

STATE OF NEW HAMPSHIRE WORKFORCE ASSESSMENT

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SUBMITTED TO:



New Hampshire Department of
BUSINESS AND
ECONOMIC AFFAIRS

PREPARED BY:



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EXECUTIVE SUMMARY

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New Hampshire's Department of Business and Economic Affairs (BEA) retained Camoin Associates to conduct a Workforce Assessment of the State's identified target sectors. These sectors include Technology, Construction, Hospitality, Healthcare and Manufacturing. While there are many additional industries that support the State's economy, the intent of this research was to identify and study the high-wage jobs in occupations that have shown strong growth within these industry sectors. With tightening resources and increased demand on workforce and economic development entities, this focus will allow the BEA to make strategic decisions about how and where to pursue proactive strategies.

I. Identifying the Workforce Gaps

New Hampshire's 80 Top Occupations are projected to have nearly 197,000 job openings from 2022 to 2032, of which only 6,100 will be filled by labor force growth, leaving a gap of nearly 191,000. The largest gaps will occur in the following five occupations:

1. *General and Operations Managers* are expected to see the largest shortage, with a gap of 11,905 jobs
2. *Software Developers and Software Quality Assurance Analysts and Testers* (-9,384)
3. *Heavy and Tractor-Trailer Truck Drivers* (-9,235)
4. *Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products* (-8,070)
5. *Registered Nurses* (-7,946)

A total of 34 occupations were identified with significant gaps. Management occupations accounted for the largest portion (14%) of the projected labor force gap. Other large occupational group gaps include Business and Financial Operations (12% of the gap) and Sales and Related Occupations (11%).

II. Strategies to Close Workforce Gaps

To overcome systemic challenges and demographic shifts in New Hampshire's economy, the State will need to take a collaborative, multi-disciplinary approach to fill unmet demand in the top occupations. While some of this work may be enacted at various scales throughout the state, a comprehensive and coordinated effort among partners will be necessary to enact meaningful gains.

The data provided in this report will be used to set priorities among partners and inform how resources are allocated to address the most imminent challenges. The labor market analysis identifies those occupations that overlap among the state's target sectors. Supporting occupations that play a large role in driving the success of multiple sectors will have the largest impact on New Hampshire's economic success.

The following outlines the two distinct pathways to address workforce gaps. Additional detail on these strategies – as well as corresponding data or other rationale – can be found in Chapter 5.

Grow From Within New Hampshire

RATIONALE | These are strategies that are targeted at the current residents and workforce of New Hampshire, focusing on adapting the skills and guiding career pathways with institutional partners, such as workforce development leaders and educational institutions.

STRATEGIES |

- Diversify the workforce
- Transfer skills – including veterans
- Increase training pipeline
- Increase state-wide graduate retention
- Promote and train existing employees
- Showcase workforce opportunities for the trades
- Educate employers about long-term labor force trends
- Collaborate and prioritize other sectors that impact the economy

Attracting from Outside New Hampshire

RATIONALE | Shifting demographics and population decline mean that attraction into the state will be necessary to fill some of the jobs most critical to the State's economy. These

strategies will be more applicable to workers with high levels of economic mobility, meaning they have the means to move from their current location for another position.

STRATEGIES |

- **Attract and retain commuters** – Over 90% of workers in in-demand occupations commute out of state for work. Factors like taxes, cost of living, and wage rates all play a factor in determining where individuals decide to work – which draws attention to the need for public sector economic development officials and private sectors businesses to team up on addressing or making the case for these individual factors.
- **Attract workers from outside New England** - The analysis also concluded where in-demand occupations are concentrated across the country and which Metropolitan Statistical Areas (MSAs) can be targeted for a marketing attraction campaign. These MSAs have a high concentration of in-demand occupations, with a sizable workforce, and lower median hourly earnings. Workers may be more likely to consider a move from relatively nearby MSAs (e.g., CNC Tool Operators in Lebanon, NH-VT) and/or ones that have large differences in earnings (e.g. Management Analysts in Tallahassee, FL and Sacramento-Roseville-Folsom, CA).

III. Acting on Workforce Data

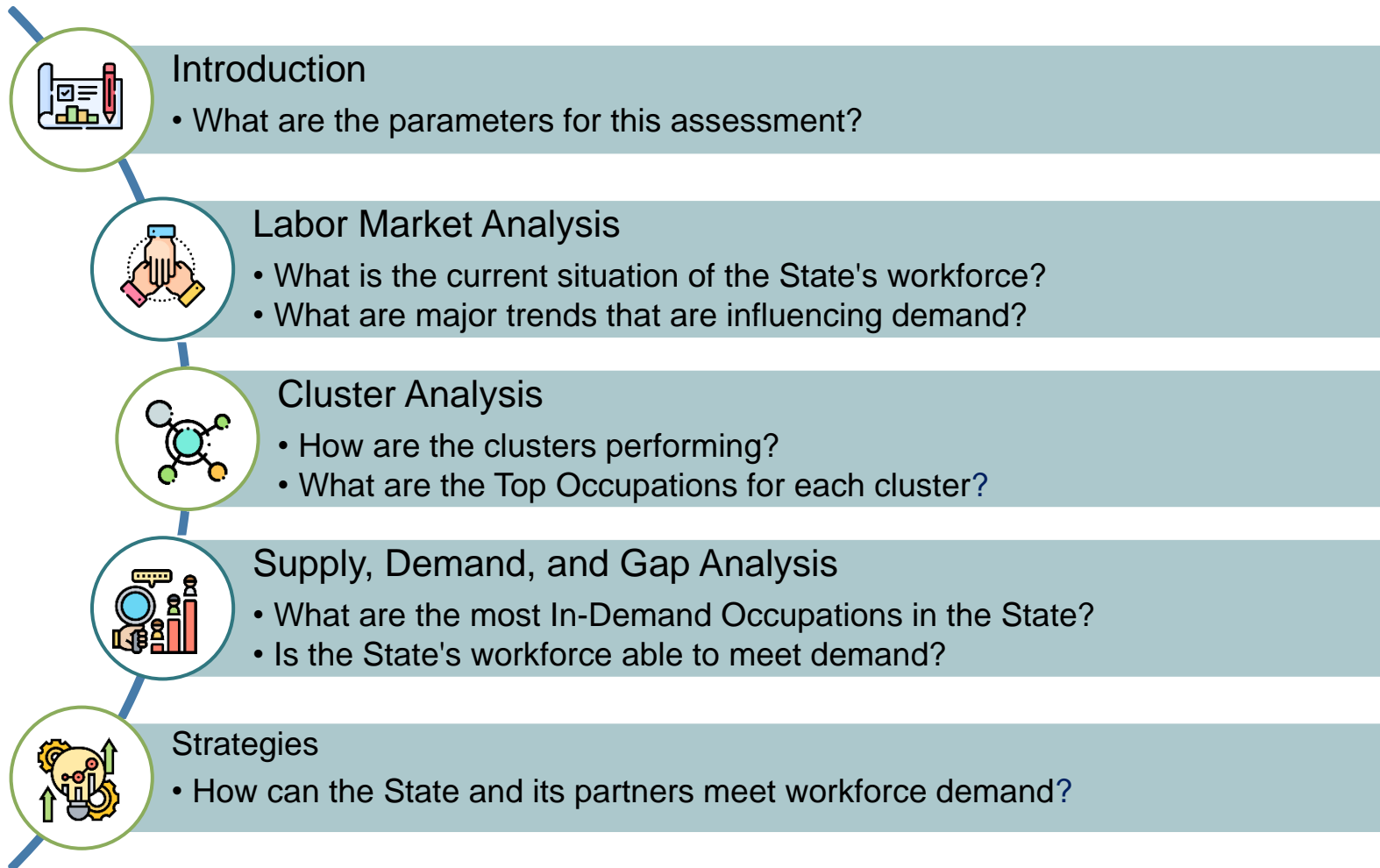
In the near-term, the BEA will continue to work with Camoin Associates to determine how a creative marketing agency will use this data within a workforce/talent attraction campaign. A roll out of this report to salient partners will also begin the process of establishing roles in the strategies to grow occupations from within the state.



1. INTRODUCTION

Methodology

For this Workforce Assessment, Camoin Associates used New Hampshire's identified targeted industries to understand the historical, current, and projected talent supply for the targeted industries. The analysis focuses on gaps and opportunities in New Hampshire's workforce related to skills, education, and training needs to support growth. The following graphic outlines the analytical process and research questions for this Workforce Assessment.



