBS	COMMUTE SHARE
EMPLOYMENT PATTERNS		
Employed in Brazoria County	125,640	100%
Employed in Brazoria County but living outside	67,010	53%
Employed and living in Brazoria County	58,630	47%
RESIDENTIAL PATTERNS		
Living in Brazoria County	180,640	100%
Living in Brazoria County but employed outside	122,010	68%
Living and employed in Brazoria County	58,630	32%

Source: Census Bureau, Center for Economic Studies.

Figure A3.5: Counties where Brazoria County Residents Work



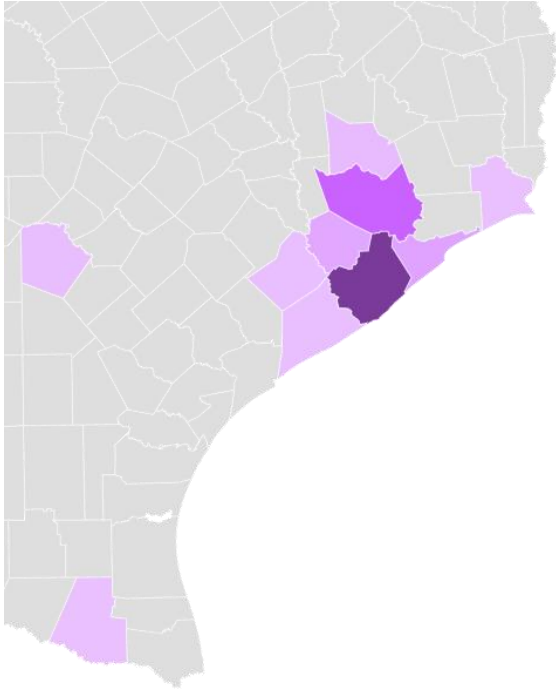
Source: Census Bureau, Center for Economic Studies.

Table A3.12: Counties where Brazoria County Residents Work

COUNTY OF EMPLOYMENT	JOBS	% JOBS
Harris County	81,350	45.0%
Brazoria County	58,630	32.5%
Fort Bend County	9,920	5.5%
Galveston County	8,360	4.6%
Montgomery County	2,310	1.3%
Dallas County	2,210	1.2%
Travis County	1,950	1.1%
Jefferson County	1,440	0.8%
Bexar County	1,240	0.7%
Matagorda County	1,180	0.7%
All Other Locations	12,050	6.7%
Total Primary Jobs, Residents	180,640	100%

Source: Census Bureau, Center for Economic Studies.

Figure A3.6: Counties where Brazoria County Workers Live



Source: Census Bureau, Center for Economic Studies.

Table A3.13: Counties where Brazoria County Workers Live

COUNTY OF RESIDENCE	JOBS	% JOBS
Brazoria County	58,630	46.7%
Harris County	29,430	23.4%
Galveston County	9,620	7.7%
Fort Bend County	8,280	6.6%
Montgomery County	2,310	1.8%
Bexar County	1,300	1.0%
Matagorda County	1,270	1.0%
Wharton County	1,010	0.8%
Jefferson County	900	0.7%
Hidalgo County	820	0.7%
All Other Locations	12,070	9.6%
Total Primary Jobs, Workers	125,640	100%

Source: Census Bureau, Center for Economic Studies.

EDUCATIONAL ATTAINMENT

Table A3.14: Highest Educational Attainments of Adults in Brazoria County

EDUCATION LEVEL	2017 ADULTS	2017 % ADULTS	2022 ADULTS	2022 % ADULTS	CHANGE
Less than high school diploma or equivalent	30,266	13%	28,102	11%	(2,164)
High school diploma or equivalent	59,828	25%	60,327	24%	499
Some college	56,683	24%	61,225	24%	4,542
Associate degree	19,393	8%	22,807	9%	3,414
Bachelor's degree	45,089	19%	51,466	20%	6,377
Graduate degree or higher	25,200	11%	28,404	11%	3,203
Total	236,460	100%	252,330	100%	15,870

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

Table A3.15: Highest Educational Attainments of Adults in Brazoria County by Gender

EDUCATION LEVEL	ADULT MALES	% ADULT MALES	ADULT FEMALES	% ADULT FEMALES
Less than high school diploma or equivalent	15,083	12%	13,019	10%
High school diploma or equivalent	33,124	26%	27,203	22%
Some college	32,196	25%	29,028	23%
Associate degree	10,415	8%	12,393	10%
Bachelor's degree	22,813	18%	28,653	23%
Graduate degree and higher	13,227	10%	15,176	12%
Total	126,858	100%	125,472	100%

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

Table A3.16: Highest Educational Attainments of Adults in Brazoria County by Major Race and Ethnic Groups

GROUP		<HS	HS	SOME COLLEGE	ASSOC	BACH	>BACH
White, non-Hispanic	Adults	6,271	29,095	31,079	11,610	24,616	13,623
	% Adults	5%	25%	27%	10%	21%	12%
Black, non-Hispanic	Adults	2,462	8,317	10,720	4,003	10,098	5,558
	% Adults	6%	20%	26%	10%	25%	14%
American Indian or Alaskan native, non-Hispanic	Adults	125	175	374	138	105	57
	% Adults	13%	18%	38%	14%	11%	6%
Asian, non-Hispanic	Adults	1,634	1,456	2,510	933	7,649	4,226
	% Adults	9%	8%	14%	5%	42%	23%
Native Hawaiian or Pacific Islander, non-Hispanic	Adults	31	0	60	19	26	6
	% Adults	22%	0%	42%	13%	18%	4%
Two or more races, non-Hispanic	Adults	530	661	517	190	468	255
	% Adults	20%	25%	20%	7%	18%	10%
Hispanic, all types	Adults	17,048	20,622	15,966	5,914	8,503	4,680
	% Adults	23%	28%	22%	8%	12%	6%

Source: Lightcast 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 Lightcast 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
09.0101	Speech Communication and Rhetoric	11-1031	Legislators	23	19	46
		11-2032	Public Relations Managers	8	10	59
		11-2033	Fundraising Managers	8	10	59
		27-3011	Broadcast Announcers and Radio Disc Jockeys	35	32	53
		27-3023	News Analysts, Reporters, and Journalists	11	12	64
		27-3031	Public Relations Specialists	12	13	61
		27-3043	Writers and Authors	12	12	53
		27-3099	Media and Communication Workers, All Other	26	26	54
09.0701	Radio and Television	25-4022	Librarians and Media Collections Specialists	10	12	27
		27-2012	Producers and Directors	18	19	64
		27-3011	Broadcast Announcers and Radio Disc Jockeys	35	32	53
		27-3023	News Analysts, Reporters, and Journalists	11	12	64
		27-3031	Public Relations Specialists	12	13	61
		27-3099	Media and Communication Workers, All Other	26	26	54
		27-4012	Broadcast Technicians	39	38	53
		27-4014	Sound Engineering Technicians	39	38	53
		27-4031	Camera Operators, Television, Video, and Film	26	26	62
		27-4032	Film and Video Editors	26	26	62
10.0303	Prepress/Desktop Publishing and Digital Imaging Design	43-2099	Communications Equipment Operators, All Other	46	37	43
		27-1011	Art Directors	31	27	52
		27-1014	Special Effects Artists and Animators	31	27	52
		27-1024	Graphic Designers	19	26	71

CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
		27-2012	Producers and Directors	18	19	64
		43-9031	Desktop Publishers	46	40	41
		51-5111	Prepress Technicians and Workers	62	39	31
11.0201	Computer Programming/Programmer, General	11-3021	Computer and Information Systems Managers	17	21	54
		15-1211	Computer Systems Analysts	18	21	56
		15-1221	Computer and Information Research Scientists	6	7	37
		15-1231	Computer Network Support Specialists	35	40	53
		15-1251	Computer Programmers	17	20	58
		15-1252	Software Developers	9	12	55
		15-1253	Software Quality Assurance Analysts and Testers	9	12	55
		15-1254	Web Developers	20	25	64
		15-1255	Web and Digital Interface Designers	20	25	64
		15-1299	Computer Occupations, All Other	24	27	53
12.0401	Cosmetology/Cosmetologist, General	39-1022	First-Line Supervisors of Personal Service Workers	64	40	26
		39-5011	Barbers	75	35	14
		39-5012	Hairdressers, Hairstylists, and Cosmetologists	75	43	17
		39-5091	Makeup Artists, Theatrical and Performance	64	45	29
		39-5092	Manicurists and Pedicurists	57	24	14
		39-5093	Shampooers	64	45	29
		39-5094	Skincare Specialists	59	52	34
12.0413	Cosmetology, Barber/Styling, and Nail Instructor	39-5011	Barbers	75	35	14
		39-5012	Hairdressers, Hairstylists, and Cosmetologists	75	43	17
12.0503	Culinary Arts/Chef Training	11-9051	Food Service Managers	55	36	32
		35-1011	Chefs and Head Cooks	52	38	30
		35-1012	First-Line Supervisors of Food Preparation and Serving Workers	64	38	22
		35-2012	Cooks, Institution and Cafeteria	60	25	12
		35-2013	Cooks, Private Household	60	25	12
		35-2014	Cooks, Restaurant	60	25	12
		35-2015	Cooks, Short Order	60	25	12

CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
13.1202	Elementary Education and Teaching	11-9032	Education Administrators, Kindergarten through Secondary	12	12	30
		25-2012	Kindergarten Teachers, Except Special Education	33	34	49
		25-2021	Elementary School Teachers, Except Special Education	3	5	46
13.1203	Junior High/Intermediate/Middle School Education and Teaching	11-9032	Education Administrators, Kindergarten through Secondary	12	12	30
		25-2022	Middle School Teachers, Except Special and Career/Technical Education	3	5	46
		25-2023	Career/Technical Education Teachers, Middle School	3	5	46
		25-2031	Secondary School Teachers, Except Special and Career/Technical Education	2	4	42
13.1205	Secondary Education and Teaching	11-9032	Education Administrators, Kindergarten through Secondary	12	12	30
		25-2031	Secondary School Teachers, Except Special and Career/Technical Education	2	4	42
		25-2032	Career/Technical Education Teachers, Secondary School	2	4	42
13.1210	Early Childhood Education and Teaching	11-9031	Education and Childcare Administrators, Preschool and Daycare	12	12	30
		11-9032	Education Administrators, Kindergarten through Secondary	12	12	30
		19-3034	School Psychologists	0	0	9
		21-1021	Child, Family, and School Social Workers	15	16	45
		25-2011	Preschool Teachers, Except Special Education	33	34	49
		25-2012	Kindergarten Teachers, Except Special Education	33	34	49
		25-2021	Elementary School Teachers, Except Special Education	3	5	46
		25-2051	Special Education Teachers, Preschool	9	9	37
		25-2052	Special Education Teachers, Kindergarten and Elementary School	9	9	37
		25-9031	Instructional Coordinators	12	12	33
		25-9045	Teaching Assistants, Except Postsecondary	50	39	37
15.0404	Instrumentation Technology/Technician	17-3023	Electrical and Electronic Engineering Technologists and Technicians	51	63	44
		17-3024	Electro-Mechanical and Mechatronics Technologists and Technicians	55	51	37

CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
		17-3026	Industrial Engineering Technologists and Technicians	55	51	37
		17-3028	Calibration Technologists and Technicians	55	51	37
		17-3029	Engineering Technologists and Technicians, Except Drafters, All Other	55	51	37
		49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	61	48	30
		49-9069	Precision Instrument and Equipment Repairers, All Other	53	48	40
		51-2028	Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	66	29	15
15.0701	Occupational Safety and Health Technology/Technician	11-9199	Managers, All Other	32	25	44
		13-1041	Compliance Officers	25	25	49
		19-5011	Occupational Health and Safety Specialists	37	29	45
		19-5012	Occupational Health and Safety Technicians	37	29	45
15.1001	Construction Engineering Technology/Technician	11-9021	Construction Managers	50	32	37
		13-1051	Cost Estimators	49	39	43
		17-3011	Architectural and Civil Drafters	32	53	60
		17-3022	Civil Engineering Technologists and Technicians	55	51	37
		17-3031	Surveying and Mapping Technicians	63	56	31
		47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	66	31	16
		47-4011	Construction and Building Inspectors	56	43	36
15.1301	Drafting and Design Technology/Technician, General	17-3011	Architectural and Civil Drafters	32	53	60
		17-3012	Electrical and Electronics Drafters	34	57	57
		17-3013	Mechanical Drafters	34	57	57
		17-3019	Drafters, All Other	34	57	57
		27-1021	Commercial and Industrial Designers	20	20	64
		51-9162	Computer Numerically Controlled Tool Programmers	68	44	22
19.0706	Child Development	11-9031	Education and Childcare Administrators, Preschool and Daycare	12	12	30
		21-1021	Child, Family, and School Social Workers	15	16	45

CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
19.0708	Child Care and Support Services Management	21-1093	Social and Human Service Assistants	36	34	47
		25-2011	Preschool Teachers, Except Special Education	33	34	49
		25-9021	Farm and Home Management Educators	12	12	33
		39-9011	Childcare Workers	57	37	27
		11-9031	Education and Childcare Administrators, Preschool and Daycare	12	12	30
		11-9151	Social and Community Service Managers	20	19	45
		21-1021	Child, Family, and School Social Workers	15	16	45
		21-1093	Social and Human Service Assistants	36	34	47
		25-2011	Preschool Teachers, Except Special Education	33	34	49
		39-9011	Childcare Workers	57	37	27
22.0302	Legal Assistant/Paralegal	13-1041	Compliance Officers	25	25	49
		23-2011	Paralegals and Legal Assistants	33	42	56
		23-2093	Title Examiners, Abstractors, and Searchers	50	39	37
		23-2099	Legal Support Workers, All Other	28	25	51
		43-6012	Legal Secretaries and Administrative Assistants	57	52	38
22.0303	Court Reporting and Captioning/Court Reporter	23-1012	Judicial Law Clerks	11	15	20
		27-3092	Court Reporters and Simultaneous Captioners	47	70	49
		43-4031	Court, Municipal, and License Clerks	58	45	36
26.0101	Biology/Biological Sciences, General	11-9121	Natural Sciences Managers	7	8	38
		15-2041	Statisticians	10	11	41
		19-1011	Animal Scientists	0	0	60
		19-1013	Soil and Plant Scientists	0	0	60
		19-1021	Biochemists and Biophysicists	0	0	46
		19-1022	Microbiologists	0	0	46
		19-1023	Zoologists and Wildlife Biologists	0	0	46
		19-1029	Biological Scientists, All Other	0	0	46
		19-1041	Epidemiologists	1	1	24
		19-1042	Medical Scientists, Except Epidemiologists	1	1	24
		19-1099	Life Scientists, All Other	1	1	24

CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
		19-4021	Biological Technicians	38	37	45
		19-4042	Environmental Science and Protection Technicians, Including Health	42	34	47
		25-2031	Secondary School Teachers, Except Special and Career/Technical Education	2	4	42
		29-2018	Clinical Laboratory Technologists and Technicians	32	40	57
		19-4099	Life, Physical, and Social Science Technicians, All Other	38	37	45
		11-9111	Medical and Health Services Managers	24	27	43
27.0101	Mathematics, General	11-9121	Natural Sciences Managers	7	8	38
		15-2021	Mathematicians	10	11	41
		15-2031	Operations Research Analysts	19	20	47
		15-2041	Statisticians	10	11	41
		15-2051	Data Scientists	10	11	41
		15-2099	Mathematical Science Occupations, All Other	10	11	41
		25-2022	Middle School Teachers, Except Special and Career/Technical Education	3	5	46
		25-2031	Secondary School Teachers, Except Special and Career/Technical Education	2	4	42
		43-9111	Statistical Assistants	40	35	42
31.0501	Sports, Kinesiology, and Physical Education/Fitness, General	11-9039	Education Administrators, All Other	12	12	30
		11-9151	Social and Community Service Managers	20	19	45
		21-1091	Health Education Specialists	28	25	46
		21-1094	Community Health Workers	28	25	46
		25-2022	Middle School Teachers, Except Special and Career/Technical Education	3	5	46
		25-2031	Secondary School Teachers, Except Special and Career/Technical Education	2	4	42
		25-2059	Special Education Teachers, All Other	9	9	37
		27-2021	Athletes and Sports Competitors	34	30	58
		27-2022	Coaches and Scouts	26	23	47
		27-2023	Umpires, Referees, and Other Sports Officials	38	33	35
		29-1031	Dietitians and Nutritionists	16	10	45

CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
		29-1125	Recreational Therapists	25	15	58
		29-1128	Exercise Physiologists	7	9	30
		29-1229	Physicians, All Other	0	0	0
		29-2051	Dietetic Technicians	65	41	24
		29-9091	Athletic Trainers	17	20	43
		31-2022	Physical Therapist Aides	16	61	79
		39-9031	Exercise Trainers and Group Fitness Instructors	28	29	55
		39-9032	Recreation Workers	50	35	37
40.0101	Physical Sciences, General	11-9121	Natural Sciences Managers	7	8	38
		17-2041	Chemical Engineers	8	9	62
		17-2081	Environmental Engineers	6	5	51
		17-2151	Mining and Geological Engineers, Including Mining Safety Engineers	10	10	61
		17-2161	Nuclear Engineers	10	14	56
		17-2171	Petroleum Engineers	10	10	61
		17-2199	Engineers, All Other	10	14	56
		19-1012	Food Scientists and Technologists	0	0	60
		19-1013	Soil and Plant Scientists	0	0	60
		19-1021	Biochemists and Biophysicists	0	0	46
		19-1031	Conservation Scientists	0	0	76
		19-2011	Astronomers	0	0	20
		19-2012	Physicists	0	0	20
		19-2021	Atmospheric and Space Scientists	5	8	62
		19-2031	Chemists	4	4	53
		19-2032	Materials Scientists	4	4	53
		19-2041	Environmental Scientists and Specialists, Including Health	0	0	62
		19-2042	Geoscientists, Except Hydrologists and Geographers	0	0	45
		19-2043	Hydrologists	0	0	45
		19-4031	Chemical Technicians	47	34	43
		19-4043	Geological Technicians, Except Hydrologic Technicians	42	34	47
		19-4044	Hydrologic Technicians	42	34	47
		19-4051	Nuclear Technicians	42	34	47

CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
40.0801	Physics, General	19-4092	Forensic Science Technicians	38	37	45
		25-2031	Secondary School Teachers, Except Special and Career/Technical Education	2	4	42
		25-4013	Museum Technicians and Conservators	15	13	40
		11-9121	Natural Sciences Managers	7	8	38
		17-2161	Nuclear Engineers	10	14	56
		19-1021	Biochemists and Biophysicists	0	0	46
		19-2011	Astronomers	0	0	20
		19-2012	Physicists	0	0	20
		19-2021	Atmospheric and Space Scientists	5	8	62
		19-2032	Materials Scientists	4	4	53
41.0301	Chemical Technology/Technician	19-4051	Nuclear Technicians	42	34	47
		25-2031	Secondary School Teachers, Except Special and Career/Technical Education	2	4	42
		19-2031	Chemists	4	4	53
		19-4031	Chemical Technicians	47	34	43
		51-8091	Chemical Plant and System Operators	68	45	22
		51-9011	Chemical Equipment Operators and Tenders	58	35	32
		19-2032	Materials Scientists	4	4	53
42.0101	Psychology, General	19-4051	Nuclear Technicians	42	34	47
		11-9199	Managers, All Other	32	25	44
		19-3032	Industrial-Organizational Psychologists	0	0	9
		19-3033	Clinical and Counseling Psychologists	0	0	9
		19-3034	School Psychologists	0	0	9
		19-3039	Psychologists, All Other	0	0	9
		21-1012	Educational, Guidance, and Career Counselors and Advisors	9	7	24
		21-1013	Marriage and Family Therapists	9	9	21
		21-1015	Rehabilitation Counselors	20	21	38
		21-1018	Substance Abuse, Behavioral Disorder, and Mental Health Counselors	11	13	32
		21-1021	Child, Family, and School Social Workers	15	16	45
		21-1022	Healthcare Social Workers	28	25	36
		21-1023	Mental Health and Substance Abuse Social Workers	6	5	14

CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
		29-1223	Psychiatrists	0	0	0
		31-1133	Psychiatric Aides	65	47	26
		21-1029	Social Workers, All Other	11	13	47
		21-1093	Social and Human Service Assistants	36	34	47
		21-1019	Counselors, All Other	18	17	33
		19-4061	Social Science Research Assistants	38	37	45
		13-1071	Human Resources Specialists	26	26	54
		43-4161	Human Resources Assistants, Except Payroll and Timekeeping	46	40	42
		11-3121	Human Resources Managers	26	24	48
43.0104	Criminal Justice/Safety Studies	11-9161	Emergency Management Directors	23	24	48
		11-9199	Managers, All Other	32	25	44
		13-1041	Compliance Officers	25	25	49
		13-1082	Project Management Specialists	22	22	52
		13-1199	Business Operations Specialists, All Other	22	22	52
		13-2099	Financial Specialists, All Other	12	12	53
		15-1212	Information Security Analysts	21	27	53
		21-1021	Child, Family, and School Social Workers	15	16	45
		21-1092	Probation Officers and Correctional Treatment Specialists	11	12	69
		33-1011	First-Line Supervisors of Correctional Officers	56	44	35
		33-1012	First-Line Supervisors of Police and Detectives	37	41	48
		33-2021	Fire Inspectors and Investigators	51	47	39
		33-3011	Bailiffs	47	41	43
		33-3012	Correctional Officers and Jailers	66	49	31
		33-3021	Detectives and Criminal Investigators	29	32	53
		33-3051	Police and Sheriff's Patrol Officers	43	47	49
		33-3052	Transit and Railroad Police	43	47	49
		33-9021	Private Detectives and Investigators	32	32	50
		43-5031	Public Safety Telecommunicators	61	55	35
43.0107	Criminal Justice/Police Science	11-9161	Emergency Management Directors	23	24	48
		33-1012	First-Line Supervisors of Police and Detectives	37	41	48

CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
		33-3011	Bailiffs	47	41	43
		33-3021	Detectives and Criminal Investigators	29	32	53
		33-3051	Police and Sheriff's Patrol Officers	43	47	49
		33-3052	Transit and Railroad Police	43	47	49
		33-9021	Private Detectives and Investigators	32	32	50
43.0402	Criminalistics and Criminal Science	11-9161	Emergency Management Directors	23	24	48
		33-1012	First-Line Supervisors of Police and Detectives	37	41	48
		33-3011	Bailiffs	47	41	43
		33-3021	Detectives and Criminal Investigators	29	32	53
		33-3051	Police and Sheriff's Patrol Officers	43	47	49
		33-3052	Transit and Railroad Police	43	47	49
45.1101	Sociology, General	11-9199	Managers, All Other	32	25	44
		13-1041	Compliance Officers	25	25	49
		13-1075	Labor Relations Specialists	26	26	54
		19-2041	Environmental Scientists and Specialists, Including Health	0	0	62
		19-3041	Sociologists	8	10	37
		19-3093	Historians	8	10	37
		19-4061	Social Science Research Assistants	38	37	45
46.0302	Electrician	47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	66	31	16
		47-2111	Electricians	69	47	22
		47-3013	Helpers--Electricians	55	21	9
		49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	66	41	25
		49-2098	Security and Fire Alarm Systems Installers	70	49	22
		49-9097	Signal and Track Switch Repairers	66	36	19
46.0502	Pipefitting/Pipefitter and Sprinkler Fitter	47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	66	31	16
		47-2151	Pipelayers	63	27	9
		47-2152	Plumbers, Pipefitters, and Steamfitters	72	33	12
47.0201	Heating, Air Conditioning, Ventilation and Refrigeration Maintenance	13-1082	Project Management Specialists	22	22	52

CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
	Technology/Technician					
		13-1199	Business Operations Specialists, All Other	22	22	52
		47-2151	Pipelayers	63	27	9
		47-2152	Plumbers, Pipefitters, and Steamfitters	72	33	12
		47-2211	Sheet Metal Workers	71	34	15
		47-4011	Construction and Building Inspectors	56	43	36
		47-4098	Miscellaneous Construction and Related Workers	66	24	12
		49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	66	41	25
		49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	61	48	30
		49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	69	44	19
		49-9031	Home Appliance Repairers	68	40	17
		49-9071	Maintenance and Repair Workers, General	68	39	20
		49-9098	Helpers--Installation, Maintenance, and Repair Workers	59	19	6
47.0604	Automobile/Automotive Mechanics Technology/Technician	49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	66	41	25
		49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	61	48	30
		49-2096	Electronic Equipment Installers and Repairers, Motor Vehicles	61	48	30
		49-3021	Automotive Body and Related Repairers	66	27	11
		49-3022	Automotive Glass Installers and Repairers	78	30	6
		49-3023	Automotive Service Technicians and Mechanics	67	36	17
		53-6051	Transportation Inspectors	59	45	32
48.0501	Machine Tool Technology/Machinist	49-9041	Industrial Machinery Mechanics	69	41	20
		49-9043	Maintenance Workers, Machinery	71	35	18
		49-9044	Millwrights	73	41	18
		51-4021	Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic	74	31	11
		51-4022	Forging Machine Setters, Operators, and Tenders, Metal and Plastic	74	31	11

CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
		51-4023	Rolling Machine Setters, Operators, and Tenders, Metal and Plastic	74	31	11
		51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	72	27	10
		51-4032	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic	74	26	4
		51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic	68	23	9
		51-4034	Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic	74	26	4
		51-4035	Milling and Planing Machine Setters, Operators, and Tenders, Metal and Plastic	74	26	4
		51-4041	Machinists	73	41	17
		51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	69	28	11
		51-4191	Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic	69	28	11
		51-4192	Layout Workers, Metal and Plastic	69	28	11
		51-4199	Metal Workers and Plastic Workers, All Other	69	28	11
		51-9161	Computer Numerically Controlled Tool Operators	68	44	22
48.0508	Welding Technology/Welder	47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	66	31	16
		47-2152	Plumbers, Pipefitters, and Steamfitters	72	33	12
		47-2171	Reinforcing Iron and Rebar Workers	59	20	7
		47-2211	Sheet Metal Workers	71	34	15
		47-2221	Structural Iron and Steel Workers	77	34	8
		49-9071	Maintenance and Repair Workers, General	68	39	20
		51-4121	Welders, Cutters, Solderers, and Brazers	70	32	11
		51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	70	32	11
50.0501	Drama and Dramatics/Theatre Arts, General	27-1022	Fashion Designers	20	26	69
		27-1027	Set and Exhibit Designers	24	29	59
		27-2011	Actors	31	22	53
		27-2012	Producers and Directors	18	19	64

CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
		27-2031	Dancers	59	29	32
		27-2032	Choreographers	59	29	32
		27-2042	Musicians and Singers	35	28	36
		27-2099	Entertainers and Performers, Sports and Related Workers, All Other	48	33	40
		27-3043	Writers and Authors	12	12	53
		27-4014	Sound Engineering Technicians	39	38	53
		39-3092	Costume Attendants	55	36	33
		39-5091	Makeup Artists, Theatrical and Performance	64	45	29
50.0701	Art/Art Studies, General	25-3021	Self-Enrichment Teachers	29	26	45
		25-4011	Archivists	15	13	40
		25-4012	Curators	15	13	40
		25-4013	Museum Technicians and Conservators	15	13	40
		27-1011	Art Directors	31	27	52
		27-1012	Craft Artists	31	27	52
		27-1013	Fine Artists, Including Painters, Sculptors, and Illustrators	31	27	52
		27-1014	Special Effects Artists and Animators	31	27	52
		27-1021	Commercial and Industrial Designers	20	20	64
		27-1024	Graphic Designers	19	26	71
		27-1027	Set and Exhibit Designers	24	29	59
		27-4021	Photographers	34	34	56
		29-1125	Recreational Therapists	25	15	58
		51-9071	Jewelers and Precious Stone and Metal Workers	50	32	30
		51-9194	Etchers and Engravers	52	33	32
50.0901	Music, General	27-2041	Music Directors and Composers	23	20	46
		27-2042	Musicians and Singers	35	28	36
		27-4011	Audio and Video Technicians	39	38	53
		27-4014	Sound Engineering Technicians	39	38	53
		29-1125	Recreational Therapists	25	15	58
		49-9063	Musical Instrument Repairers and Tuners	53	48	40
50.0903	Music Performance, General	27-2041	Music Directors and Composers	23	20	46

CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
51.0000	Health Services/Allied Health/Health Sciences, General	27-2042	Musicians and Singers	35	28	36
		11-9111	Medical and Health Services Managers	24	27	43
		21-1093	Social and Human Service Assistants	36	34	47
		21-1094	Community Health Workers	28	25	46
		29-2018	Clinical Laboratory Technologists and Technicians	32	40	57
		29-2072	Medical Records Specialists	41	46	44
		29-2099	Health Technologists and Technicians, All Other	41	46	44
51.0701	Health/Health Care Administration/Management	43-6013	Medical Secretaries and Administrative Assistants	59	53	35
		11-2032	Public Relations Managers	8	10	59
		11-3012	Administrative Services Managers	42	36	44
		11-3121	Human Resources Managers	26	24	48
		11-9111	Medical and Health Services Managers	24	27	43
		11-9199	Managers, All Other	32	25	44
		13-1041	Compliance Officers	25	25	49
		13-1071	Human Resources Specialists	26	26	54
		15-2041	Statisticians	10	11	41
		27-3031	Public Relations Specialists	12	13	61
51.0805	Pharmacy Technician/Assistant	43-1011	First-Line Supervisors of Office and Administrative Support Workers	48	40	40
		43-6013	Medical Secretaries and Administrative Assistants	59	53	35
		29-2052	Pharmacy Technicians	63	52	33
51.0903	Electroneurodiagnostic/Electro encephalographic Technology/Technologist	31-9095	Pharmacy Aides	52	40	34
		29-2032	Diagnostic Medical Sonographers	17	48	72
		29-2099	Health Technologists and Technicians, All Other	41	46	44
51.0904	Emergency Medical Technology/Technician (EMT Paramedic)	29-2042	Emergency Medical Technicians	55	66	40
		29-2043	Paramedics	55	66	40
		33-1021	First-Line Supervisors of Firefighting and Prevention Workers	44	53	47
		33-2011	Firefighters	52	60	44
		33-9092	Lifeguards, Ski Patrol, and Other Recreational Protective Service	45	36	42

CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
			Workers			
		53-3011	Ambulance Drivers and Attendants, Except Emergency Medical Technicians	77	36	18
51.0908	Respiratory Care Therapy/Therapist	29-1126	Respiratory Therapists	13	65	81
		29-2099	Health Technologists and Technicians, All Other	41	46	44
51.0910	Diagnostic Medical Sonography/Sonographer and Ultrasound Technician	29-2032	Diagnostic Medical Sonographers	17	48	72
		29-2099	Health Technologists and Technicians, All Other	41	46	44
51.1501	Substance Abuse/Addiction Counseling	21-1018	Substance Abuse, Behavioral Disorder, and Mental Health Counselors	11	13	32
		21-1023	Mental Health and Substance Abuse Social Workers	6	5	14
		21-1093	Social and Human Service Assistants	36	34	47
51.1502	Psychiatric/Mental Health Services Technician	29-2053	Psychiatric Technicians	44	42	46
		31-1133	Psychiatric Aides	65	47	26
51.3801	Registered Nursing/Registered Nurse	11-9111	Medical and Health Services Managers	24	27	43
		29-1141	Registered Nurses	5	34	82
		29-1151	Nurse Anesthetists	1	2	12
		29-1161	Nurse Midwives	1	1	8
		29-1171	Nurse Practitioners	1	1	8
51.3901	Licensed Practical/Vocational Nurse Training	29-2061	Licensed Practical and Licensed Vocational Nurses	76	71	22
51.3902	Nursing Assistant/Aide and Patient Care Assistant/Aide	31-1128	Home Health and Personal Care Aides	61	35	19
		31-1131	Nursing Assistants	70	44	19
		31-1132	Orderlies	65	47	26
52.0101	Business/Commerce, General	11-1011	Chief Executives	23	19	46
		11-1021	General and Operations Managers	42	35	43
		11-2022	Sales Managers	30	29	55
		11-3012	Administrative Services Managers	42	36	44
		11-3013	Facilities Managers	42	36	44
		11-3051	Industrial Production Managers	41	29	41
		11-3071	Transportation, Storage, and Distribution Managers	55	36	32
		11-9021	Construction Managers	50	32	37

CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
		11-9151	Social and Community Service Managers	20	19	45
		11-9199	Managers, All Other	32	25	44
		13-1051	Cost Estimators	49	39	43
		13-1082	Project Management Specialists	22	22	52
		13-1111	Management Analysts	16	16	48
		13-1121	Meeting, Convention, and Event Planners	24	23	62
		13-1199	Business Operations Specialists, All Other	22	22	52
		15-1299	Computer Occupations, All Other	24	27	53
52.0201	Business Administration and Management, General	11-1011	Chief Executives	23	19	46
		11-1021	General and Operations Managers	42	35	43
		11-2021	Marketing Managers	13	14	61
		11-2022	Sales Managers	30	29	55
		11-3021	Computer and Information Systems Managers	17	21	54
		11-3031	Financial Managers	28	25	49
		11-3121	Human Resources Managers	26	24	48
		11-9199	Managers, All Other	32	25	44
		13-1071	Human Resources Specialists	26	26	54
		13-1082	Project Management Specialists	22	22	52
		13-1111	Management Analysts	16	16	48
		13-1161	Market Research Analysts and Marketing Specialists	16	15	59
		13-1199	Business Operations Specialists, All Other	22	22	52
		13-2011	Accountants and Auditors	9	14	65
		15-1232	Computer User Support Specialists	35	40	53
		41-1011	First-Line Supervisors of Retail Sales Workers	58	39	32
		41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	35	30	52
		41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	40	31	49
		41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	40	31	49
		43-1011	First-Line Supervisors of Office and Administrative Support Workers	48	40	40

CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
52.0401	Administrative Assistant and Secretarial Science, General	43-4051	Customer Service Representatives	56	42	35
		43-4071	File Clerks	55	43	34
		43-4171	Receptionists and Information Clerks	66	46	28
		43-6011	Executive Secretaries and Executive Administrative Assistants	44	42	48
		43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	58	46	35
		43-9021	Data Entry Keyers	58	46	35
		43-9022	Word Processors and Typists	57	43	35
52.0402	Executive Assistant/Executive Secretary	43-9061	Office Clerks, General	61	45	32
		43-6011	Executive Secretaries and Executive Administrative Assistants	44	42	48
		43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	58	46	35
52.0408	General Office Occupations and Clerical Services	41-2021	Counter and Rental Clerks	63	37	27
		43-1011	First-Line Supervisors of Office and Administrative Support Workers	48	40	40
		43-3021	Billing and Posting Clerks	61	48	32
		43-3031	Bookkeeping, Accounting, and Auditing Clerks	63	49	29
		43-3051	Payroll and Timekeeping Clerks	57	48	37
		43-3061	Procurement Clerks	44	38	44
		43-4021	Correspondence Clerks	61	37	29
		43-4051	Customer Service Representatives	56	42	35
		43-4071	File Clerks	55	43	34
		43-4141	New Accounts Clerks	53	48	39
		43-4151	Order Clerks	61	37	29
		43-4171	Receptionists and Information Clerks	66	46	28
		43-5011	Cargo and Freight Agents	59	43	36
		43-5032	Dispatchers, Except Police, Fire, and Ambulance	67	44	25
		43-5061	Production, Planning, and Expediting Clerks	51	40	38
		43-5071	Shipping, Receiving, and Inventory Clerks	70	34	17
		43-6011	Executive Secretaries and Executive Administrative Assistants	44	42	48
		43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	58	46	35

CIP CODE	CIP TITLE	SOC CODE	SOC TITLE	% WORKFORCE WITH EDUCATION LEVEL AND ONE LEVEL BELOW		
				CERT	ASSOC	BACH
		43-9021	Data Entry Keyers	58	46	35
		43-9022	Word Processors and Typists	57	43	35
		43-9041	Insurance Claims and Policy Processing Clerks	55	45	37
		43-9051	Mail Clerks and Mail Machine Operators, Except Postal Service	67	34	22
		43-9061	Office Clerks, General	61	45	32
		53-7065	Stockers and Order Fillers	68	33	18
54.0101	History, General	11-9199	Managers, All Other	32	25	44
		19-3091	Anthropologists and Archeologists	8	10	37
		19-3093	Historians	8	10	37
		19-3094	Political Scientists	8	10	37
		25-2022	Middle School Teachers, Except Special and Career/Technical Education	3	5	46
		25-2031	Secondary School Teachers, Except Special and Career/Technical Education	2	4	42
		25-4011	Archivists	15	13	40
		25-4012	Curators	15	13	40
		25-4013	Museum Technicians and Conservators	15	13	40

Source: Lightcast 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 county’s workforce needs.

SUPPLY AND DEMAND MODEL

Lightcast 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 BC or at another postsecondary institution in the county, 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, Lightcast 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, Lightcast uses a proprietary employment dataset that reflects total employment. Lightcast 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, Lightcast removes BLS local area employment suppressions to yield the best employment data available at local levels, using Lightcast’s Employees & Self-Employed 2023.1 datarun.

In the datarun, Lightcast calculates the number of county job openings for the occupations that require different levels of education.²⁴ The BLS also provides educational attainment data of current workers, 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, Lightcast adjusts the annual job opening estimates for each SOC code to only incorporate the percentage of workers that correspond with BC’s 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 BC 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.²⁵

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

PROGRAM	OCCUPATION	ASSOC AND ONE LEVEL BELOW	BACH AND ONE LEVEL BELOW	MAST AND ONE LEVEL BELOW	PHD AND ONE LEVEL BELOW
Accounting	Accountant	10%	65%	80%	25%
	Auditor	5%	70%	75%	20%
	Budget analyst	15%	70%	80%	30%
Weighted average		10%	68%	78%	25%

²⁴ See Appendix 1: for a description of the sources and processes of Lightcast data.

²⁵ 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.

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. Lightcast 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 Lightcast. Lightcast 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 Northern Brazoria County.²⁶ 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.

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

EDUCATION OUTPUT

There are three postsecondary educational institutions in Northern Brazoria County. Lightcast 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

²⁶ 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.

institutions in Northern Brazoria County, Lightcast uses data from the Integrated Postsecondary Educational System (IPEDS).²⁷ These data are publicly available through the National Center for Educational Statistics. Completions data are averaged for a three-year period, 2019 through 2021, to smooth out any bumps in enrollment that may be unique to a particular academic year. Data gathered for BC from IPEDS were reviewed for accuracy by BC and updated with 2022 completions data. The following tables display the completion breakdown by institution in Northern Brazoria County.

Table A5.2: Certificate Level Completions in Northern Brazoria County by Postsecondary Institution

INSTITUTION	3-YEAR AVERAGE	% TOTAL
Alvin Community College	417	50%
Brazosport College	396	48%
Pearlands Innovative School of Beauty	17	2%
Total	830	100%

Source: IPEDS.

Table A5.3: Associate Degree Level Completions in Northern Brazoria County by Postsecondary Institution

INSTITUTION	3-YEAR AVERAGE	% TOTAL
Alvin Community College	567	73%
Brazosport College	209	27%
Total	776	100%

Source: IPEDS.

Table A5.4: Bachelor's Degree Level Completions in Northern Brazoria County by Postsecondary Institution

INSTITUTION	3-YEAR AVERAGE	% TOTAL
Brazosport College	48	100%
Total	48	100%

Source: IPEDS.

²⁷ 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.

APPENDIX 6: Employment Projections

Table A6.1: Employment Projections in Northern Brazoria County by Occupation, 2022 and 2032

SOC TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Fast Food & Counter Workers	2,986	3,744	758	25.4%	810	\$9.69
Cashiers	2,755	2,955	200	7.3%	565	\$10.65
Retail Salespersons	2,325	2,632	306	13.2%	392	\$11.93
Home Health & Personal Care Aides	1,676	2,200	524	31.3%	346	\$11.56
Waiters & Waitresses	1,199	1,535	337	28.1%	313	\$9.13
Stockers & Order Fillers	1,494	1,766	272	18.2%	305	\$14.24
Construction Laborers	2,145	2,449	303	14.1%	258	\$16.09
Cooks, Restaurant	888	1,354	466	52.5%	218	\$12.37
First-Line Supervisors of Food Preparation & Serving Workers	998	1,289	292	29.2%	209	\$13.15
General & Operations Managers	1,739	2,013	274	15.8%	192	\$42.41
Office Clerks, General	1,303	1,400	97	7.4%	181	\$15.66
Customer Service Representatives	1,163	1,212	49	4.2%	174	\$15.80
Laborers & Freight, Stock, & Material Movers, Hand	942	1,072	130	13.8%	155	\$13.60
Janitors & Cleaners, Except Maids & Housekeeping Cleaners	972	1,071	99	10.2%	153	\$12.33
Heavy & Tractor-Trailer Truck Drivers	1,206	1,270	64	5.3%	152	\$20.57
First-Line Supervisors of Construction Trades & Extraction Workers	1,101	1,223	121	11.0%	123	\$29.38
Childcare Workers	672	717	45	6.7%	122	\$10.07
First-Line Supervisors of Retail Sales Workers	945	1,053	108	11.4%	121	\$18.87
Secretaries & Administrative Assistants, Except Legal, Medical, & Executive	894	921	27	3.0%	111	\$16.46
Medical Assistants	512	722	210	41.1%	107	\$15.93
Food Preparation Workers	487	589	102	20.8%	105	\$13.08
Teaching Assistants, Except Postsecondary	647	799	152	23.5%	100	\$10.59
Elementary School Teachers, Except Special Education	923	1,115	192	20.8%	93	\$28.62
Receptionists & Information Clerks	547	651	104	19.1%	93	\$12.92
Bookkeeping, Accounting, & Auditing Clerks	662	707	46	6.9%	89	\$20.14
First-Line Supervisors of Office & Administrative Support Workers	715	778	63	8.8%	87	\$26.23
Operating Engineers & Other Construction Equipment Operators	622	741	119	19.2%	82	\$20.83

SOC TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Construction Managers	797	935	137	17.2%	80	\$36.66
Carpenters	798	782	(17)	(2.1%)	76	\$19.42
Hosts & Hostesses, Restaurant, Lounge, & Coffee Shop	241	317	76	31.4%	75	\$9.59
Maintenance & Repair Workers, General	615	699	85	13.8%	72	\$16.65
Preschool Teachers, Except Special Education	537	634	97	18.0%	72	\$12.41
Postsecondary Teachers	524	673	149	28.4%	67	\$40.79
Welders, Cutters, Solderers, & Brazers	505	577	72	14.2%	67	\$21.30
Medical Secretaries & Administrative Assistants	419	536	117	28.0%	67	\$16.10
Cooks, Fast Food	326	406	80	24.4%	65	\$9.70
Electricians	497	575	78	15.7%	63	\$25.65
Nursing Assistants	379	406	26	7.0%	62	\$13.62
Secondary School Teachers, Except Special & Career/Technical Education	636	774	138	21.7%	61	\$28.54
Maids & Housekeeping Cleaners	403	413	10	2.6%	61	\$11.92
Registered Nurses	733	855	122	16.6%	58	\$34.38
Substitute Teachers, Short-Term	395	479	84	21.3%	58	\$13.30
Dining Room & Cafeteria Attendants & Bartender Helpers	241	316	75	31.2%	58	\$9.66
Military-only occupations	423	477	54	12.7%	57	\$14.67
Project Management Specialists	573	636	62	10.9%	55	\$42.92
Sales Representatives of Services, Except Advertising, Insurance, Financial Services, & Travel	432	491	59	13.7%	55	\$26.03
Plumbers, Pipefitters, & Steamfitters	432	496	63	14.7%	54	\$23.92
Driver/Sales Workers	321	424	104	32.3%	54	\$13.10
Managers, All Other	521	610	89	17.0%	53	\$36.81
Dental Assistants	299	349	50	16.6%	52	\$17.24
Dishwashers	227	292	65	28.6%	51	\$10.44
Landscaping & Groundskeeping Workers	326	362	36	11.0%	49	\$13.15
Bartenders	207	277	70	34.1%	49	\$9.66
Middle School Teachers, Except Special & Career/Technical Education	475	567	92	19.4%	47	\$28.60
Sales Representatives, Wholesale & Manufacturing, Except Technical & Scientific Products	372	433	60	16.2%	47	\$26.80
Exercise Trainers & Group Fitness Instructors	187	256	69	36.6%	47	\$16.96
Accountants & Auditors	450	502	51	11.4%	46	\$34.71