Region of Analysis

The State of New Hampshire is the primary region of analysis for this report. Where appropriate, comparisons are made to New England (which includes Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont) and the US to provide context.

New Hampshire is broken into four Collaborative Economic Development Regions (CEDRs) which allow for regional economic development coordination:

- **Central-Southern CEDR:** Hillsborough and Merrimack counties
- **Seacoast CEDR:** Rockingham and Strafford counties
- **Northern CEDR:** Belknap, Carroll, Coos, and Grafton counties
- **South-Western CEDR:** Cheshire and Sullivan counties

Analysis and recommendations are provided by CEDR where relevant in order to provide for regional approaches to workforce strategy.

Sources

Unless otherwise noted, all data is sourced from Emsi. Other sources include the US Census Bureau and the Bureau of Labor Statistics. See Appendix VIV: Data Sources and Terminology for more information about the data sources and indicators used in this report.

The icons used on the cover and throughout the report were designed using resources from Flaticon.com

Time Period

Unless otherwise noted, all data presented are for 2021. Every effort was made to use the most up to date and reliable data. To that end, an update of the labor market analysis was completed just prior to the release of this report to reflect recently released 2022 data. For that reason, the data in Chapter 2 may not match the data presented in subsequent chapters and appendices.

Different time periods are used for historical and projected analysis throughout this report to capture long-term trends. For example, most industry and workforce data projections are through 2026, since projections become less meaningful over long time horizons; however, for the gap analysis, 10-year projections are used to reflect the time required to implement strategies. For historical analysis, the years between 2019 and 2021 are of particular note due to the impacts of the COVID-19 pandemic, the effects of which are still being parsed out as the pandemic continues having global resurgences. Projections are heavily influenced by pandemic trends over the past few years since they are modeled after historical performance.





2. LABOR MARKET ANALYSIS



Labor Market Analysis

Purpose: The Labor Market Analysis uncovers how demographic and socioeconomic trends are impacting the state's workforce. This analysis also determines the major trends across the state that are influencing workforce demand. This helps set the baseline understanding for what occupations are in greatest demand by region across the state.

Key Takeaways

The following bullets summarize the findings of the state-wide labor market analysis. These takeaways help set the foundation for the remainder of the analysis.

- New Hampshire has fast population growth relative to New England, but slightly slower than the nation.
- Racial diversity is significantly lower than in New England and the nation.
- The State follows New England and national trends in aging, but generally at a greater magnitude. It is currently the second oldest state in the country. Overall, the trend points to an intensification of overlapping workforce, healthcare, and housing crises as Baby Boomers begin to retire and the younger cohorts lag in growth. At the same time, the population between the ages of 25 and 44 – prime working years – is growing more rapidly than the broader New England region and the nation.
- The State's population is relatively affluent – both in terms of median earnings and household income – and educated.
- The State has historically low unemployment and declining labor force participation; however, it has a relatively high participation rate compared to New England and the nation.
- New Hampshire is projected to have relatively stagnant job growth, but generally aligns with job growth trends in New England and the nation.
- The occupational mix of the State of New Hampshire is relatively similar to that of New England and the United States.
- New Hampshire is a net exporter of talent, with a large number of workers – particularly high-wage earners – commuting to the Boston metro.
- Population, wealth, and economic activity concentrated in the South-Central and Seacoast CEDRs, in the Greater Boston area, while the Northern and South-Western CEDRs are relatively rural, older, and stagnant.

Overview

The following provides a brief overview of the current labor market relative to New England and the US, with regional data provided for comparison purposes. The following pages provide a more in-depth analysis of a few key topics relevant to this report.

Population

1,404,335 (2022)

Accounts for a little over 9% of New England's population

- Central-Southern CEDR: 42%
- Seacoast CEDR: 32%
- Northern CEDR: 17%
- South-Western CEDR: 9%

Population Growth

6.0% (2012 – 2022)

Faster than New England (4.2%), but slightly slower than the nation (6.5%)

- Central-Southern CEDR: 6.0%
- Seacoast CEDR: 7.4%
- Northern CEDR: 5.9%
- South-Western CEDR: 1.5%

Racial Diversity

11% racially diverse residents (2022)

Significantly lower than New England (27%) and the US (41%)

- Central-Southern CEDR: 15%
- Seacoast CEDR: 9%
- Northern CEDR: 7%
- South-Western CEDR: 7%

Median Age ¹

43.0 (2021)

Higher than the region (40.9) and significantly higher than the nation (38.4)

- Central-Southern CEDR: 41.5
- Seacoast CEDR: 42.4
- Northern CEDR: 47.3
- South-Western CEDR: 44.3

Median Household Income ¹

\$83,449 (2021)

Slightly higher than New England (\$82,734) and significantly higher than the nation (\$69,021)

- Central-Southern CEDR: \$85,751
- Seacoast CEDR: \$94,402
- Northern CEDR: \$70,343
- South-Western CEDR: \$67,681

Average Earnings

\$83,225 (2022)

Lower than New England (\$90,747) and slightly higher than the US (\$79,791)

- Central-Southern CEDR: \$82,793
- Seacoast CEDR: \$75,970
- Northern CEDR: \$66,805
- South-Western CEDR: \$63,432

Educational Attainment

39% Bachelor's or higher (2022)

Lower than the New England (42%), but higher than the nation (34%)

- Central Southern CEDR: 39%
- Seacoast CEDR: 42%
- Northern CEDR: 36%
- South-Western CEDR: 33%

Unemployment Rate

2.5% (December 2022)

Lower than New England (3.1%) and the nation (3.3%)

- Central-Southern CEDR: 2.4%
- Seacoast CEDR: 2.5%
- Northern CEDR: 2.6%
- South-Western CEDR: 2.6%

Labor Force Participation

66.7% (December 2022)

Significantly higher than New England (63.7%) and the nation (62.2%)

- Central-Southern CEDR: 69.2%
- Seacoast CEDR: 70.6%
- Northern CEDR: 56.5%
- South-Western CEDR: 60.7%

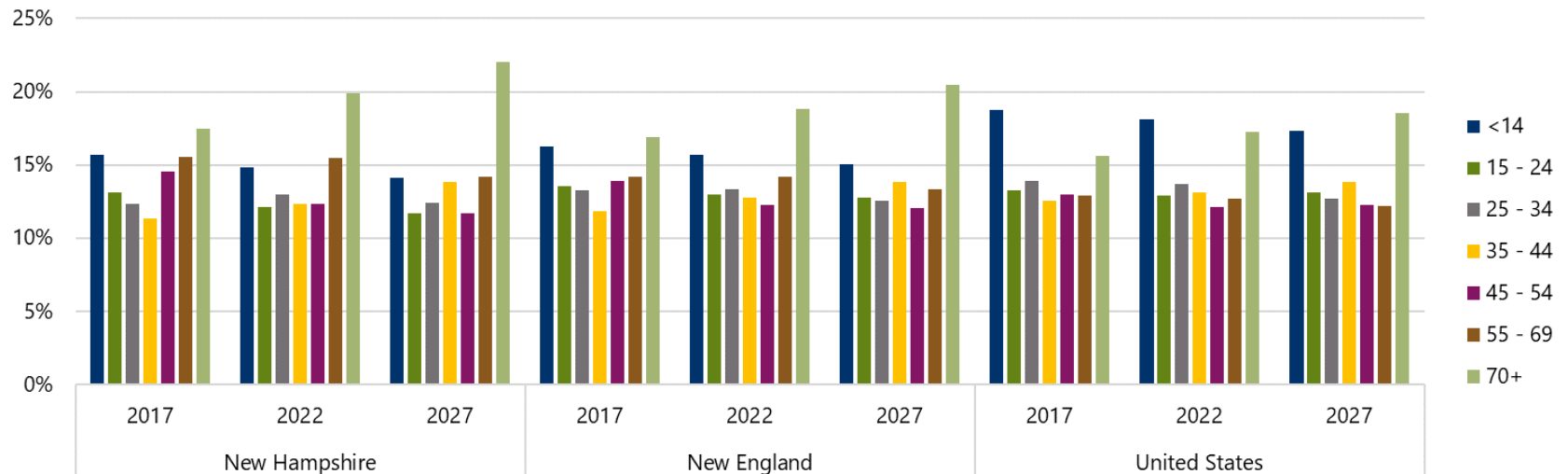
¹ Source: US Census Bureau, American Community Survey

Age

The median age in New Hampshire is 43.0, making it the second oldest state in the country (behind Maine, at 44.7). The State follows New England and national trends in population growth by age cohort, but generally at a greater magnitude. Overall, the trend points to an intensification of overlapping workforce, healthcare, and housing crises as Baby Boomers begin to retire and the younger cohorts lag in growth. Between 2017 and 2027:

- The population under the age of 14 is **declining** at -2%, compared to -2% in New England and -3% in the US
- 15–24-year-olds are **declining** more rapidly, at -3% compared to 0% in New England and +4% in the US
- 25-34-year-olds are **growing** more rapidly, at +10% compared to 0% in New England and -4% in the US
- 35-44-year-olds are **growing** more rapidly, at +32% compared to +24% in New England and +16% in the US
- 45– 54-year-olds are **declining** more rapidly, at -13% compared to -8% in New England and -1% in the nation. This is the cohort that is declining the fastest in the State.
- 55-69-year-olds are **increasing**, at +9% compared to +7% in New England and +6% in the US
- The 70 years and older cohort is increasing more rapidly, at +39% compared to +29% in New England and +27% in the nation. This is the cohort that is growing the fastest in the State.