SOC TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Industrial Machinery Mechanics	393	462	69	17.6%	44	\$26.95
Shipping, Receiving, & Inventory Clerks	386	385	(1)	(0.2%)	43	\$16.31
Light Truck Drivers	298	345	47	15.9%	43	\$16.70
Miscellaneous Assemblers & Fabricators	338	340	3	0.8%	42	\$16.69
Amusement & Recreation Attendants	129	158	29	22.7%	41	\$9.70
First-Line Supervisors of Production & Operating Workers	380	385	4	1.2%	40	\$34.19
First-Line Supervisors of Mechanics, Installers, & Repairers	347	392	45	12.8%	39	\$31.44
Industrial Truck & Tractor Operators	314	337	23	7.3%	39	\$17.96
Police & Sheriff's Patrol Officers	403	439	36	9.0%	38	\$26.95
Inspectors, Testers, Sorters, Samplers, & Weighers	301	301	0	0.0%	38	\$17.71
Cleaners of Vehicles & Equipment	233	255	22	9.5%	38	\$14.42
First-Line Supervisors of Transportation & Material Moving Workers, Except Aircraft Cargo Handling Supervisors	264	298	33	12.6%	37	\$24.41
Licensed Practical & Licensed Vocational Nurses	336	394	58	17.3%	35	\$22.78
Bus Drivers, School	185	221	36	19.7%	35	\$16.01
Painters, Construction & Maintenance	387	378	(9)	(2.3%)	33	\$16.82
Security Guards	224	236	12	5.4%	33	\$12.84
Self-Enrichment Teachers	165	257	92	55.6%	33	\$14.41
Pharmacy Technicians	268	323	56	20.8%	32	\$16.98
Human Resources Specialists	250	297	47	18.7%	31	\$27.22
Cooks, Institution & Cafeteria	172	201	29	16.8%	31	\$13.07
Chemical Equipment Operators & Tenders	316	255	(61)	(19.3%)	30	\$38.40
Automotive Service Technicians & Mechanics	264	293	29	11.0%	30	\$20.22
Farmworkers & Laborers, Crop, Nursery, & Greenhouse	154	188	34	21.8%	30	\$13.62
Business Operations Specialists, All Other	247	290	43	17.5%	29	\$33.23
Tutors	133	185	52	39.2%	29	\$12.64
Correctional Officers & Jailers	321	282	(38)	(12.0%)	28	\$19.31
Sales & Related Workers, All Other	187	202	15	8.2%	28	\$13.17
Billing & Posting Clerks	175	217	42	23.7%	27	\$16.82
Heating, Air Conditioning, & Refrigeration Mechanics & Installers	225	258	33	14.6%	26	\$20.95
Hairdressers, Hairstylists, & Cosmetologists	135	176	41	30.7%	26	\$12.03

SOC TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Machinists	211	231	20	9.3%	25	\$21.91
Medical & Health Services Managers	181	257	77	42.4%	25	\$45.28
Parts Salespersons	167	189	22	13.0%	25	\$13.16
Helpers--Production Workers	159	160	1	0.4%	25	\$13.86
Packers & Packagers, Hand	142	156	13	9.2%	25	\$11.75
Mobile Heavy Equipment Mechanics, Except Engines	195	231	37	18.9%	24	\$24.96
Coaches & Scouts	106	166	60	57.2%	24	\$16.95
Bakers	129	157	28	21.9%	23	\$12.19
Counter & Rental Clerks	155	172	18	11.5%	22	\$13.48
Recreation Workers	93	109	16	17.0%	22	\$12.37
Postal Service Mail Carriers	202	239	37	18.4%	21	\$22.69
Instructional Coordinators	174	208	34	19.4%	21	\$28.99
Chemical Plant & System Operators	214	172	(41)	(19.2%)	20	\$39.21
Education Administrators, Kindergarten through Secondary	192	231	39	20.2%	20	\$43.21
Production, Planning, & Expediting Clerks	158	175	17	10.6%	20	\$21.44
Excavating & Loading Machine & Dragline Operators, Surface Mining	147	176	29	19.8%	20	\$20.63
Animal Caretakers	79	107	28	35.6%	20	\$11.33
Computer User Support Specialists	201	224	23	11.4%	19	\$21.18
Financial Managers	178	217	39	21.9%	19	\$66.45
Electrical Power-Line Installers & Repairers	134	189	55	41.1%	19	\$33.84
Market Research Analysts & Marketing Specialists	127	169	43	33.6%	19	\$27.50
Food Service Managers	99	140	40	40.5%	19	\$26.21
Software Developers	181	226	45	24.6%	18	\$44.61
Buyers & Purchasing Agents	167	171	4	2.6%	18	\$27.78
Educational, Guidance, & Career Counselors & Advisors	160	196	36	22.8%	18	\$28.44
Farmers, Ranchers, & Other Agricultural Managers	141	160	18	13.1%	18	\$18.42
Social & Human Service Assistants	121	148	27	22.7%	18	\$17.58
Sales Managers	163	186	22	13.8%	17	\$54.38
Nurse Practitioners	112	202	90	80.7%	17	\$53.51
Civil Engineers	208	221	12	5.8%	16	\$44.90
Cost Estimators	163	172	9	5.7%	16	\$32.56

SOC TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Training & Development Specialists	141	165	23	16.4%	16	\$27.38
Occupational Health & Safety Specialists	134	147	13	9.6%	16	\$34.75
Butchers & Meat Cutters	104	118	14	13.2%	16	\$13.93
Cement Masons & Concrete Finishers	159	162	2	1.6%	15	\$19.88
Insurance Sales Agents	131	150	19	14.3%	15	\$21.75
Executive Secretaries & Executive Administrative Assistants	129	124	(4)	(3.2%)	15	\$27.32
Child, Family, & School Social Workers	124	146	22	17.5%	15	\$20.94
Substance Abuse, Behavioral Disorder, & Mental Health Counselors	102	139	37	35.8%	15	\$23.05
Cooks, Short Order	80	95	15	18.9%	15	\$9.82
Physical Therapist Assistants	61	101	40	65.7%	15	\$38.67
Hotel, Motel, & Resort Desk Clerks	56	80	24	43.7%	15	\$11.57
Firefighters	151	167	17	11.0%	14	\$20.68
Bus & Truck Mechanics & Diesel Engine Specialists	142	151	9	6.4%	14	\$21.52
Construction & Building Inspectors	108	113	4	4.1%	14	\$33.29
Helpers--Installation, Maintenance, & Repair Workers	98	111	13	13.1%	14	\$14.68
Computer Systems Analysts	154	169	15	9.4%	13	\$44.41
Pipelayers	123	129	6	5.1%	13	\$16.69
Helpers--Electricians	98	104	6	6.3%	13	\$19.02
Educational, Guidance, & Career Counselors & Advisors	94	196	18	22.8%	13	\$28.44
Automotive & Watercraft Service Attendants	160	80	7	9.3%	13	\$14.58
Chefs & Head Cooks	69	92	23	33.6%	13	\$16.81
School Bus Monitors	54	62	8	15.6%	13	\$10.48
Lifeguards, Ski Patrol, & Other Recreational Protective Service Workers	40	49	9	22.7%	13	\$9.84
Ushers, Lobby Attendants, & Ticket Takers	35	47	12	34.7%	13	\$9.86
Clergy	114	121	7	6.4%	12	\$23.55
Special Education Teachers, Kindergarten & Elementary School	112	137	25	22.8%	12	\$28.71
Real Estate Sales Agents	109	127	18	16.0%	12	\$16.84
Physical Therapists	107	170	63	58.6%	12	\$53.17
First-Line Supervisors of Non-Retail Sales Workers	106	118	12	10.8%	12	\$32.65
Packaging & Filling Machine Operators & Tenders	103	98	(5)	(4.4%)	12	\$16.47
Management Analysts	98	117	19	19.4%	12	\$39.35

SOC TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Tire Repairers & Changers	91	102	11	11.8%	12	\$14.03
Information & Record Clerks, All Other	82	94	13	15.3%	12	\$15.79
Massage Therapists	63	86	23	36.2%	12	\$18.80
Crossing Guards & Flaggers	48	57	9	19.1%	12	\$13.45
Tellers	109	96	(14)	(12.3%)	11	\$15.93
Dispatchers, Except Police, Fire, & Ambulance	98	104	6	6.4%	11	\$18.35
Crane & Tower Operators	91	101	9	10.1%	11	\$27.79
Installation, Maintenance, & Repair Workers, All Other	89	98	9	10.5%	11	\$18.12
Pest Control Workers	49	72	23	46.3%	11	\$19.63
Structural Iron & Steel Workers	95	94	(1)	(1.1%)	10	\$21.67
Computer Numerically Controlled Tool Operators	90	93	3	3.6%	10	\$21.85
Bill & Account Collectors	84	83	(1)	(1.0%)	10	\$15.86
Speech-Language Pathologists	83	126	42	50.7%	10	\$38.45
Court, Municipal, & License Clerks	81	83	2	2.7%	10	\$18.86
Physician Assistants	75	118	43	56.5%	10	\$43.37
First-Line Supervisors of Personal Service Workers	67	81	14	20.8%	10	\$17.26
Helpers--Pipelayers, Plumbers, Pipefitters, & Steamfitters	67	78	11	15.9%	10	\$15.86
Telecommunications Line Installers & Repairers	65	82	18	27.2%	10	\$28.96
Healthcare Support Workers, All Other	59	71	12	19.8%	10	\$17.04
Shuttle Drivers & Chauffeurs	49	70	20	41.3%	10	\$12.15
Lawyers	118	147	29	24.7%	9	\$58.20
Compliance Officers	102	111	9	8.9%	9	\$33.42
Dental Hygienists	92	116	24	26.0%	9	\$35.13
Securities, Commodities, & Financial Services Sales Agents	92	100	8	8.6%	9	\$33.09
Computer & Information Systems Managers	91	109	17	18.9%	9	\$69.28
Property, Real Estate, & Community Association Managers	89	101	12	13.1%	9	\$26.43
Veterinary Technologists & Technicians	87	89	2	2.6%	9	\$14.74
Administrative Services Managers	85	99	15	17.2%	9	\$43.61
Medical Records Specialists	83	102	20	23.7%	9	\$19.07
Coating, Painting, & Spraying Machine Setters, Operators, & Tenders	78	82	5	6.2%	9	\$19.21
Directors, Religious Activities & Education	77	81	4	4.8%	9	\$26.09

SOC TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Public Relations Specialists	76	94	17	22.8%	9	\$26.50
Sales Representatives, Wholesale & Manufacturing, Technical & Scientific Products	76	88	12	15.6%	9	\$36.44
Chemical Technicians	75	70	(5)	(6.1%)	9	\$36.29
Roustabouts, Oil & Gas	70	75	5	7.3%	9	\$19.90
Production Workers, All Other	69	76	7	10.2%	9	\$15.86
Helpers, Construction Trades, All Other	67	73	6	8.9%	9	\$16.22
First-Line Supervisors of Housekeeping & Janitorial Workers	64	73	9	13.4%	9	\$17.11
Paralegals & Legal Assistants	58	76	18	31.1%	9	\$25.78
Farmworkers, Farm, Ranch, & Aquacultural Animals	47	56	9	18.3%	9	\$15.15
Physical Therapist Aides	39	61	22	55.9%	9	\$15.08
Occupational Therapy Assistants	35	55	19	55.4%	9	\$40.45
Pharmacists	151	171	20	13.5%	8	\$57.59
Mechanical Engineers	130	132	2	1.9%	8	\$56.48
Industrial Engineers	126	130	4	3.1%	8	\$46.17
Industrial Production Managers	111	111	0	0.0%	8	\$58.74
Petroleum Pump System Operators, Refinery Operators, & Gaugers	84	69	(15)	(17.5%)	8	\$34.65
Special Education Teachers, Secondary School	80	99	19	23.4%	8	\$28.69
Mixing & Blending Machine Setters, Operators, & Tenders	78	69	(9)	(11.2%)	8	\$17.94
Sheet Metal Workers	77	83	6	7.3%	8	\$20.63
Payroll & Timekeeping Clerks	73	73	0	0.0%	8	\$20.35
Data Entry Keyers	64	60	(5)	(7.4%)	8	\$14.81
Wellhead Pumpers	57	65	8	13.9%	8	\$34.25
Captains, Mates, & Pilots of Water Vessels	50	64	13	26.3%	8	\$48.10
Wind Turbine Service Technicians	44	66	22	50.5%	8	\$23.17
Food Servers, Nonrestaurant	43	52	9	22.0%	8	\$10.95
Refuse & Recyclable Material Collectors	41	53	12	29.8%	8	\$15.13
Producers & Directors	40	65	26	64.0%	8	\$25.38
Manicurists & Pedicurists	40	59	20	49.7%	8	\$10.26
Protective Service Workers, All Other	25	31	6	24.5%	8	\$18.04
Food Preparation & Serving Related Workers, All Other	23	34	11	48.9%	8	\$10.67
Chemical Engineers	127	122	(5)	(3.7%)	7	\$74.11

SOC TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Physicians, All Other	112	147	35	31.3%	7	\$79.28
Architectural & Engineering Managers	89	91	2	1.8%	7	\$74.97
Network & Computer Systems Administrators	88	97	9	10.0%	7	\$36.51
Career/Technical Education Teachers, Secondary School	81	95	14	17.9%	7	\$28.69
Computer Occupations, All Other	76	86	10	13.6%	7	\$36.33
Health Technologists & Technicians, All Other	73	89	15	21.1%	7	\$19.80
Automotive Body & Related Repairers	64	72	8	13.2%	7	\$21.63
Logisticians	62	76	14	23.1%	7	\$33.91
Occupational Therapists	60	88	28	47.3%	7	\$50.07
Healthcare Social Workers	55	69	14	25.2%	7	\$28.18
Earth Drillers, Except Oil & Gas	50	61	10	20.7%	7	\$20.83
Bus Drivers, Transit & Intercity	48	55	7	14.5%	7	\$21.03
Musicians & Singers	45	55	10	21.7%	7	\$31.19
Merchandise Displayers & Window Trimmers	45	55	10	22.5%	7	\$14.59
Teachers & Instructors, All Other	36	53	17	46.8%	7	\$21.75
Veterinary Assistants & Laboratory Animal Caretakers	32	37	4	12.9%	7	\$12.35
Drywall & Ceiling Tile Installers	81	69	(12)	(14.7%)	6	\$19.60
Education & Childcare Administrators, Preschool & Daycare	66	74	8	12.6%	6	\$22.26
Roofers	65	62	(3)	(4.7%)	6	\$18.82
Transportation, Storage, & Distribution Managers	63	71	8	12.2%	6	\$44.37
Boilermakers	59	66	8	13.3%	6	\$28.49
Reinforcing Iron & Rebar Workers	59	59	0	0.0%	6	\$21.54
Special Education Teachers, Middle School	58	70	12	20.4%	6	\$28.71
Marketing Managers	55	65	10	18.3%	6	\$55.29
Control & Valve Installers & Repairers, Except Mechanical Door	55	64	10	17.4%	6	\$21.26
Cutting, Punching, & Press Machine Setters, Operators, & Tenders, Metal & Plastic	55	59	4	7.5%	6	\$16.36
Service Unit Operators, Oil & Gas	54	53	(1)	(2.5%)	6	\$20.47
Electrical, Electronic, & Electromechanical Assemblers, Except Coil Winders, Tapers, & Finishers	54	46	(8)	(14.4%)	6	\$16.00
Architectural & Civil Drafters	53	55	2	3.8%	6	\$27.16