Age Distribution



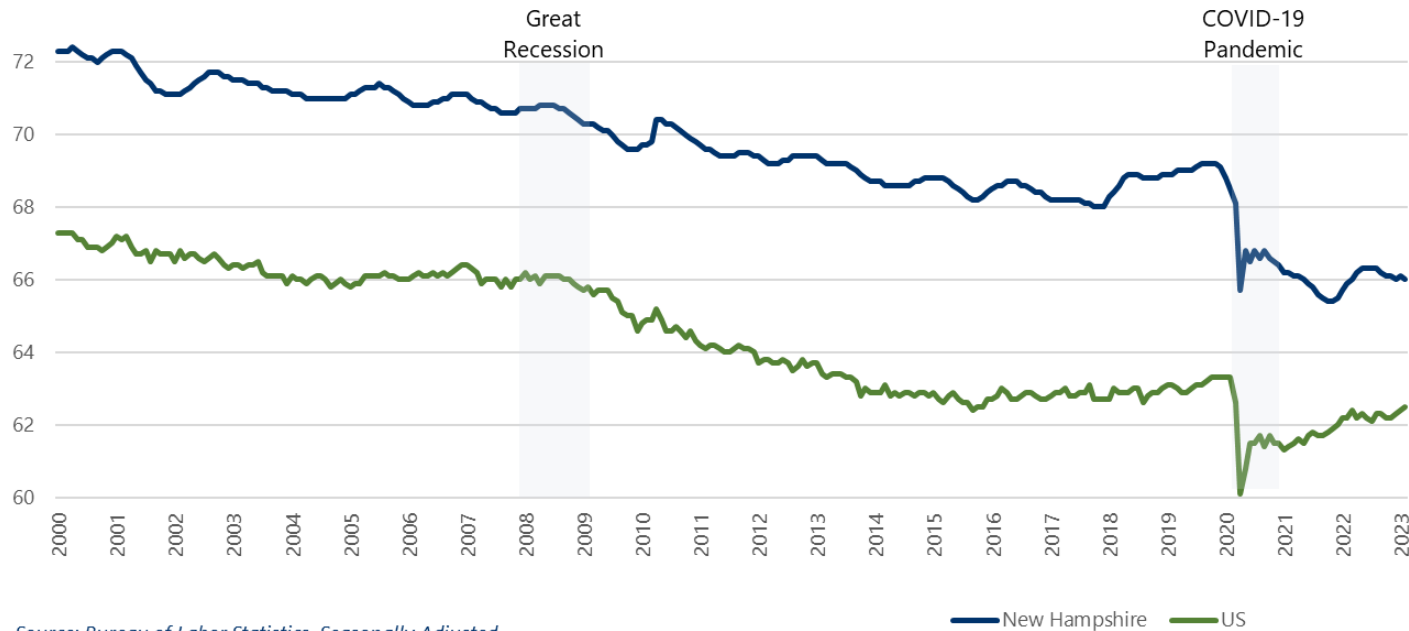
Source: Emsi

Labor Force

New Hampshire has a total labor force of 769,978 as of February 2023. Of those workers, 2.7% were unemployed.¹ New Hampshire has a labor force participation rate of 66.0% as of February 2023, which is significantly higher than participation at the national level (62.5%), but still not recovered to pre-pandemic levels. However, while the pandemic did have a sharp impact (a -3.45% decrease between March and April 2020, compared to -4.0% at the national level), labor force participation has been steadily declining over the past two decades in keeping with national trends. Overall, the labor force participation rate decreased by -8.7% between January 2000 and February 2023, compared to -7.1% for the US.

- Highest: 72.4% in April 2000 (compared to 67.3% in the US between January and April 2000)
- Lowest: 65.4% in October 2021 (compared to 60.1% in the US in April 2020)
- Average: 69.5% (compared to 64.4% at the national level)

Labor Force Participation Rate

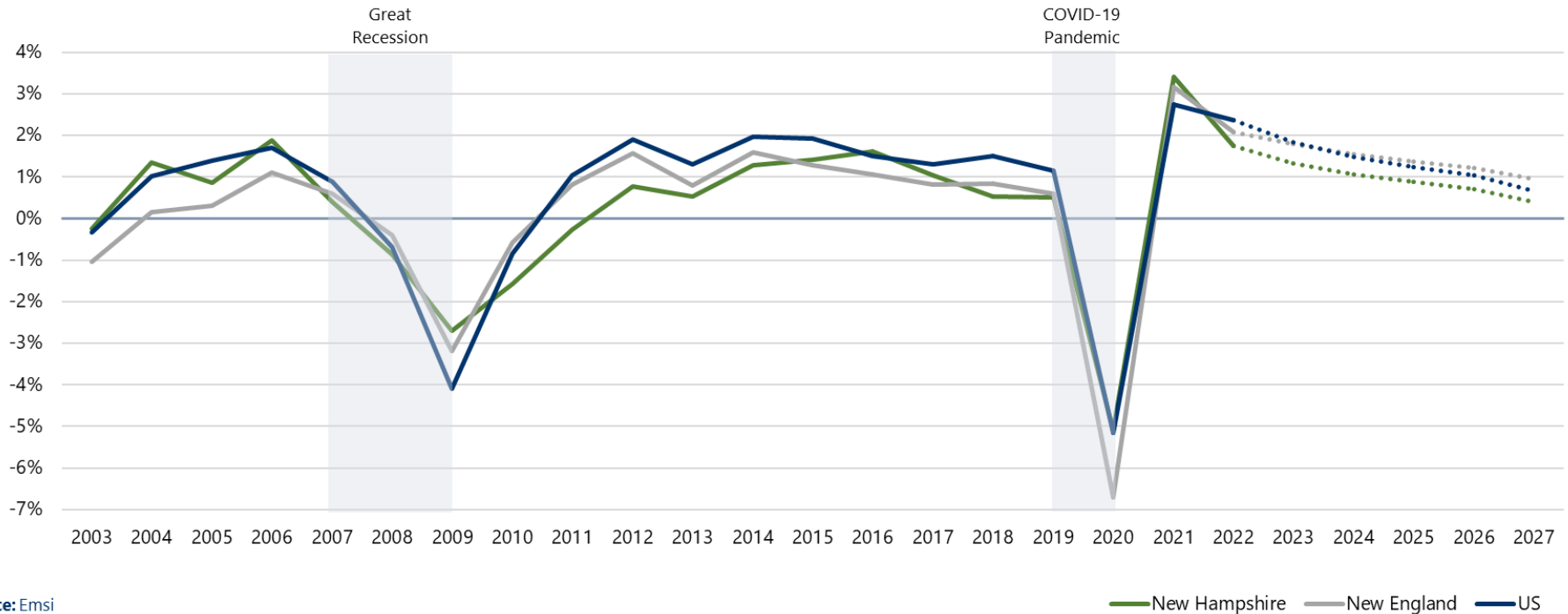


¹ Source: US Bureau of Labor Statistics, Local Area Unemployment Statics.

Jobs

As of 2022, there were 746,212 jobs in New Hampshire, which accounts for approximately 9.1% of the total jobs in New England. This is slightly below pre-pandemic job levels of 747,254 in 2019. Prior to the pandemic, the State's jobs were growing relatively slowly adding an annual average of 0.4% new jobs each year between 2003 and 2019, compared to 0.4% in New England and 0.7% in the nation. However, overall, the State follows job growth trends in New England and the nation and did not fare worse than the other regions of analysis during the pandemic, which resulted in job losses of -5.1% between 2019 and 2020, compared to -6.7% in New England and -5.1% in the nation. In fact, the State's recovery between 2020 and 2021 was slightly faster at 3.4% compared to 3.2% for New England and 2.7% in the nation. However, the State's job growth is expected to slow, with a projected growth rate of 4.5% between 2022 and 2027, while New England is expected to grow at 7.0% and the nation at 6.4%.

Historic and Projected Job Growth



Source: Emsi

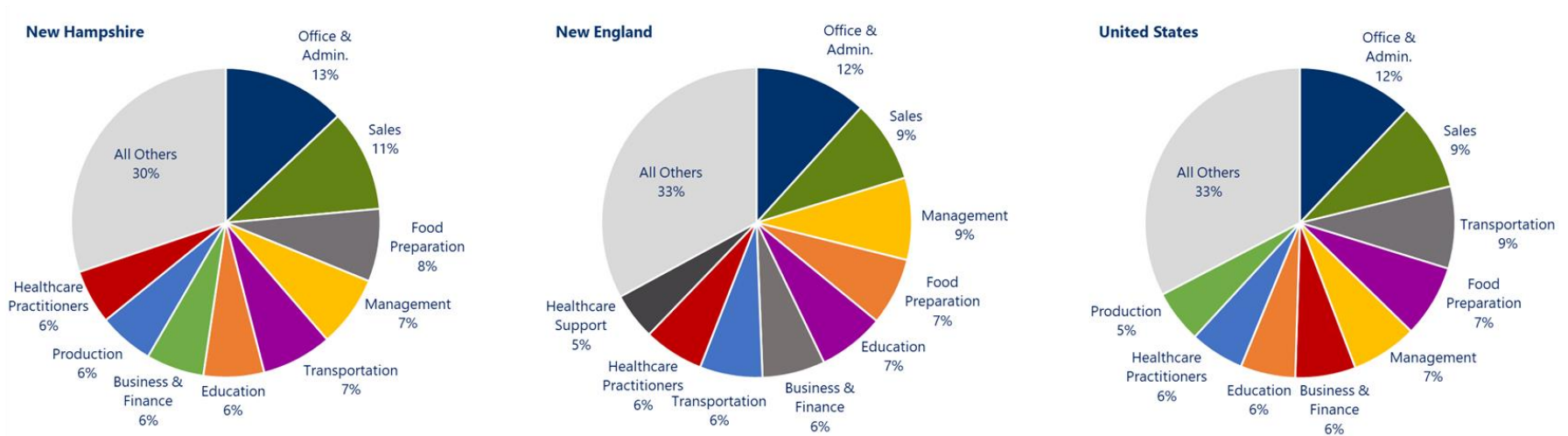
— New Hampshire — New England — US

Occupational Mix

At the 2-digit SOC code level, the occupational mix of the State of New Hampshire is relatively similar to that of New England and the United States. Within the top 10 occupation groups, the State only deviates by 1 -2 percentage points in terms of share of any given occupation. The State has a:

- Slightly larger share of *Office and Administrative* jobs than New England and the nation
- Slightly larger share of *Sales and Related* jobs than New England and the nation
- Slightly smaller share of *Transportation and Material Moving* jobs than the nation
- Slightly smaller share of *Management* jobs than New England
- Slightly larger share of *Production* jobs than the nation and New England (5% of total, not shown below)

Occupational Mix



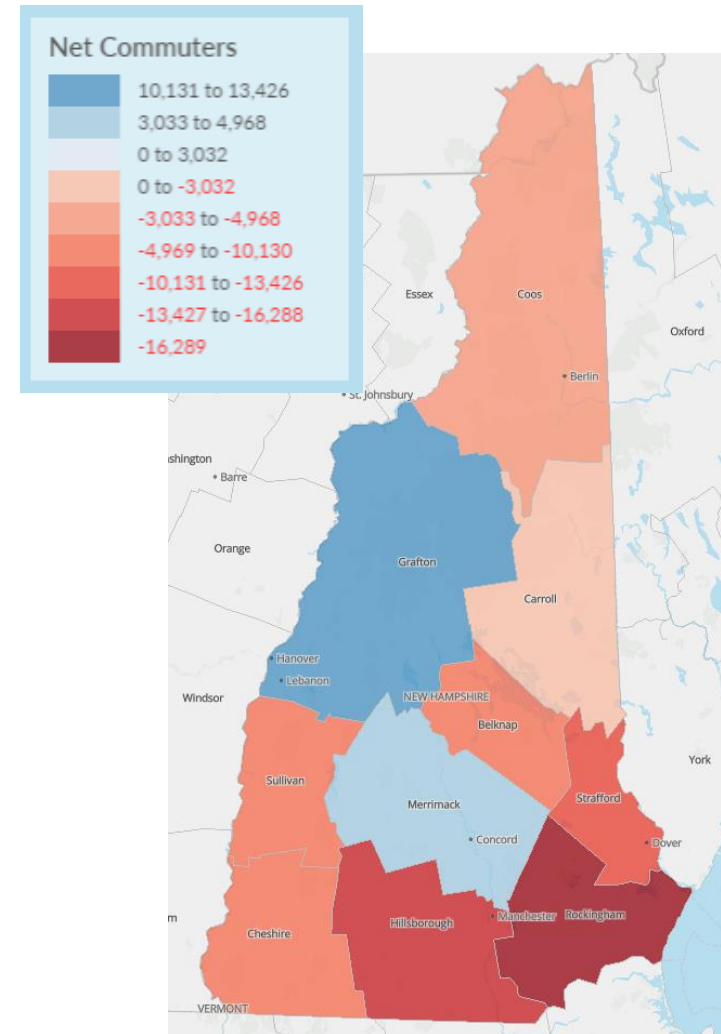
Source: Emsi

Commuting

In 2022, New Hampshire had an average commute time of 25.7 minutes, which aligns with the average commute time of 27.6 minutes across the nation.^{2, 3} The State had -45,964 net commuters in 2022, which means it exports workers to nearby communities, particularly the Greater Boston area. While Grafton and Merrimack counties attract in-commuters, the rest of the counties in New Hampshire are net exporters of labor, with Rockingham, Hillsborough, and Stafford losing the most.

Most cross-state commuters are those with monthly earnings above \$3,333. Among New Hampshire residents who work in another state, 67% earn over \$3,333 per month, about 18% earn between \$1,251 and \$3,333, and the remaining 14% earn \$1,250 per month or less. By comparison, among New Hampshire residents who work in New Hampshire, just over half (54%) earn more than \$3,333 per month, 26% earn between \$1,251 and \$3,333, and the remaining 21% earn \$1,250 per month or less. That is, high earners represent a larger share of out-commuting New Hampshire residents than of those who work in-state. This means the State is exporting its top earners.

See Appendix I for a more detailed analysis of commuting trends in the State of New Hampshire.



² Source: US Census Bureau, American Community Survey

³ Source: US Census Bureau, [Census Bureau Estimates Show Average One-Way Travel Time to Work Rises](#)

Remote Work

Of the 226,036 jobs posted online in New Hampshire in 2022, 29,929 – or 13% – were for remote positions. This number has been going up over time but increased drastically with the pandemic, with remote jobs accounting for 2% of all online job postings in 2019 to 3% in 2020, 5% in 2021, then to 13% in 2022. So far, in the first three months of 2023, 27% of all online job postings were listed as remote positions.