SOC TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Telecommunications Equipment Installers & Repairers, Except Line Installers	53	46	(6)	(11.9%)	6	\$27.20
Social & Community Service Managers	51	62	11	21.3%	6	\$32.62
Librarians & Media Collections Specialists	49	59	11	21.9%	6	\$28.31
Multiple Machine Tool Setters, Operators, & Tenders, Metal & Plastic	48	52	4	7.4%	6	\$16.49
Aircraft Mechanics & Service Technicians	47	60	13	28.3%	6	\$34.52
Tank Car, Truck, & Ship Loaders	46	46	0	0.0%	6	\$29.35
Railroad Conductors & Yardmasters	45	56	11	25.0%	6	\$24.32
Office & Administrative Support Workers, All Other	45	49	4	9.5%	6	\$16.70
Weighers, Measurers, Checkers, & Samplers, Recordkeeping	45	47	2	5.6%	6	\$16.59
Educational Instruction & Library Workers, All Other	43	57	14	34.0%	6	\$17.56
Community & Social Service Specialists, All Other	43	50	6	14.4%	6	\$20.61
Laundry & Dry-Cleaning Workers	41	41	0	0.0%	6	\$10.20
Interviewers, Except Eligibility & Loan	40	46	6	14.1%	6	\$16.17
Sailors & Marine Oilers	39	47	8	20.0%	6	\$20.35
Ophthalmic Medical Technicians	33	48	15	45.4%	6	\$15.65
Skincare Specialists	32	44	12	36.2%	6	\$15.82
Dentists, General	117	134	17	14.5%	5	\$75.52
Petroleum Engineers	72	67	(4)	(6.2%)	5	\$58.44
Radiologic Technologists & Technicians	62	78	16	26.3%	5	\$27.47
Clinical Laboratory Technologists & Technicians	62	70	8	12.3%	5	\$24.80
Loan Officers	62	65	3	4.5%	5	\$27.15
Insulation Workers, Mechanical	60	50	(10)	(17.1%)	5	\$20.68
Financial & Investment Analysts	56	64	8	14.1%	5	\$35.20
Engineering Technologists & Technicians, Except Drafters, All Other	54	54	0	0.0%	5	\$26.94
Structural Metal Fabricators & Fitters	53	52	(2)	(2.9%)	5	\$19.70
School Psychologists	52	62	10	18.6%	5	\$36.28
Human Resources Managers	52	60	8	15.1%	5	\$56.38
Brickmasons & Blockmasons	52	48	(4)	(8.4%)	5	\$21.56
Chief Executives	47	56	9	19.2%	5	\$96.09
Loan Interviewers & Clerks	47	48	0	0.0%	5	\$19.91

SOC TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Eligibility Interviewers, Government Programs	47	46	(0)	0.0%	5	\$16.08
Glaziers	47	39	(8)	(16.7%)	5	\$18.99
Postal Service Mail Sorters, Processors, & Processing Machine Operators	46	51	5	11.3%	5	\$20.66
Opticians, Dispensing	43	52	9	20.8%	5	\$13.36
Surveying & Mapping Technicians	41	42	2	4.2%	5	\$20.69
File Clerks	40	41	1	2.9%	5	\$13.70
Insurance Claims & Policy Processing Clerks	39	44	5	11.8%	5	\$17.29
Locomotive Engineers	38	48	10	26.0%	5	\$19.55
Security & Fire Alarm Systems Installers	37	41	4	9.4%	5	\$21.20
Religious Workers, All Other	34	36	2	6.3%	5	\$16.43
First-Line Supervisors of Entertainment & Recreation Workers, Except Gambling Services	33	42	9	26.3%	5	\$19.86
Meeting, Convention, & Event Planners	32	41	9	29.0%	5	\$22.10
Cargo & Freight Agents	31	39	8	25.4%	5	\$20.45
Parking Attendants	31	36	5	15.9%	5	\$9.61
Demonstrators & Product Promoters	24	28	4	18.7%	5	\$13.13
Electrical Engineers	60	65	5	7.7%	4	\$45.59
Engineers, All Other	51	53	3	5.1%	4	\$48.31
First-Line Supervisors of Firefighting & Prevention Workers	46	51	5	10.7%	4	\$33.44
Probation Officers & Correctional Treatment Specialists	46	44	(2)	(3.7%)	4	\$20.87
First-Line Supervisors of Police & Detectives	44	49	5	11.0%	4	\$43.22
Chemists	43	43	0	0.0%	4	\$41.10
Civil Engineering Technologists & Technicians	43	42	(1)	(2.6%)	4	\$27.42
Tile & Stone Setters	42	39	(3)	(8.0%)	4	\$18.07
Facilities Managers	40	47	7	17.0%	4	\$44.56
Water & Wastewater Treatment Plant & System Operators	40	40	0	0.0%	4	\$19.99
Computer Network Support Specialists	39	45	6	16.2%	4	\$27.61
Electrical & Electronics Repairers, Commercial & Industrial Equipment	39	44	5	13.4%	4	\$32.54
Operations Research Analysts	38	46	8	20.8%	4	\$43.91
Compensation, Benefits, & Job Analysis Specialists	38	43	5	12.5%	4	\$27.99
Public Safety Telecommunicators	37	41	4	9.8%	4	\$19.67

SOC TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Education Administrators, Postsecondary	35	46	11	32.2%	4	\$44.78
Graphic Designers	35	41	6	17.8%	4	\$21.06
Human Resources Assistants, Except Payroll & Timekeeping	34	37	3	10.1%	4	\$20.30
Riggers	34	35	1	3.7%	4	\$21.04
Rail Car Repairers	32	36	5	14.2%	4	\$22.75
Paving, Surfacing, & Tamping Equipment Operators	32	33	1	3.1%	4	\$20.68
Interpreters & Translators	31	37	7	21.5%	4	\$19.48
Adult Basic Education, Adult Secondary Education, & English as a Second Language Instructors	31	35	4	12.0%	4	\$27.81
Electrical & Electronic Engineering Technologists & Technicians	30	32	1	4.7%	4	\$33.05
Door-to-Door Sales Workers, News & Street Vendors, & Related Workers	30	26	(4)	(12.8%)	4	\$14.39
Maintenance Workers, Machinery	29	32	3	10.4%	4	\$26.62
Miscellaneous Construction & Related Workers	29	32	3	10.0%	4	\$20.68
Telemarketers	29	24	(5)	(15.7%)	4	\$12.72
Cabinetmakers & Bench Carpenters	28	36	9	31.0%	4	\$16.07
Helpers--Extraction Workers	27	32	5	19.0%	4	\$16.33
Sewing Machine Operators	27	32	6	20.6%	4	\$11.37
Teaching Assistants, Postsecondary	25	33	8	30.2%	4	\$10.52
Community Health Workers	25	31	6	25.5%	4	\$18.16
Food Batchmakers	25	26	1	3.2%	4	\$13.20
Phlebotomists	24	27	3	11.3%	4	\$15.85
Fine Artists, Including Painters, Sculptors, & Illustrators	20	30	10	53.3%	4	\$12.70
Residential Advisors	20	25	5	27.8%	4	\$15.39
Medical Transcriptionists	20	22	2	10.0%	4	\$13.03
Agricultural Workers, All Other	18	22	4	19.3%	4	\$17.15
Agricultural Equipment Operators	17	21	5	29.6%	4	\$12.52
Choreographers	15	21	6	39.7%	4	\$21.79
Personal Care & Service Workers, All Other	15	21	5	32.6%	4	\$13.36
Pediatricians, General	50	63	13	26.0%	3	\$111.43
Detectives & Criminal Investigators	42	43	0	0.0%	3	\$33.99
Nurse Anesthetists	38	51	13	33.1%	3	\$90.07
Surgical Technologists	37	42	5	14.4%	3	\$25.30

SOC TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Geoscientists, Except Hydrologists & Geographers	35	35	0	0.0%	3	\$70.87
Family Medicine Physicians	34	50	16	47.7%	3	\$62.72
Software Quality Assurance Analysts & Testers	32	38	6	18.4%	3	\$42.73
Personal Financial Advisors	31	38	7	22.9%	3	\$36.42
Millwrights	31	34	3	9.7%	3	\$26.91
Environmental Scientists & Specialists, Including Health	29	29	0	0.0%	3	\$33.12
Derrick Operators, Oil & Gas	29	27	(2)	(6.0%)	3	\$22.09
Medical Scientists, Except Epidemiologists	28	35	8	27.6%	3	\$27.92
Computer, Automated Teller, & Office Machine Repairers	28	30	2	7.6%	3	\$17.46
Purchasing Managers	27	30	3	10.7%	3	\$56.02
Order Clerks	27	26	(1)	(4.7%)	3	\$16.32
Information Security Analysts	26	34	8	31.5%	3	\$45.16
First-Line Supervisors of Landscaping, Lawn Service, & Groundskeeping Workers	26	30	4	14.5%	3	\$21.39
Industrial Engineering Technologists & Technicians	26	26	0	0.0%	3	\$28.65
Legal Secretaries & Administrative Assistants	26	26	0	0.0%	3	\$20.52
Crushing, Grinding, & Polishing Machine Setters, Operators, & Tenders	26	26	0	0.0%	3	\$18.28
Separating, Filtering, Clarifying, Precipitating, & Still Machine Setters, Operators, & Tenders	26	25	(1)	(4.0%)	3	\$19.58
Extruding, Forming, Pressing, & Compacting Machine Setters, Operators, & Tenders	26	24	(2)	(7.9%)	3	\$18.19
Property Appraisers & Assessors	25	28	3	11.2%	3	\$35.05
Sales Engineers	25	26	1	2.9%	3	\$45.14
Molding, Coremaking, & Casting Machine Setters, Operators, & Tenders, Metal & Plastic	25	26	1	2.9%	3	\$13.96
Helpers--Carpenters	25	25	0	0.0%	3	\$19.28
Fundraisers	24	31	7	30.3%	3	\$27.02
Postal Service Clerks	24	28	4	17.7%	3	\$28.23
Grinding, Lapping, Polishing, & Buffing Machine Tool Setters, Operators, & Tenders, Metal & Plastic	24	25	2	6.5%	3	\$17.64
Interior Designers	23	27	5	20.5%	3	\$26.33
Pump Operators, Except Wellhead Pumpers	23	25	2	10.2%	3	\$30.34
Food Processing Workers, All Other	23	24	0	0.0%	3	\$16.84

SOC TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Rotary Drill Operators, Oil & Gas	23	22	(1)	(3.7%)	3	\$26.55
Audio & Video Technicians	22	29	7	29.7%	3	\$20.48
Computer Numerically Controlled Tool Programmers	22	27	5	23.1%	3	\$28.21
Psychiatric Technicians	21	26	5	24.8%	3	\$16.14
Occupational Health & Safety Technicians	21	23	3	12.7%	3	\$25.57
Mail Clerks & Mail Machine Operators, Except Postal Service	21	21	0	0.0%	3	\$15.80
Biological Technicians	20	23	3	15.4%	3	\$17.19
Library Technicians	20	23	2	11.7%	3	\$16.11
Septic Tank Servicers & Sewer Pipe Cleaners	18	23	5	25.6%	3	\$16.13
Commercial Pilots	18	18	0	0.0%	3	\$46.27
Hazardous Materials Removal Workers	17	21	4	25.5%	3	\$19.28
Airline Pilots, Copilots, & Flight Engineers	17	20	3	15.1%	3	\$101.99
Motor Vehicle Operators, All Other	15	17	2	12.4%	3	\$10.77
Cooks, All Other	14	16	3	18.8%	3	\$13.45
Pharmacy Aides	14	16	3	19.7%	3	\$10.98
Library Assistants, Clerical	13	16	2	16.9%	3	\$12.31
Shoe Machine Operators & Tenders	9	18	9	91.4%	3	\$13.22
General Internal Medicine Physicians	36	48	11	31.0%	2	\$110.54
Optometrists	35	44	8	22.8%	2	\$45.81
Computer Network Architects	33	35	2	6.2%	2	\$55.66
Paramedics	33	31	(2)	(7.2%)	2	\$18.12
Emergency Medical Technicians	30	27	(4)	(11.9%)	2	\$16.47
Claims Adjusters, Examiners, & Investigators	29	29	0	0.0%	2	\$29.08
Architects, Except Landscape & Naval	28	31	3	9.6%	2	\$39.80
Surveyors	27	29	1	5.1%	2	\$26.98
Computer Programmers	26	26	0	0.0%	2	\$40.61
Natural Sciences Managers	25	27	2	6.4%	2	\$44.02
Respiratory Therapists	25	27	2	7.0%	2	\$27.86
First-Line Supervisors of Correctional Officers	25	23	(2)	(9.2%)	2	\$21.30
Diagnostic Medical Sonographers	23	30	7	32.5%	2	\$33.42
Database Administrators	23	26	3	11.9%	2	\$41.61

SOC TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Health & Safety Engineers, Except Mining Safety Engineers & Inspectors	23	25	2	8.3%	2	\$56.46
Mechanical Drafters	23	23	0	0.0%	2	\$29.66
Plant & System Operators, All Other	23	22	(1)	(3.5%)	2	\$18.56
Dietitians & Nutritionists	22	26	4	17.6%	2	\$27.58
Financial Specialists, All Other	22	25	3	14.8%	2	\$27.80
Mechanical Engineering Technologists & Technicians	22	23	1	2.8%	2	\$27.52
Printing Press Operators	21	19	(3)	(11.7%)	2	\$18.72
Insulation Workers, Floor, Ceiling, & Wall	21	15	(6)	(27.5%)	2	\$17.53
Highway Maintenance Workers	20	23	3	15.8%	2	\$16.35
Procurement Clerks	20	21	1	5.0%	2	\$19.80
Photographers	20	21	1	5.5%	2	\$14.73
Tax Preparers	20	18	(2)	(10.4%)	2	\$27.06
Music Directors & Composers	19	21	2	12.4%	2	\$34.01
Home Appliance Repairers	19	21	2	10.9%	2	\$18.91
Molders, Shapers, & Casters, Except Metal & Plastic	19	21	1	7.6%	2	\$14.41
Environmental Engineering Technologists & Technicians	19	20	2	8.3%	2	\$17.78
Education Administrators, All Other	18	26	8	43.5%	2	\$35.92
Web Developers	18	22	4	22.4%	2	\$27.31
Railroad Brake, Signal, & Switch Operators & Locomotive Firers	18	21	3	18.1%	2	\$26.05
Fence Erectors	18	20	2	12.1%	2	\$16.85
Mental Health & Substance Abuse Social Workers	17	23	6	38.8%	2	\$23.90
Aerospace Engineers	17	22	5	26.4%	2	\$60.82
Budget Analysts	17	19	2	11.5%	2	\$39.04
Rail-Track Laying & Maintenance Equipment Operators	17	19	2	10.7%	2	\$19.15
Floor Layers, Except Carpet, Wood, & Hard Tiles	17	19	2	10.8%	2	\$18.83
Outdoor Power Equipment & Other Small Engine Mechanics	17	19	3	15.0%	2	\$15.63
Gas Plant Operators	17	17	0	0.0%	2	\$42.00
Forensic Science Technicians	16	17	1	8.0%	2	\$26.95
Life, Physical, & Social Science Technicians, All Other	16	17	1	9.1%	2	\$21.66
Rail Yard Engineers, Dinkey Operators, & Hostlers	16	16	0	0.0%	2	\$23.26
Lathe & Turning Machine Tool Setters, Operators, & Tenders, Metal & Plastic	16	16	0	0.0%	2	\$17.64