In addition to new remote job postings across the state, existing positions have also transitioned to remote capabilities at various rates across sectors. Remote work due to COVID-19 is estimated at 7% of total employment across the nation. “In June, 7.1 percent of employed persons teleworked because of the coronavirus pandemic, down from 7.4 percent in the prior month. These data refer to employed persons who teleworked or worked at home specifically because of the pandemic.”⁴

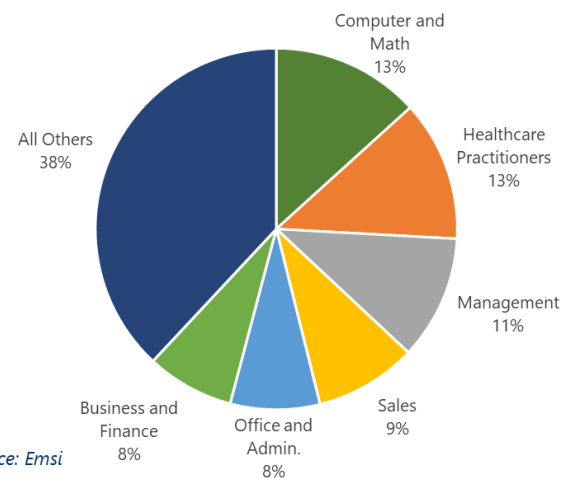
As of June 2022:⁵

- Workers who are able to do their jobs remotely worked from home 50% of the time
- Employers who are able to provide remote work planned to allow employees to do so for 2.3 days per week post-COVID
- College graduates are two times more likely to work from home than workers with no college
- Occupations that require less personal interaction are more likely to be remote
- Working from home is more common in urban areas
- Older workers are more likely to desire remote work

Remote workers vary significantly based on industry, as not all occupations can be performed remotely. Jobs in the Computer and Mathematical, Healthcare Practitioners and Technicians, Management, Sales, Office and Administrative Support, and Business and Financial Operations are the most likely to offer remote work. The top remote occupations in 2022 at the 5-digit level include:

- *Registered Nurses* (1,535 remote jobs postings accounting for 12% of total remote job postings)
- *Software Developers* (1,385; 5%)
- *Retail Salespersons* (741, 2%)
- *Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products* (736; 2%)
- *Computer Occupations, All Others* (652; 2%)

Remote Job Postings by Occupation Group, 2022



Source: Emsi

⁴ [Employment Situation Summary - 2022 Q02 Results \(bls.gov\)](#)

⁵ Barrero, Jose Maria, Nicholas Bloom, and Steven J. Davis, 2021. “Why working from home will stick,” National Bureau of Economic Research Working Paper 28731. www.wfhresearch.com Updated July 2022.

Remote work offers both opportunities and challenges to addressing workforce shortages. Remote work allows employers to expand their talent pool to include workers from across the nation, while also allowing for reduced operations costs. However, New Hampshire businesses that require in-person work will face increased competition in attracting local and regional workers, who now have more choice and are no longer limited by geography.

Workforce Pipeline

The State of New Hampshire has:

- Seven Community Colleges with 12 campuses
- Four public four-year colleges
- 12 private nonprofit colleges and universities
- 52 licensed career schools

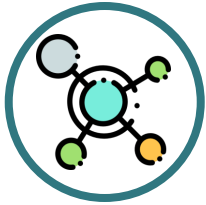
Just over 30% of New Hampshire higher educational program completions in 2021 were in business-related fields and another 14% were in health-related fields. Based on how educational fields prepare students for professional occupations, 26% of program completers had the minimum qualifications for jobs in the Management occupation group, 18% were qualified for entry-level in the Business and Financial Operations occupation group, and nearly 11% for the Computer and Mathematical occupation group.

- Statewide post-secondary completions grew 43% between 2017 and 2021 to 42,592. Two of the four CEDRs saw increases in completions over the period, with Northern CEDR completions increasing by 5% and Central-Southern CEDR by 67%. Total completions remained the same in the Northern CEDR and shrank by 14% in the South-Western CEDR, although those from Antioch University- New England grew by 56%.
- The top 10 academic major fields in the State in 2021 were: Business Administration and Management (8,116), Psychology (2,856), General Studies (1,825), Health/Health Care Administration/Management (1,707), Registered Nursing (1,629), Computer and Information Sciences (1,559), Accounting (1,416), Corrections and Criminal Justice (1,269), English Language and Literature (855), and Organizational Communication (720). These fields accounted for over half of all 2021 completions. Between 2017 and 2021, the fastest growing majors included Experimental Psychology (5,300%), Community Health Services/Liaison/Counseling (4,000%), and Critical Infrastructure Protection (3,550%).
- Statewide, the following occupations had the largest number of completions in 2021: 21,430 individuals in 2020 with the minimum academic qualifications to be *Managers, All Other* (21,430 completions), *Computer User Support Specialists* (13,158), *General and Operations Managers* (13,061), *Project Management Specialists* (12,809), and *Financial Managers* (12,774).

See Appendix II for a detailed Workforce Pipeline Profile.



3. CLUSTER ANALYSIS



Cluster Analysis

Purpose: This chapter summarizes the historical trends and current status of New Hampshire’s target sectors: Health Care, Manufacturing, Hospitality, and Technology. Each section also includes the top occupations that drive the sector’s performance. These top occupations are then further analyzed in the next chapter to identify the State’s greatest workforce gaps, which if not met could impede target sector growth.



Healthcare Cluster

Healthcare is the largest cluster in New Hampshire. It has above average earnings, employment growth, and is a major contributor to the state’s GRP. Just over 2,800 jobs were lost at the outset of the COVID-19 pandemic; however, employment has since recovered and even exceeds 2016 levels. In addition to top Healthcare Practitioners and Technical occupations – such as physicians and nurses – many top occupations are related to management, training, and human resources, which aligns with trends in other clusters.

- Healthcare is the largest cluster in the state with 98,682 workers (14% of the workforce).
- The Healthcare cluster is experiencing moderate growth of 6% between 2016 and 2026. The pandemic caused a 3% contraction between 2019 and 2021; however, the cluster was growing prior to the pandemic and is expected to continue through 2026. It has already recovered to pre-pandemic employment levels.
- New Hampshire has above average earnings in Healthcare than expected for an area this size (\$77,187 compared to \$73,280).
- The Healthcare cluster is the second largest contributor to GRP (9%, behind Manufacturing at 13%), but are some of the least productive employees (\$88,162 followed by Hospitality at \$49,218). As a labor intensive, non-goods producing cluster, this is expected and follows national trends.
- Healthcare has the lowest industry concentration of all the clusters, and it is the only cluster whose concentration is decreasing over time. The cluster’s location quotient reduced from 0.98 in 2019 to 0.97 in 2021, and it is expected to decrease to 0.94 by 2026. See Appendix III for a detailed analysis of the Healthcare Cluster.

Top Industries

- Child Day Care Services
- Community Food Services
- Family Planning Centers
- Freestanding Ambulatory Surgical & Emergency Centers
- General Medical & Surgical Hospitals
- Offices of Physicians (except Mental Health Specialists)
- Offices of Physicians, Mental Health Specialists
- Other Residential Care Facilities
- Outpatient Mental Health & Substance Abuse Centers
- Research & Development in Biotechnology (except Nanobiotechnology)

Top Occupations

- All Other Project Management Specialists and Business Operations Specialists
- Human Resources Specialists
- Mental Health and Substance Abuse Social Workers
- Physicians, All Other; and Ophthalmologists, Except Pediatric
- Registered Nurses
- Social and Community Service Managers
- Speech-Language Pathologists
- Training and Development Specialists





Manufacturing Cluster

Manufacturing is crucial to New Hampshire's economy, accounting for a large share of employment, contributing the largest share of the State's GRP, and offering higher than average earnings. However, the State does not have a strong competitive advantage in this sector and is expected to continue losing jobs. Overall, jobs in this sector are becoming more technical in nature.

- The Manufacturing cluster employs 69,844 workers, or 10% of the total workforce.
- The Manufacturing cluster is in decline. It was deeply impacted by the COVID-19 pandemic, losing just over 4,300 jobs between 2019 and 2021. However, unlike other clusters that experienced losses due to the pandemic, the Manufacturing cluster is not projected to grow through 2026. Prior to the pandemic, the cluster was experiencing moderate growth of 5%.
- Average earnings in the Manufacturing cluster are higher than expected for an area this size.
- The Manufacturing cluster is the top contributor to New Hampshire's GRP (13%) and has the second most productive workers (\$174,676 following \$259,245 for Technology). This is in keeping with national trends, as Manufacturing tends to be a capital-intensive industry.
- Manufacturing has the largest businesses among the clusters.
- The State has a slightly higher concentration relative to the US in Manufacturing, which has remained steady since 2016.
- New Hampshire does not have a competitive advantage in Manufacturing, with 1,161 fewer jobs than expected between 2016 and 2026 due to local factors. This means there are 1065% fewer jobs in this cluster than expected than if national and industry growth trends were the only factors.
- Manufacturing has the highest retirement risk of the State's clusters.
- Nearly half of all jobs within the cluster are in the Production occupation sector (47%). Overall, Production occupations are declining as Manufacturing is becoming more reliant on technology and automation. Computer and Mathematical occupations are growing the fastest within this cluster, while Production is expected to decrease.
- The Manufacturing cluster has the most diversification across occupations. The top 30 occupations account for only 58% of total employment (in the other clusters, the top 30 occupations account for at least 69% of all employment).