SOC TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Extruding & Drawing Machine Setters, Operators, & Tenders, Metal & Plastic	16	14	(2)	(9.8%)	2	\$17.41
Solar Photovoltaic Installers	15	19	4	25.3%	2	\$26.92
Special Education Teachers, Preschool	15	19	3	21.0%	2	\$23.42
Counselors, All Other	15	19	4	23.2%	2	\$21.25
Rehabilitation Counselors	15	18	3	20.3%	2	\$20.67
Couriers & Messengers	15	18	3	19.2%	2	\$14.18
Title Examiners, Abstractors, & Searchers	15	17	2	10.9%	2	\$25.35
Social Workers, All Other	15	16	2	13.0%	2	\$27.47
Geological Technicians, Except Hydrologic Technicians	15	16	0	0.0%	2	\$22.15
Welding, Soldering, & Brazing Machine Setters, Operators, & Tenders	15	16	1	3.8%	2	\$20.60
Transportation Inspectors	14	16	2	12.2%	2	\$24.28
Tool & Die Makers	14	16	2	16.9%	2	\$22.85
Environmental Science & Protection Technicians, Including Health	14	15	1	6.7%	2	\$21.63
Slaughterers & Meat Packers	14	15	1	5.0%	2	\$12.68
Switchboard Operators, Including Answering Service	14	13	(1)	(6.6%)	2	\$13.10
Athletic Trainers	13	20	6	47.7%	2	\$27.27
Craft Artists	13	19	6	47.3%	2	\$11.66
Public Relations Managers	13	17	3	25.2%	2	\$48.39
Special Education Teachers, All Other	13	17	4	31.9%	2	\$28.69
Health Education Specialists	13	17	3	25.4%	2	\$24.55
Training & Development Managers	13	16	3	20.1%	2	\$56.43
First-Line Supervisors of Farming, Fishing, & Forestry Workers	13	16	3	27.3%	2	\$22.80
Editors	13	15	2	11.5%	2	\$26.97
Stationary Engineers & Boiler Operators	13	15	2	12.6%	2	\$16.96
Office Machine Operators, Except Computer	13	13	0	0.0%	2	\$15.76
Medical Equipment Repairers	12	15	3	27.9%	2	\$24.75
Material Moving Workers, All Other	12	15	3	21.4%	2	\$20.43
Tailors, Dressmakers, & Custom Sewers	12	14	1	11.5%	2	\$12.56
Machine Feeders & Offbearers	12	13	1	8.4%	2	\$17.75
Cutting & Slicing Machine Setters, Operators, & Tenders	12	13	0	0.0%	2	\$17.24
Writers & Authors	11	18	7	60.2%	2	\$27.06

SOC TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Woodworking Machine Setters, Operators, & Tenders, Except Sawing	11	15	4	35.0%	2	\$14.71
Upholsterers	11	14	3	25.0%	2	\$13.24
Reservation & Transportation Ticket Agents & Travel Clerks	10	14	4	40.4%	2	\$20.93
Funeral Attendants	10	10	0	0.0%	2	\$13.67
Lodging Managers	9	13	5	55.2%	2	\$27.99
Medical Equipment Preparers	9	11	2	19.0%	2	\$16.75
Graders & Sorters, Agricultural Products	9	11	1	16.3%	2	\$11.60
Animal Trainers	8	11	4	48.4%	2	\$12.03
Textile Knitting & Weaving Machine Setters, Operators, & Tenders	7	11	3	48.7%	2	\$16.77
Food Cooking Machine Operators & Tenders	7	8	1	8.3%	2	\$13.17
Aircraft Service Attendants	6	9	3	50.0%	2	\$17.40
Tour & Travel Guides	6	8	2	36.0%	2	\$14.10
Veterinarians	34	37	3	8.2%	1	\$45.93
Chiropractors	24	28	4	17.2%	1	\$37.46
Surgeons, All Other	23	29	6	26.8%	1	\$90.19
Judges, Magistrate Judges, & Magistrates	23	22	(1)	(4.9%)	1	\$44.99
Electronics Engineers, Except Computer	21	20	(0)	0.0%	1	\$46.11
Anesthesiologists	20	27	7	35.6%	1	\$82.41
Insurance Underwriters	16	17	0	0.0%	1	\$33.19
Environmental Engineers	15	15	0	0.0%	1	\$57.09
Mechanical Door Repairers	15	15	0	0.0%	1	\$18.42
Carpet Installers	15	11	(4)	(26.1%)	1	\$17.48
Plasterers & Stucco Masons	14	13	(1)	(8.2%)	1	\$21.01
Floral Designers	14	10	(3)	(25.2%)	1	\$13.53
Mining & Geological Engineers, Including Mining Safety Engineers	13	14	1	7.6%	1	\$44.78
Calibration Technologists & Technicians	13	13	0	0.0%	1	\$20.41
Heat Treating Equipment Setters, Operators, & Tenders, Metal & Plastic	13	12	(1)	(5.3%)	1	\$22.18
Therapists, All Other	12	17	5	41.3%	1	\$32.37
Clinical & Counseling Psychologists	12	16	5	40.5%	1	\$34.74
Electric Motor, Power Tool, & Related Repairers	12	15	3	21.4%	1	\$18.85
Acupuncturists	12	13	2	15.9%	1	\$28.86

SOC TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Credit Analysts	12	12	0	0.0%	1	\$32.46
Electrical & Electronics Drafters	12	12	0	0.0%	1	\$28.31
Administrative Law Judges, Adjudicators, & Hearing Officers	12	11	(1)	(8.3%)	1	\$47.37
Advertising Sales Agents	12	11	(1)	(8.7%)	1	\$20.07
Plating Machine Setters, Operators, & Tenders, Metal & Plastic	12	11	(1)	(9.2%)	1	\$19.76
News Analysts, Reporters, & Journalists	12	7	(4)	(38.1%)	1	\$23.85
Data Scientists	11	15	4	42.0%	1	\$46.43
Career/Technical Education Teachers, Middle School	11	13	2	19.0%	1	\$28.71
First-Line Supervisors of Security Workers	11	12	1	9.7%	1	\$24.21
Tool Grinders, Filers, & Sharpeners	11	11	0	0.0%	1	\$12.81
Radiologists	10	14	4	44.8%	1	\$45.40
Fundraising Managers	10	13	3	26.5%	1	\$47.51
Technical Writers	10	13	2	21.5%	1	\$33.46
Healthcare Practitioners & Technical Workers, All Other	10	12	2	25.3%	1	\$21.23
Credit Counselors	10	12	2	21.6%	1	\$17.90
Materials Engineers	10	11	0	0.0%	1	\$56.63
Explosives Workers, Ordnance Handling Experts, & Blasters	10	11	1	12.0%	1	\$29.29
Extraction Workers, All Other	10	11	1	14.2%	1	\$23.92
Pressers, Textile, Garment, & Related Materials	10	7	(3)	(27.6%)	1	\$12.12
Obstetricians & Gynecologists	9	13	4	42.2%	1	\$70.16
Avionics Technicians	9	12	3	28.4%	1	\$43.65
Magnetic Resonance Imaging Technologists	9	12	2	26.6%	1	\$33.80
Web & Digital Interface Designers	9	12	3	33.4%	1	\$33.73
Database Architects	9	10	1	12.8%	1	\$44.06
Cartographers & Photogrammetrists	9	10	1	6.0%	1	\$33.68
Cardiovascular Technologists & Technicians	9	10	1	15.4%	1	\$20.41
Metal Workers & Plastic Workers, All Other	9	10	1	6.4%	1	\$16.31
Drilling & Boring Machine Tool Setters, Operators, & Tenders, Metal & Plastic	9	9	0	0.0%	1	\$17.48
Meat, Poultry, & Fish Cutters & Trimmers	9	9	0	0.0%	1	\$14.92
Word Processors & Typists	9	7	(2)	(18.5%)	1	\$16.62
Print Binding & Finishing Workers	9	6	(2)	(25.2%)	1	\$15.32

SOC TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Disc Jockeys, Except Radio	8	13	5	55.4%	1	\$14.52
Entertainment & Recreation Managers, Except Gambling	8	12	4	43.3%	1	\$30.33
Psychiatrists	8	11	3	38.1%	1	\$91.04
Electrical & Electronics Repairers, Powerhouse, Substation, & Relay	8	11	3	41.9%	1	\$34.92
Health Information Technologists & Medical Registrars	8	11	3	35.3%	1	\$32.41
Real Estate Brokers	8	10	2	26.0%	1	\$40.84
Farm Equipment Mechanics & Service Technicians	8	10	2	23.6%	1	\$20.90
Transportation Workers, All Other	8	10	2	31.3%	1	\$20.86
Designers, All Other	8	10	3	34.9%	1	\$17.16
Financial Risk Specialists	8	9	1	12.3%	1	\$35.64
Financial Examiners	8	9	1	14.6%	1	\$35.16
Signal & Track Switch Repairers	8	9	1	18.9%	1	\$29.41
Legal Support Workers, All Other	8	9	1	6.2%	1	\$26.55
Tax Examiners & Collectors, & Revenue Agents	8	8	0	0.0%	1	\$43.69
Drafters, All Other	8	8	0	0.0%	1	\$26.63
Hydrologic Technicians	8	7	(1)	(12.3%)	1	\$58.82
Marriage & Family Therapists	7	12	5	72.9%	1	\$26.41
Audiologists	7	10	3	49.5%	1	\$39.46
Electrical & Electronics Installers & Repairers, Transportation Equipment	7	9	2	21.0%	1	\$37.62
Radio, Cellular, & Tower Equipment Installers & Repairers	7	9	2	27.5%	1	\$33.68
Continuous Mining Machine Operators	7	9	2	30.0%	1	\$22.87
Furniture Finishers	7	9	2	25.5%	1	\$15.75
Ship Engineers	7	8	1	16.4%	1	\$42.87
Fire Inspectors & Investigators	7	8	0	0.0%	1	\$31.21
First-Line Supervisors of Protective Service Workers, All Other	7	8	1	12.5%	1	\$27.55
Dredge Operators	7	8	1	15.4%	1	\$18.83
Audiovisual Equipment Installers & Repairers	7	8	1	9.2%	1	\$17.35
Legislators	7	8	1	22.6%	1	\$17.24
Ophthalmic Laboratory Technicians	7	8	2	24.8%	1	\$12.62
Private Detectives & Investigators	7	7	0	0.0%	1	\$27.79
Cleaning, Washing, & Metal Pickling Equipment Operators & Tenders	7	7	0	0.0%	1	\$14.01

SOC TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Orderlies	7	7	0	0.0%	1	\$12.67
Pile Driver Operators	7	6	(2)	(24.1%)	1	\$26.46
Locksmiths & Safe Repairers	7	6	(0)	0.0%	1	\$19.85
Extruding & Forming Machine Setters, Operators, & Tenders, Synthetic & Glass Fibers	7	6	(0)	0.0%	1	\$13.66
Tapers	7	5	(2)	(24.8%)	1	\$19.14
Cardiologists	6	9	3	48.5%	1	\$130.53
Aircraft Structure, Surfaces, Rigging, & Systems Assemblers	6	9	3	55.1%	1	\$42.50
Art Directors	6	9	3	43.3%	1	\$30.36
Barbers	6	8	2	32.6%	1	\$12.42
Computer Hardware Engineers	6	7	1	13.3%	1	\$55.73
Artists & Related Workers, All Other	6	7	1	16.6%	1	\$33.80
Transportation Security Screeners	6	7	0	0.0%	1	\$20.68
Engine & Other Machine Assemblers	6	7	1	10.8%	1	\$20.44
Meter Readers, Utilities	6	7	1	13.6%	1	\$20.30
Financial Clerks, All Other	6	7	1	15.5%	1	\$17.69
Automotive Glass Installers & Repairers	6	7	1	18.3%	1	\$16.08
Tree Trimmers & Pruners	6	7	1	16.9%	1	\$14.80
Court Reporters & Simultaneous Captioners	6	6	0	0.0%	1	\$55.81
Funeral Home Managers	6	6	0	0.0%	1	\$26.67
Electro-Mechanical & Mechatronics Technologists & Technicians	6	6	0	0.0%	1	\$26.29
Manufactured Building & Mobile Home Installers	6	6	0	0.0%	1	\$19.17
Conveyor Operators & Tenders	6	6	0	0.0%	1	\$15.69
New Accounts Clerks	6	5	(0)	0.0%	1	\$16.68
Psychologists, All Other	5	7	2	33.2%	1	\$51.47
Pesticide Handlers, Sprayers, & Applicators, Vegetation	5	7	2	41.1%	1	\$19.46
Sawing Machine Setters, Operators, & Tenders, Wood	5	7	2	40.1%	1	\$14.10
Concierges	5	7	2	35.7%	1	\$12.32
Urban & Regional Planners	5	6	1	17.2%	1	\$33.24
Motorboat Mechanics & Service Technicians	5	6	1	12.1%	1	\$20.36
Passenger Attendants	5	6	1	28.3%	1	\$12.17
Shampooers	5	6	2	32.6%	1	\$10.24