See Appendix IV for a detailed analysis of the Manufacturing Cluster.

Top Industries

- Fastener, Button, Needle & Pin Manufacturing
- In-Vitro Diagnostic Substance Manufacturing
- Machine Shops
- Nonferrous Metal Die-Casting Foundries
- Optical Instrument & Lens Manufacturing
- Other Electronic Component Manufacturing
- Rolled Steel Shape Manufacturing
- Search, Detection, Navigation, Guidance, Aeronautical & Nautical System & Instrument Manufacturing
- Small Arms, Ordnance & Ordnance Accessories Manufacturing

Top Occupations

- Architectural and Engineering Managers
- Business Operations Specialists, All Other
- Computer and Information Systems Managers
- Electricians
- Human Resource Specialists
- Industrial Engineers
- Industrial Production Managers
- Logisticians
- Mechanical Engineering Technologists and Techs
- Mechanical Engineers
- Project Management Specialists
- Purchasing Managers
- Rolling Machine Setters, Operators, and Tenders in Metal and Plastic
- Sales Managers
- Software Developers and Software Quality Assurance Analysts and Testers



Hospitality Cluster

The Hospitality industry cluster lags behind the other clusters on most indicators; however, its importance in terms of quality of life, population retention, and workforce attraction cannot be overstated. This cluster was hit particularly hard by the COVID-19 pandemic; however, there are signs of recovery. While most jobs within this cluster are not suitable for target attraction due to low wages, some of the top occupations are related to management, training, and human resources, which aligns with trends in the other clusters.

- The Hospitality industry cluster employs 60,953 workers, or 8% of the total workforce in New Hampshire. It is the third largest cluster in the state.
- With a growth rate of -8% from 2016 to 2026, the Hospitality cluster has experienced the slowest growth rates of all the clusters, primarily due to the COVID-19 pandemic (-12,375 for a growth rate of -12% between 2019 and 2021). However, the cluster was growing prior to the pandemic (4% from 2016 to 2019) and is projected to grow by 6% through 2026, though it is not expected to recover to pre-pandemic levels by then.
- The Hospitality cluster contributes the smallest share of the state's gross regional product (only 3% of total GRP) and has the least productive workers (\$49,218 per job). As a labor intensive, non-goods producing cluster, this is to be expected and aligns with national trends.
- The Hospitality cluster has relatively low industry concentration of 1.05; however, it is becoming more concentrated over time. The location quotient was 1.01 in 2016 and is expected to increase by 6% by 2026 to 1.07, growth that is second only to the Technology cluster.
- New Hampshire has a competitive advantage in Hospitality. Although the state's Hospitality employment declined by 8% from 2016 to 2026 (due to the pandemic), it shrank by 26% less than expected than if it had followed national and industry trends.
- The Hospitality cluster has the lowest retirement risk of all the clusters; however, with 17% of the workforce aged 55 and over, that risk is still relatively high.
- The vast majority of jobs in this cluster are in the Food Preparation and Serving occupations (68%). Two of those occupations, Fast Food and Counter Workers (19%) and Waiters and Waitresses (14%), account for a third of cluster employment.

See Appendix V for a detailed analysis of the Hospitality Cluster.

Top Industries

- Full-Service Restaurants
- Limited-Service Restaurants
- Snack and Nonalcoholic Beverage Bars
- Drinking Places
- Cafeterias, Grill Buffets, and Buffets
- Caterers
- Skiing Facilities
- Bed-and-Breakfast Inns
- Recreational and Vacation Camps
- Convention and Trade Show Organizers

Top Occupations

- General and Operations Managers
- Food Service Managers
- Maintenance and Repair Workers, General
- Training and Development Specialists
- Project Management Specialists and Business Operations Specialists, All Other
- Market Research Analysts and Marketing Specialists
- Sales Representatives of Services
- Human Resource Specialists
- Financial Managers
- Personal Service Managers
- Entertainment and Recreation Managers
- Managers, All Other



Construction Cluster

The Construction cluster is experiencing strong growth, even through the pandemic. It accounts for a fairly large share of the State's businesses, and its employees are productive. The State does not have industry concentration or a competitive advantage in this cluster. In keeping with trends among the other clusters, some of the top occupations are in management positions.

- The Construction industry cluster employs 42,040 workers, or 6% of the total workforce in New Hampshire. It is the fourth largest cluster in the state.
- With a growth rate of 10% from 2016 to 2026, the Construction cluster is the second fastest growing cluster in the State (behind Technology at 33%). This cluster did not experience any job losses during the pandemic, though growth has been slowing a bit since 2019. It is projected to grow an additional 2% by 2026.
- This cluster accounts for the largest share of the State's payroll business locations (9%). Construction companies tend to be rather small, with an average of 8 employees.
- The Construction cluster is one of the smaller contributors to the State's gross regional product (only 5% of total GRP), but its employees are relatively productive (\$107,041 per job).
- The State of New Hampshire does not have any industry concentration in the Construction cluster (LQ = 1.00), and that has been consistent over time. Since Construction is typically not export-oriented, a neutral industry concentration is to be expected.
- New Hampshire does not have a competitive advantage in Construction. Between 2016 and 2026, this cluster will have 970 fewer jobs than expected if it had followed national and industry trends.
- The Construction cluster has a high retirement risk, with 29% of the workforce aged 55 and over.
- Over 62% of jobs in this cluster are within the Construction and Extraction occupation sector. At the 5-digit level, Construction Laborers (12%) and Carpenters (12%) account for 24% of cluster employment.

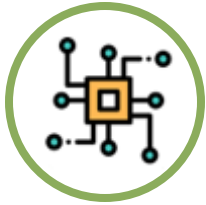
See Appendix VI for a detailed analysis of the Construction Cluster.

Top Industries

- All Other Specialty Trade Contractors
- Drywall and Insulation Contractors
- Electrical Contractors and Other Wiring Installation Contractors
- New Multifamily Housing Construction (except For-Sale Builders)
- Oil and Gas Pipeline and Related Structures Construction
- Plumbing, Heating, and Air-Conditioning Contractors
- Residential Remodelers
- Siding Contractors
- Site Preparation Contractors
- Structural Steel and Precast Concrete Contractors

Top Occupations

- Construction Managers
- Earth Drillers and Explosives Workers, Ordnance Handling Experts, and Blasters
- Electrical Power-Line Installers and Repairers
- Electricians
- Floor Layers, Except Carpet, Wood, and Hard Tiles
- General and Operations Managers
- Operating Engineers
- Other Construction Equipment Operators
- Pile Driver Operators
- Project Management Specialists and Business Operations Specialists



Technology Cluster

Although the Technology industry cluster is relatively small, it is driving job growth in the State. Not only is the cluster rapidly growing, but it also has the highest wages and the most productive workers of any of the clusters and a significant competitive advantage. In addition to the top occupations in the Computer and Mathematical sector, this cluster follows trends across the other cluster in terms of demand for management.

- New Hampshire's Technology cluster employs 22,373 workers, accounting for just 3% of jobs.
- The Technology cluster is the State's fastest-growing cluster, with 33% growth between 2016 and 2026 (more than triple the rate of the next fastest growth cluster, Construction at 10%). Unlike many of the other clusters, Technology job growth remained steady during the height of the COVID-19 pandemic, growing 5% between 2019 and 2021. It is projected to grow an additional 12% by 2026 for a total of 6,167 jobs added over the ten-year time period.
- The Technology cluster has the smallest businesses among the clusters with an average of 6 jobs per location.
- The Technology cluster accounts for 6% of the State's GRP, and it has the most productive workforce. Its workers produce \$259,000 of GRP per job compared to the next highest cluster, Manufacturing at \$175,000 per job.
- This cluster has the highest paying jobs at \$151,810 on average. However, Technology workers in New Hampshire earn less than the national average of \$157,121 for an area this size.
- This cluster has the highest industry concentration relative to the nation (LQ = 1.25). Overall, the LQ is projected to increase by 11% to 1.29 from 2016 to 2026.
- New Hampshire has a competitive advantage in Technology, adding 1,907 more jobs than expected from 2016 to 2026 due to local factors. This means 45% of the jobs created cannot be explained by national or industry growth.
- Over 48% of jobs within the cluster fall within the Computer and Mathematical occupation sector, which is projected to increase by 43% from 2016 through 2026. The Technology cluster has the highest concentration of employment in a single occupation, with Software Developers and Software Quality Assurance Analysts and Testers accounting for 21% of the cluster's total employment.