SOC TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Labor Relations Specialists	5	5	0	0.0%	1	\$23.10
Brokerage Clerks	5	5	0	0.0%	1	\$21.23
Subway & Streetcar Operators	5	5	0	0.0%	1	\$21.03
Etchers & Engravers	5	5	0	0.0%	1	\$15.02
Food & Tobacco Roasting, Baking, & Drying Machine Operators & Tenders	5	5	0	0.0%	1	\$13.83
Helpers--Painters, Paperhangers, Plasterers, & Stucco Masons	5	5	0	0.0%	1	\$13.64
Textile, Apparel, & Furnishings Workers, All Other	5	5	0	0.0%	1	\$12.76
Dietetic Technicians	5	5	0	0.0%	1	\$12.07
Food Science Technicians	5	4	(1)	(24.2%)	1	\$17.84
Emergency Medicine Physicians	4	7	4	92.0%	1	\$103.26
Actors	4	7	3	67.6%	1	\$21.08
Jewelers & Precious Stone & Metal Workers	4	6	1	31.8%	1	\$17.35
Shoe & Leather Workers & Repairers	4	6	2	54.7%	1	\$15.05
Baggage Porters & Bellhops	4	6	2	49.1%	1	\$12.06
Airfield Operations Specialists	4	5	1	34.6%	1	\$20.56
Credit Authorizers, Checkers, & Clerks	4	5	1	12.1%	1	\$20.05
Building Cleaning Workers, All Other	4	5	1	15.9%	1	\$16.66
Coin, Vending, & Amusement Machine Servicers & Repairers	4	5	1	15.0%	1	\$16.03
Gambling & Sports Book Writers & Runners	4	5	1	18.2%	1	\$15.20
Rolling Machine Setters, Operators, & Tenders, Metal & Plastic	4	4	0	0.0%	1	\$21.21
Loading & Moving Machine Operators, Underground Mining	4	4	0	0.0%	1	\$20.81
Morticians, Undertakers, & Funeral Arrangers	4	4	0	0.0%	1	\$17.45
Paper Goods Machine Setters, Operators, & Tenders	4	4	0	0.0%	1	\$14.80
Power Distributors & Dispatchers	3	5	1	42.0%	1	\$34.35
Agents & Business Managers of Artists, Performers, & Athletes	3	5	2	63.2%	1	\$26.18
Film & Video Editors	3	5	2	47.6%	1	\$23.01
Gambling Dealers	3	5	2	45.1%	1	\$21.60
Entertainers & Performers, Sports & Related Workers, All Other	3	5	2	62.6%	1	\$19.37
Museum Technicians & Conservators	3	5	2	60.0%	1	\$19.23
Bicycle Repairers	3	5	2	63.9%	1	\$13.08
Dental Laboratory Technicians	3	4	1	15.6%	1	\$20.85

SOC TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Occupational Therapy Aides	3	4	1	36.5%	1	\$15.02
Forest & Conservation Workers	3	4	2	62.1%	1	\$14.11
Woodworkers, All Other	3	4	1	34.9%	1	\$13.53
Psychiatric Aides	3	4	1	36.2%	1	\$12.97
Textile Winding, Twisting, & Drawing Out Machine Setters, Operators, & Tenders	3	4	1	25.2%	1	\$12.76
Locker Room, Coatroom, & Dressing Room Attendants	3	4	1	39.1%	1	\$12.65
Agricultural Inspectors	3	3	0	0.0%	1	\$23.35
Umpires, Referees, & Other Sports Officials	3	3	0	0.0%	1	\$19.66
Costume Attendants	3	3	0	0.0%	1	\$14.83
Gambling Service Workers, All Other	3	3	0	0.0%	1	\$11.65
Athletes & Sports Competitors	2	6	4	155.6%	1	\$31.99
Fishing & Hunting Workers	2	5	2	85.8%	1	\$17.94
Animal Breeders	2	3	1	57.5%	1	\$13.91
Dermatologists	6	8	2	40.2%	0	\$111.48
Orthopedic Surgeons, Except Pediatric	6	8	3	44.7%	0	\$90.08
Radiation Therapists	6	7	1	22.5%	0	\$35.18
Epidemiologists	5	6	1	20.9%	0	\$35.51
Compensation & Benefits Managers	5	5	0	0.0%	0	\$55.07
Emergency Management Directors	5	5	0	0.0%	0	\$44.13
Electronic Equipment Installers & Repairers, Motor Vehicles	5	4	(0)	0.0%	0	\$16.43
Stonemasons	5	4	(1)	(17.8%)	0	\$16.26
Floor Sanders & Finishers	5	4	(1)	(14.6%)	0	\$15.23
Orthodontists	4	5	1	19.5%	0	\$97.73
Podiatrists	4	5	1	20.3%	0	\$70.66
Healthcare Diagnosing or Treating Practitioners, All Other	4	5	1	24.0%	0	\$33.29
Surgical Assistants	4	5	1	34.3%	0	\$28.26
Conservation Scientists	4	5	1	13.2%	0	\$22.07
Animal Control Workers	4	5	1	14.4%	0	\$16.19
Biochemists & Biophysicists	4	4	0	0.0%	0	\$36.05
Landscape Architects	4	4	0	0.0%	0	\$28.87
Transit & Railroad Police	4	4	0	0.0%	0	\$27.63
Musical Instrument Repairers & Tuners	4	4	0	0.0%	0	\$19.99

SOC TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Fiberglass Laminators & Fabricators	4	4	0	0.0%	0	\$19.19
Broadcast Technicians	4	4	0	0.0%	0	\$17.70
Motorcycle Mechanics	4	4	0	0.0%	0	\$16.75
Traffic Technicians	4	4	0	0.0%	0	\$16.63
Fish & Game Wardens	4	3	(0)	0.0%	0	\$30.01
Elevator & Escalator Installers & Repairers	4	3	(1)	(20.0%)	0	\$25.61
Helpers--Brickmasons, Blockmasons, Stonemasons, & Tile & Marble Setters	4	3	(1)	(19.3%)	0	\$20.55
Physicians, Pathologists	3	4	1	34.6%	0	\$96.96
Ophthalmologists, Except Pediatric	3	4	2	66.6%	0	\$64.14
Computer & Information Research Scientists	3	4	1	28.2%	0	\$63.29
Nurse Midwives	3	4	1	40.8%	0	\$43.77
Biological Scientists, All Other	3	4	1	27.8%	0	\$39.30
Orthotists & Prosthetists	3	4	1	28.3%	0	\$37.19
Statisticians	3	4	1	37.8%	0	\$36.50
Power Plant Operators	3	4	1	29.9%	0	\$31.02
Sound Engineering Technicians	3	4	1	47.3%	0	\$28.28
Camera Operators, Television, Video, & Film	3	4	1	33.4%	0	\$24.12
Recreational Therapists	3	4	1	20.7%	0	\$23.55
Media & Communication Workers, All Other	3	4	1	56.6%	0	\$21.28
Set & Exhibit Designers	3	4	2	51.7%	0	\$20.97
Precision Instrument & Equipment Repairers, All Other	3	4	0	0.0%	0	\$20.56
Hearing Aid Specialists	3	4	1	52.3%	0	\$19.12
Adhesive Bonding Machine Operators & Tenders	3	4	1	34.8%	0	\$13.48
Air Traffic Controllers	3	3	0	0.0%	0	\$77.33
Social Scientists & Related Workers, All Other	3	3	0	0.0%	0	\$45.33
Pediatric Surgeons	3	3	0	0.0%	0	\$43.80
Nuclear Medicine Technologists	3	3	0	0.0%	0	\$38.48
Physical Scientists, All Other	3	3	0	0.0%	0	\$36.21
Communications Equipment Operators, All Other	3	3	0	0.0%	0	\$26.79
Microbiologists	3	3	0	0.0%	0	\$26.48
Recreational Vehicle Service Technicians	3	3	0	0.0%	0	\$20.56

SOC TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Agricultural Technicians	3	3	0	0.0%	0	\$18.20
Milling & Planing Machine Setters, Operators, & Tenders, Metal & Plastic	3	3	0	0.0%	0	\$17.97
Desktop Publishers	3	3	0	0.0%	0	\$17.92
Motorboat Operators	3	3	0	0.0%	0	\$16.23
Semiconductor Processing Technicians	3	3	0	0.0%	0	\$15.79
Broadcast Announcers & Radio Disc Jockeys	3	3	0	0.0%	0	\$15.77
Grinding & Polishing Workers, Hand	3	3	0	0.0%	0	\$14.08
Painting, Coating, & Decorating Workers	3	3	0	0.0%	0	\$13.11
Ambulance Drivers & Attendants, Except Emergency Medical Technicians	3	3	0	0.0%	0	\$12.70
Textile Cutting Machine Setters, Operators, & Tenders	3	3	0	0.0%	0	\$10.93
Prepress Technicians & Workers	3	2	(1)	(26.1%)	0	\$18.21
Special Effects Artists & Animators	2	4	1	50.6%	0	\$25.21
Neurologists	2	3	1	48.0%	0	\$90.00
Dentists, All Other Specialists	2	3	0	0.0%	0	\$70.06
Marine Engineers & Naval Architects	2	3	0	0.0%	0	\$55.86
Actuaries	2	3	1	21.9%	0	\$44.43
Aerospace Engineering & Operations Technologists & Technicians	2	3	1	24.2%	0	\$35.32
Atmospheric & Space Scientists	2	3	0	0.0%	0	\$33.90
Media & Communication Equipment Workers, All Other	2	3	1	45.0%	0	\$28.03
Commercial & Industrial Designers	2	3	1	46.6%	0	\$27.70
Hoist & Winch Operators	2	3	0	0.0%	0	\$27.27
Lighting Technicians	2	3	1	61.8%	0	\$22.59
Exercise Physiologists	2	3	0	0.0%	0	\$21.21
Grounds Maintenance Workers, All Other	2	3	1	22.2%	0	\$19.01
Travel Agents	2	3	1	77.5%	0	\$18.70
Personal Service Managers, All Other	2	3	0	0.0%	0	\$18.06
Textile Bleaching & Dyeing Machine Operators & Tenders	2	3	1	94.3%	0	\$16.21
Correspondence Clerks	2	3	0	0.0%	0	\$15.90
Physicists	2	2	0	0.0%	0	\$73.00
Nuclear Engineers	2	2	0	0.0%	0	\$47.87
Economists	2	2	0	0.0%	0	\$46.56

SOC TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Advertising & Promotions Managers	2	2	0	0.0%	0	\$40.32
Zoologists & Wildlife Biologists	2	2	0	0.0%	0	\$38.22
Postmasters & Mail Superintendents	2	2	0	0.0%	0	\$36.68
Life Scientists, All Other	2	2	0	0.0%	0	\$35.39
Food Scientists & Technologists	2	2	0	0.0%	0	\$34.96
Bioengineers & Biomedical Engineers	2	2	0	0.0%	0	\$34.56
Soil & Plant Scientists	2	2	0	0.0%	0	\$32.27
Gas Compressor & Gas Pumping Station Operators	2	2	0	0.0%	0	\$23.48
Metal-Refining Furnace Operators & Tenders	2	2	0	0.0%	0	\$21.72
Forging Machine Setters, Operators, & Tenders, Metal & Plastic	2	2	0	0.0%	0	\$21.64
Bridge & Lock Tenders	2	2	0	0.0%	0	\$21.27
Medical Appliance Technicians	2	2	0	0.0%	0	\$21.24
Furnace, Kiln, Oven, Drier, & Kettle Operators & Tenders	2	2	0	0.0%	0	\$21.17
Logging Equipment Operators	2	2	0	0.0%	0	\$18.05
Paperhangers	2	2	0	0.0%	0	\$17.63
Forest & Conservation Technicians	2	2	0	0.0%	0	\$15.76
Coil Winders, Tapers, & Finishers	2	2	0	0.0%	0	\$14.93
Fabric & Apparel Patternmakers	2	2	0	0.0%	0	\$13.87
Parking Enforcement Workers	2	2	0	0.0%	0	\$13.21
Photographic Process Workers & Processing Machine Operators	2	2	0	0.0%	0	\$12.59
Gambling Cage Workers	2	2	0	0.0%	0	\$12.07
Helpers--Roofers	2	1	(0)	0.0%	0	\$20.99
Medical Dosimetrists	1	2	0	0.0%	0	\$54.60
Forest Fire Inspectors & Prevention Specialists	1	2	0	0.0%	0	\$27.16
Archivists	1	2	0	0.0%	0	\$25.71
Curators	1	2	1	74.1%	0	\$24.23
Underground Mining Machine Operators, All Other	1	2	0	0.0%	0	\$19.85
Rock Splitters, Quarry	1	2	1	67.8%	0	\$13.58
Motion Picture Projectionists	1	2	0	0.0%	0	\$11.73
Hydrologists	1	1	0	0.0%	0	\$56.32
Materials Scientists	1	1	0	0.0%	0	\$52.24
Political Scientists	1	1	0	0.0%	0	\$38.75

SOC TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Gambling Managers	1	1	0	0.0%	0	\$35.15
Historians	1	1	0	0.0%	0	\$32.46
Fashion Designers	1	1	0	0.0%	0	\$30.88
Flight Attendants	1	1	0	0.0%	0	\$28.49
Survey Researchers	1	1	0	0.0%	0	\$26.86
Commercial Divers	1	1	0	0.0%	0	\$26.73
Arbitrators, Mediators, & Conciliators	1	1	0	0.0%	0	\$26.34
Cooling & Freezing Equipment Operators & Tenders	1	1	0	0.0%	0	\$25.73
First-Line Supervisors of Gambling Services Workers	1	1	0	0.0%	0	\$25.16
Insurance Appraisers, Auto Damage	1	1	0	0.0%	0	\$24.78
Statistical Assistants	1	1	0	0.0%	0	\$24.72
Aircraft Cargo Handling Supervisors	1	1	0	0.0%	0	\$22.85
Patternmakers, Metal & Plastic	1	1	0	0.0%	0	\$22.76
Foresters	1	1	0	0.0%	0	\$22.72
Layout Workers, Metal & Plastic	1	1	0	0.0%	0	\$22.27
Model Makers, Metal & Plastic	1	1	0	0.0%	0	\$21.62
Social Science Research Assistants	1	1	0	0.0%	0	\$20.73
Gambling Surveillance Officers & Gambling Investigators	1	1	0	0.0%	0	\$20.12
Embalmers	1	1	0	0.0%	0	\$19.34
Cooks, Private Household	1	1	0	0.0%	0	\$19.21
Dancers	1	1	0	0.0%	0	\$18.45
Pourers & Casters, Metal	1	1	0	0.0%	0	\$18.09
Gambling Change Persons & Booth Cashiers	1	1	0	0.0%	0	\$18.02
Models	1	1	0	0.0%	0	\$18.00
Camera & Photographic Equipment Repairers	1	1	0	0.0%	0	\$17.49
Proofreaders & Copy Markers	1	1	0	0.0%	0	\$16.47
Foundry Mold & Coremakers	1	1	0	0.0%	0	\$14.73
Taxi Drivers	1	1	0	0.0%	0	\$14.35
Crematory Operators	1	1	0	0.0%	0	\$13.44
Cutters & Trimmers, Hand	1	1	0	0.0%	0	\$12.37
Farm & Home Management Educators	1	1	0	0.0%	0	\$12.12
Sewers, Hand	1	1	0	0.0%	0	\$10.64

SOC TITLE	2022 JOBS	2032 JOBS	CHANGE	% CHANGE	ANNUAL JOB OPENINGS	MEDIAN HOURLY WAGE
Oral & Maxillofacial Surgeons	0	1	0	0.0%	0	\$73.56
Genetic Counselors	0	1	0	0.0%	0	\$33.94
Mathematical Science Occupations, All Other	0	1	0	0.0%	0	\$15.83
Entertainment Attendants & Related Workers, All Other	0	1	1	173.6%	0	\$10.65
Makeup Artists, Theatrical & Performance	0	0	0	0.0%	0	\$60.50
Astronomers	0	0	0	0.0%	0	\$56.54
Industrial-Organizational Psychologists	0	0	0	0.0%	0	\$46.50
Nuclear Power Reactor Operators	0	0	0	0.0%	0	\$42.29
Sociologists	0	0	0	0.0%	0	\$40.53
Agricultural Engineers	0	0	0	0.0%	0	\$38.65
Nuclear Technicians	0	0	0	0.0%	0	\$35.95
Model Makers, Wood	0	0	0	0.0%	0	\$31.38
Mathematicians	0	0	0	0.0%	0	\$29.27
Patternmakers, Wood	0	0	0	0.0%	0	\$29.04
Roof Bolters, Mining	0	0	0	0.0%	0	\$28.89
Geographers	0	0	0	0.0%	0	\$28.46
Anthropologists & Archeologists	0	0	0	0.0%	0	\$26.36
Refractory Materials Repairers, Except Brickmasons	0	0	0	0.0%	0	\$23.47
Rail Transportation Workers, All Other	0	0	0	0.0%	0	\$22.69
Judicial Law Clerks	0	0	0	0.0%	0	\$21.38
Farm Labor Contractors	0	0	0	0.0%	0	\$20.89
Animal Scientists	0	0	0	0.0%	0	\$20.88
Fallers	0	0	0	0.0%	0	\$20.09
Terrazzo Workers & Finishers	0	0	0	0.0%	0	\$18.16
Watch & Clock Repairers	0	0	0	0.0%	0	\$16.83
Tire Builders	0	0	0	0.0%	0	\$16.65
Timing Device Assemblers & Adjusters	0	0	0	0.0%	0	\$16.34
Logging Workers, All Other	0	0	0	0.0%	0	\$12.69
Log Graders & Scalers	0	0	0	0.0%	0	\$12.07
Telephone Operators	0	0	0	0.0%	0	\$11.79
Prosthodontists	0	0	0	0.0%	0	\$0.00
Bailiffs	0	0	0	0.0%	0	\$0.00

Source: Employees & Self-Employed 2023.1.

APPENDIX 7: Unemployment

Data on unemployment give researchers an idea of where skills mismatches may exist in the county. 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 group²⁸ in Brazoria County. Data reflect the monthly average for the 12 months preceding December 2022 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 county, state, and U.S. are provided.

Table A7.1: Unemployed Workers by Industry Sector in Brazoria County with State and National Comparisons

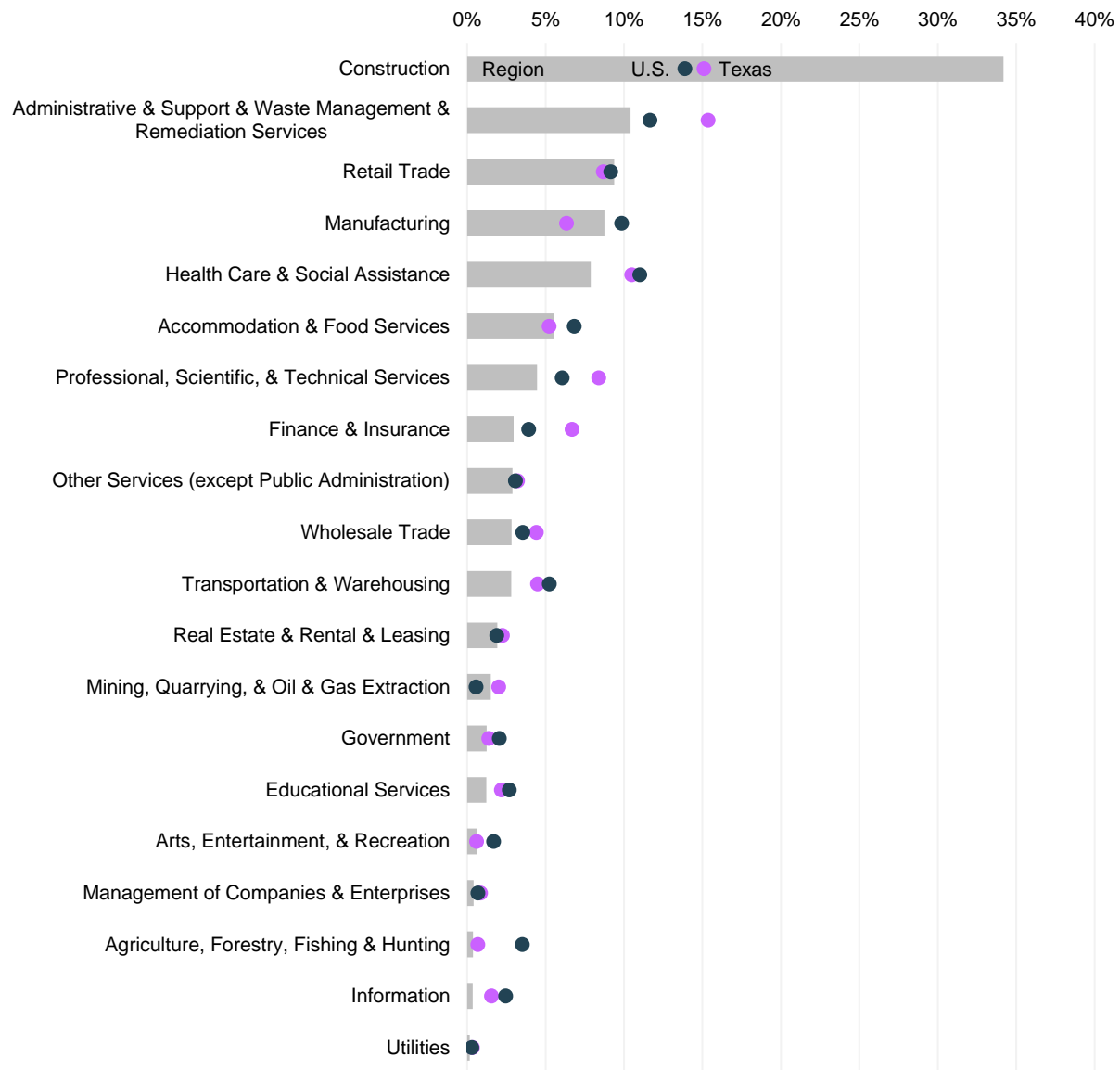
NAICS CODE	NAICS TITLE	COUNTY UNEMPLOYED	COUNTY % UNEMPLOYED	STATE % UNEMPLOYED	U.S. % UNEMPLOYED
23	Construction	3,125	34%	15%	14%
56	Administrative & Support & Waste Management & Remediation Services	952	10%	15%	12%
44	Retail Trade	857	9%	9%	9%
31	Manufacturing	800	9%	6%	10%
62	Health Care & Social Assistance	720	8%	10%	11%
72	Accommodation & Food Services	508	6%	5%	7%
54	Professional, Scientific, & Technical Services	408	4%	8%	6%
52	Finance & Insurance	271	3%	7%	4%
81	Other Services (except Public Administration)	264	3%	3%	3%
42	Wholesale Trade	259	3%	4%	4%
48	Transportation & Warehousing	256	3%	4%	5%
53	Real Estate & Rental & Leasing	176	2%	2%	2%
21	Mining, Quarrying, & Oil & Gas Extraction	138	2%	2%	1%
90	Government	113	1%	1%	2%
61	Educational Services	112	1%	2%	3%

²⁸ 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.

NAICS CODE	NAICS TITLE	COUNTY UNEMPLOYED	COUNTY % UNEMPLOYED	STATE % UNEMPLOYED	U.S. % UNEMPLOYED
71	Arts, Entertainment, & Recreation	58	1%	1%	2%
55	Management of Companies & Enterprises	38	0%	1%	1%
11	Agriculture, Forestry, Fishing & Hunting	34	0%	1%	4%
51	Information	33	0%	2%	2%
22	Utilities	15	0%	0%	0%

Source: Lightcast Total Unemployment (monthly average for the 12 months preceding December 2022).

Figure A7.1: Unemployed Workers by Industry Sector in Brazoria County with State and National Comparisons



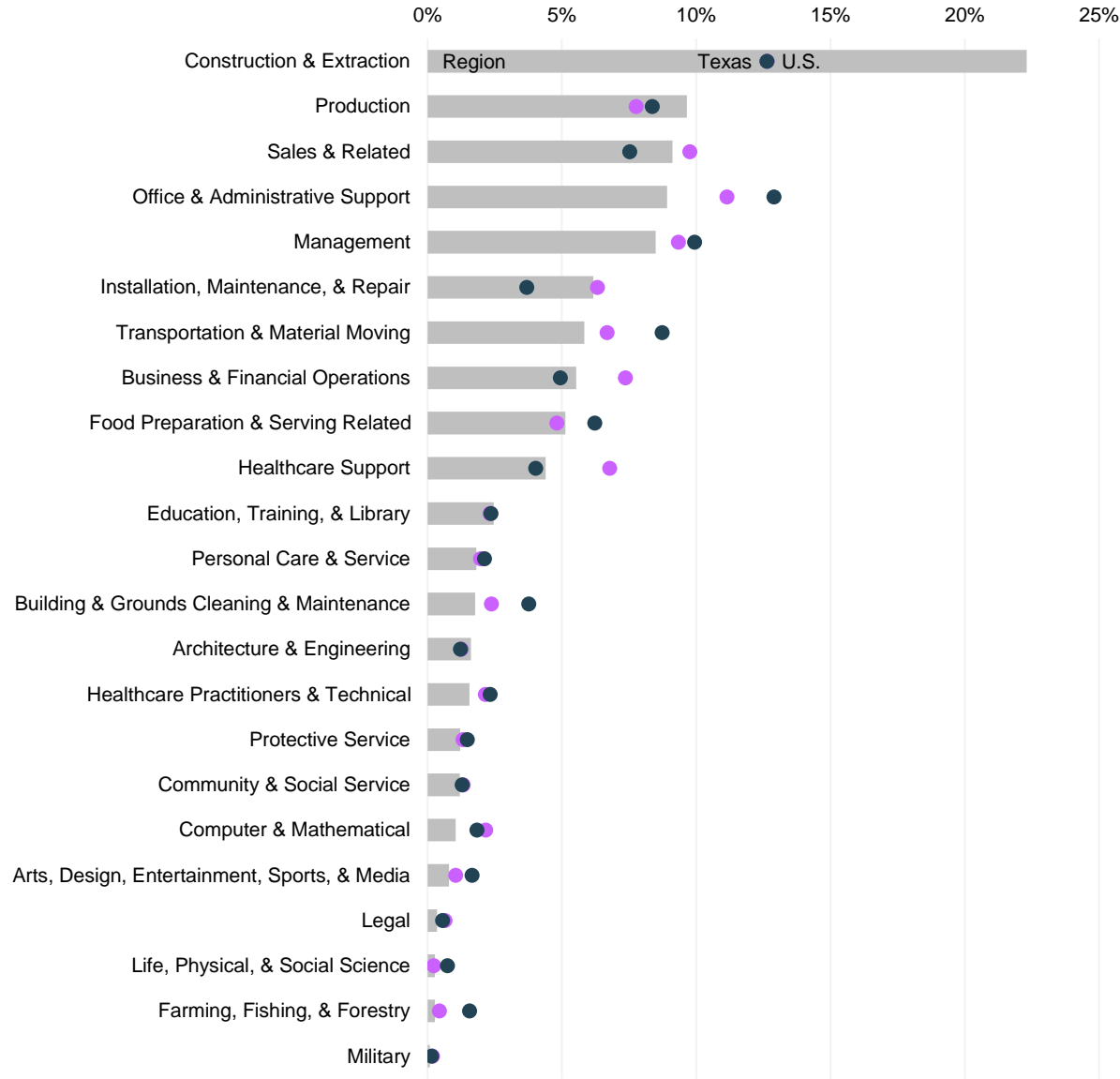
Source: Lightcast Total Unemployment (monthly average for the 12 months preceding December 2022).

Table A7.2: Unemployed Workers by Occupational Group in Brazoria County with State and National Comparisons

SOC CODE	SOC TITLE	COUNTY UNEMPLOYED	COUNTY % UNEMPLOYED	STATE % UNEMPLOYED	U.S. % UNEMPLOYED
47-0000	Construction & Extraction	2,038	22%	13%	13%
51-0000	Production	882	10%	8%	8%
41-0000	Sales & Related	833	9%	10%	8%
43-0000	Office & Administrative Support	815	9%	11%	13%
11-0000	Management	776	8%	9%	10%
49-0000	Installation, Maintenance, & Repair	564	6%	6%	4%
53-0000	Transportation & Material Moving	533	6%	7%	9%
13-0000	Business & Financial Operations	505	6%	7%	5%
35-0000	Food Preparation & Serving Related	469	5%	5%	6%
31-0000	Healthcare Support	401	4%	7%	4%
25-0000	Education, Training, & Library	225	2%	2%	2%
39-0000	Personal Care & Service	165	2%	2%	2%
37-0000	Building & Grounds Cleaning & Maintenance	162	2%	2%	4%
17-0000	Architecture & Engineering	147	2%	1%	1%
29-0000	Healthcare Practitioners & Technical	142	2%	2%	2%
33-0000	Protective Service	111	1%	1%	1%
21-0000	Community & Social Service	110	1%	1%	1%
15-0000	Computer & Mathematical	95	1%	2%	2%
27-0000	Arts, Design, Entertainment, Sports, & Media	73	1%	1%	2%
23-0000	Legal	32	0%	1%	1%
19-0000	Life, Physical, & Social Science	25	0%	0%	1%
45-0000	Farming, Fishing, & Forestry	25	0%	0%	2%
55-0000	Military	7	0%	0%	0%

Source: Lightcast Total Unemployment (monthly average for the 12 months preceding December 2022).

Figure A7.2: Unemployed Workers by Occupational Group in Brazoria County with State and National Comparisons



Source: Lightcast Total Unemployment (monthly average for the 12 months preceding December 2022).

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 Brazoria County

ADULTS IN HOUSEHOLD	CHILDREN IN HOUSEHOLD	LIVING WAGE	POVERTY WAGE	MINIMUM WAGE
One adult	No children	\$15.81	\$6.19	\$7.25
	One child	\$32.02	\$8.38	-
	Two children	\$39.61	\$10.56	-
	Three children	\$52.13	\$12.74	-
Two adults, one working	No children	\$25.65	\$8.38	-
	One child	\$30.78	\$10.56	-
	Two children	\$35.88	\$12.74	-
	Three children	\$39.60	\$14.92	-
Two adults	No children	\$12.83	\$4.19	-
	One child	\$17.63	\$5.28	-
	Two children	\$22.42	\$6.37	-
	Three children	\$26.52	\$7.46	-

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	\$16.41	\$6.19	\$7.25
	One child	\$31.63	\$8.38	-
	Two children	\$38.97	\$10.56	-
	Three children	\$51.02	\$12.74	-
Two adults, one working	No children	\$25.12	\$8.38	-
	One child	\$30.64	\$10.56	-
	Two children	\$35.75	\$12.74	-
	Three children	\$39.24	\$14.92	-
Two adults	No children	\$12.56	\$4.19	-
	One child	\$17.44	\$5.28	-
	Two children	\$22.10	\$6.37	-
	Three children	\$25.96	\$7.46	-

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.