See Appendix VII for a detailed analysis of the Technology Cluster.

Top Industries

- Computer Systems Design Services
- Custom Computer Programming Services
- Other Computer-Related Services
- Software Publishers
- Wired Telecommunications Carriers

Top Occupations

- Computer and Information Systems Analysts
- Computer and Information Systems Managers
- Computer Network Architects
- Computer Occupations, All Other
- Computer Systems Analysts
- Computer User Support Specialists
- Marketing Managers
- Project Management Specialists and Business Operations Specialists
- Sales Managers
- Software Developers & Software Quality Assurance Analysts



4. SUPPLY, DEMAND, AND GAP ANALYSIS FOR TOP OCCUPATIONS



Supply, Demand, and Gap Analysis

Purpose: This section identifies the in-demand occupations where the talent supply is low. The Gap Analysis outlines the occupations expected to see the greatest gaps across the state and by Collaborative Economic Development Regions (CEDR). The analysis cross references the in-demand occupations with the state’s target sectors in order to inform state, local, and sector strategies.

Key Takeaways

- **The State’s labor force is projected to increase by just over 21,000 over the next ten years.** Projecting national age-based participation rates to 2032 and adjusting for New Hampshire’s higher overall participation rate relative to the nation yields an effective total participation rate of 63.3% in the State and a total labor force increase of 21,008.
- **The State is expected to have a gap of nearly 191,000 workers in the Top Occupations over the next ten years.** The 80 Top Occupations are projected to gain a total of 6,095 workers between 2022 and 2032 across the State. This comprises the “Supply” portion of the gap analysis. Meanwhile, there are projected to be just over 196,971 job openings for the 80 Top Occupations. These openings are used to estimate the “Demand” for Top Occupations. Subtracting the openings from the projected increase in the labor force results in a shortfall, or gap, of 190,876 workers.
- **There are 34 of the Top Occupations that are expected to have a workforce gap of over 2,000 over the next ten years.** These are the most In-Demand Occupations in the State and strategies for addressing these gaps are included in Chapter 5. These 34 occupations span 12 occupational clusters. Management occupations accounted for the largest portion of the projected labor force gap, with an estimated shortfall of 26,052 workers over the next 10 years. Other large occupational group gaps include Business and Financial Operations (12% of the gap), and Sales and Related Occupations (11%). Occupations in bold span multiple industry clusters.
- **Most of New Hampshire’s labor force growth will occur in the populous Central-Southern CEDR, where the labor force is expected to grow by 13,052.** The labor force in the Seacoast CEDR is expected to grow by 9,183, while the Northern CEDR will increase by only 51 and the South-Western CEDR’s labor force is expected to shrink by 1,278.
- **The Central-Southern CEDR is expected to see the most openings for Top Occupations, with almost 77,500 by 2032.** It is followed by the Seacoast CEDR with close to 59,000, the South-Western CEDR with just over 12,000, and the Northern CEDR with a little more than 29,000.
- **The largest workforce gap for the State’s Top Occupations is expected to be in the Central-Southern CEDR, with close to 74,000 openings unfilled by labor force growth.** The Seacoast CEDR is expected to see a shortage of over 56,000 unfilled openings, followed by more than 29,000 in the Northern CEDR, and over 12,000 in the South-Western CEDR.
- **The 80 Top Occupations account for a significant portion of the job postings within the State.** On average, there were 4,822 unique job postings per month for the Top Occupations across the State, which accounts for 40% of the 12,067 unique job postings across all occupations.

Supply

To evaluate the future supply of workers in the Top 80 Occupations, Camoin Associates created labor force projections through 2032 based on historical national age-based participation rates, adjusting to account for New Hampshire’s overall higher participation rate relative to the nation. This analysis yields an effective total participation rate of 63.3% in the State and a projected total labor force increase of 21,008, aggregated for the years 2022 through 2032 – which was then distributed across occupations based on the State’s projected occupational mix in 2032 per Emsi.

The 80 Top Occupations are projected to gain a total of 6,095 workers between 2022 and 2032 across the State.

The table below shows the Top Occupations that are projected to gain at least 100 workers over the next ten years. See Appendix IX: Gap Analysis for additional detail on the methodology used to create these labor force projections.

Top Occupations with the Largest Projected Growth in Labor Force, 2022–2032

SOC	Description	Labor Force Growth
29-1141	Registered Nurses	412
11-1021	General and Operations Managers	396
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	322
53-3032	Heavy and Tractor-Trailer Truck Drivers	233
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	223
43-1011	First-Line Supervisors of Office and Administrative Support Workers	204
41-1011	First-Line Supervisors of Retail Sales Workers	195
13-2011	Accountants and Auditors	181
47-2031	Carpenters	153
13-1198	Project Management Specialists and Business Operations Specialists, All Other	151
49-9071	Maintenance and Repair Workers, General	150
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	135
11-3031	Financial Managers	131
11-9198	Personal Service Managers, All Other; Entmt. and Rec. Managers; and Managers, All Other	131
13-1111	Management Analysts	127
47-2111	Electricians	105
15-1232	Computer User Support Specialists	101
Total		4,682

Demand

Openings

Openings is an indicator of projected job demand. Openings are an estimate of the number of new jobs being created and replacements from workers retiring or permanently leaving an occupation (growth + replacements = openings).

There are projected to be just over 196,971 job openings for the 80 Top Occupations in New Hampshire between 2022 and 2032.

The table to the right shows the occupations that are projected to have at least 2,000 openings during that period. Together, these 34 jobs account for 80% of the projected openings in the Top Occupations. The most in-demand occupations include:

- *General and Operations Managers* (12,301 projected openings)
- *Software Developers and Software Quality Assurance Analysts and Testers* (9,706)
- *Heavy and Tractor-Trailer Truck Drivers* (9,468)
- *Registered Nurses* (8,358)
- *Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products* (8,293)

See Appendix IX: Gap Analysis for additional detail on openings by CEDR.

Top Occupations by Projected Openings, 2022–2032

SOC	Description	Openings
11-1021	General and Operations Managers	12,301
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	9,706
53-3032	Heavy and Tractor-Trailer Truck Drivers	9,468
29-1141	Registered Nurses	8,358
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	8,293
41-1011	First-Line Supervisors of Retail Sales Workers	7,716
43-1011	First-Line Supervisors of Office and Administrative Support Workers	7,451
13-2011	Accountants and Auditors	5,921
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	5,690
47-2031	Carpenters	5,274
49-9071	Maintenance and Repair Workers, General	5,234
13-1111	Management Analysts	4,349
13-1198	Project Management Specialists and Business Operations Specialists, All Other	4,249
39-9031	Exercise Trainers and Group Fitness Instructors	4,556
47-2111	Electricians	4,051
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	3,772
11-3031	Financial Managers	3,678
11-9198	Personal Service Managers, All Other; Entmt. and Rec. Managers; and Managers, All Other	3,686
13-1161	Market Research Analysts and Marketing Specialists	3,617
13-1071	Human Resources Specialists	3,348
51-1011	First-Line Supervisors of Production and Operating Workers	3,024
51-9161	Computer Numerically Controlled Tool Operators	2,985
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	2,945
15-1232	Computer User Support Specialists	2,878
11-3021	Computer and Information Systems Managers	2,707
15-1211	Computer Systems Analysts	2,530
25-3021	Self-Enrichment Teachers	2,666
47-2152	Plumbers, Pipefitters, and Steamfitters	2,498
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	2,490
13-1028	Buyers and Purchasing Agents	2,319
11-9111	Medical and Health Services Managers	2,324
49-9041	Industrial Machinery Mechanics	2,276
11-9021	Construction Managers	2,266
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	2,112
Total		156,737

Source: Emsi

Job Postings Analytics

Analysis of job postings data provides real-time insight into the Top Occupations, the intensity of demand, and the skills and qualifications that employers are seeking based on job vacancy advertisements aggregated from over 45,000 websites. This data is limited to the jobs advertisements posted on an online platform, but there is likely a great deal of variation in terms of online job advertisements among industries and occupations. This means that while this analysis can provide intelligence into the overall demand for a particular occupation, it is not indicative of the actual total demand for the Top Occupations in the State. See Appendix VII for a detailed analysis of job postings. Key takeaways from the job postings analytics include:

- **The 80 Top Occupations account for a significant portion of the job postings within the State.** On average, there were 4,822 unique job postings per month for the Top Occupations across the State, which accounts for 40% of the 12,067 unique job postings across all occupations.
- **Demand for the Top Occupations varies widely by region.** The Central-Southern CEDR is the leader in unique job postings within the State, accounting for 50% of the average monthly unique job postings for the Top Occupations. The Seacoast CEDR accounted for the second largest proportion of postings (28%), followed by the Northern CEDR (15%), then the South-Western CEDR (6%).
- **Unique job postings per month have increased slightly since the beginning of the COVID-19 Pandemic, but overall, the average number of monthly postings has remained consistent over the past 5 years.** On average, there are 4,777 job postings per month for the Top Occupations across the State. The Top Occupation within the State in terms of total number of unique postings is *Registered Nurses*, which accounted for 19% of the total job postings.
- **As a group, employers are putting average effort toward hiring the Top Occupations; however, posting intensity varied by occupation.** The State's average posting intensity of 2:1 for the Top Occupations, which is similar to the posting intensity for all other occupations in the State. *Rolling Machine Setters, Operators, and Tenders, Metal and Plastic* had the highest posting intensity of the Top Occupations, with 10 additional postings per 1 unique posting. Other occupations with relatively high posting intensities include *Industrial Machinery Mechanics* (6:1), *Electrical Engineers* (5:1), and *Industrial Engineers* (5:1).
- **The industries with the highest number of unique postings include Administrative and Support and Waste Management and Remediation Services (16% of postings),⁶ Health Care and Social Assistance (14%), Manufacturing (10%), and Retail (8%).**
- **There were 3 unique postings for every 1 job opening in the Top Occupations over the past 5 years. A disproportionate number of job advertisements every month relative to the number of open positions that are available is an indication that employers may be having trouble meeting their talent needs.** About half of the Top Occupations that had the highest ratios of postings per openings were in the Healthcare Practitioners and Technical Occupations sector, including *General Internal Medicine Physicians* (21.5 postings per opening), *Physical Therapists* (16.7), *Registered Nurses* (15.1), and *Nurse Practitioners* (11.4).

⁶ The Administrative and Support and Waste Management and Remediation Services sector provides routine support activities for the day-to-day operations of other organizations, such as security, collection agencies, janitors, landscaping, trash, etc. Nearly 49% of the job postings for this sector were for Temporary Help Services.

- There was a gap of \$5,913 between the median annual earnings and the median advertised salary for the Top Occupations, which may indicate that employers are not having a hard time filling these positions. However, at the occupation-level, there are many postings that are paying a premium over the median earnings for the occupation, which may be an indication that employers are having a hard time filling these positions. The occupations with the largest premiums include *Magnetic Resonance Imaging Technicians* (job postings offered \$23,240 more per year than the median earnings for this occupation), *Computer Network Support Specialists* (\$15,235 more), *Database Administrators and Architects* (\$14,819), *Physicians, All Other; and Ophthalmologists, Except Pediatric* (\$14,442), and *Heavy and Tractor-Trailer Truck Drivers* (\$14,1630).
- Top Occupations that are in-demand based on meeting at least two of the job postings metrics are shown below:

In-Demand Top Occupations based on Job Postings Analytics, 5-digit SOC

Occupations that span multiple clusters shaded in grey

SOC	Occupation	Average Unique Postings	Posting Intensity	Postings per Job Opening	Salary Premium
11-1021	General and Operations Managers	x	x		
11-2022	Sales Managers	x		x	
11-3031	Financial Managers	x	x		
11-9051	Food Service Managers	x	x	x	
11-9111	Medical and Health Services Managers	x		x	
13-1081	Logisticians		x		
15-1231	Computer Network Support Specialists		x		x
15-1232	Computer User Support Specialists	x	x		
15-1241	Computer Network Architects		x	x	
15-1245	Database Administrators and Architects	x		x	x
15-1299	Computer Occupations, All Other	x		x	
29-1021	Dentists, General	x		x	
29-1051	Pharmacists		x	x	
29-1123	Physical Therapists	x		x	
29-1141	Registered Nurses		x	x	x
29-1171	Nurse Practitioners		x	x	
29-1216	General Internal Medicine Physicians		x	x	
29-1228	Physicians, All Other; and Ophthalmologists, Except Pediatric	x		x	x
29-2035	Magnetic Resonance Imaging Technologists			x	x
29-2061	Licensed Practical and Licensed Vocational Nurses	x	x	x	
41-1011	First-Line Supervisors of Retail Sales Workers	x		x	
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	x	x		
47-2111	Electricians		x		x
47-2152	Plumbers, Pipefitters, and Steamfitters		x		x
53-3032	Heavy and Tractor-Trailer Truck Drivers	x	x		x

Gap Analysis

Statewide Gaps

The State's largest labor force gaps (or unmet demand) are calculated by subtracting the projected labor force growth from the projected openings for the Top Occupations using the following formula: *Openings (Demand) – Labor Force Growth (Supply) = Gap*.

Assuming a total labor force growth of 6,095 and openings of 196,971 there will be a projected gap of 190,876 workers across the 80 Top Occupations between 2022 and 2032.

The table on the following page shows the Top Occupations with a projected workforce gap of over 2,000 between 2022 and 2032. These 34 Top Occupations – or the In-Demand Occupations - are expected to have almost 156,737 openings over the next decade, of which only 4,682 will be filled by labor force growth. These In-Demand Occupations currently account for 77% of the Top Occupation jobs in New Hampshire and 80% of the projected workforce gap. The occupations with the largest gaps include:

- *General and Operations Managers* are expected to see the largest shortage, with a gap of 11,905 jobs
- *Software Developers and Software Quality Assurance Analysts and Testers* (–9,384)
- *Heavy and Tractor-Trailer Truck Drivers* (–9,235)
- *Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products* (–8,070)
- *Registered Nurses* (–7,946)
- *First-Line Supervisors of Retail Sales Workers* (–7,521)
- *First-Line Supervisors of Office and Administrative Support Workers* (–7,247) are also expected to have large gaps

Top Occupations with the Largest Projected Employment Gaps, 2022–2032

SOC	Description	Gap Analysis (2022 - 2032)			
		2022 Employment	Labor Force Growth	- Openings	= Projected Gap
11-1021	General and Operations Managers	13,404	396	12,301	(11,905)
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	9,634	322	9,706	(9,384)
53-3032	Heavy and Tractor-Trailer Truck Drivers	8,078	233	9,468	(9,235)
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	7,399	223	8,293	(8,070)
29-1141	Registered Nurses	14,401	412	8,358	(7,946)
41-1011	First-Line Supervisors of Retail Sales Workers	7,576	195	7,716	(7,521)
43-1011	First-Line Supervisors of Office and Administrative Support Workers	7,550	204	7,451	(7,247)
13-2011	Accountants and Auditors	6,239	181	5,921	(5,740)
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	4,496	135	5,690	(5,556)
47-2031	Carpenters	5,638	153	5,274	(5,121)
49-9071	Maintenance and Repair Workers, General	5,208	150	5,234	(5,084)
39-9031	Exercise Trainers and Group Fitness Instructors	1,906	80	4,556	(4,476)
13-1111	Management Analysts	4,249	127	4,349	(4,222)
13-1198	Project Management Specialists and Business Operations Specialists, All Other	5,000	151	4,249	(4,098)
47-2111	Electricians	3,462	105	4,051	(3,946)
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	3,321	82	3,772	(3,689)
11-9198	Personal Service Managers, All Other; Entmt. and Rec. Managers; and Managers, All Other	4,336	131	3,686	(3,555)
11-3031	Financial Managers	4,307	131	3,678	(3,547)
13-1161	Market Research Analysts and Marketing Specialists	2,919	95	3,617	(3,521)
13-1071	Human Resources Specialists	3,114	94	3,348	(3,255)
51-1011	First-Line Supervisors of Production and Operating Workers	3,004	84	3,024	(2,939)
51-9161	Computer Numerically Controlled Tool Operators	2,733	74	2,985	(2,911)
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	2,985	82	2,945	(2,863)
15-1232	Computer User Support Specialists	3,346	101	2,878	(2,777)
11-3021	Computer and Information Systems Managers	3,196	95	2,707	(2,612)
25-3021	Self-Enrichment Teachers	1,853	62	2,666	(2,605)
15-1211	Computer Systems Analysts	3,125	93	2,530	(2,437)
47-2152	Plumbers, Pipefitters, and Steamfitters	2,288	66	2,498	(2,432)
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	2,506	71	2,490	(2,419)
13-1028	Buyers and Purchasing Agents	2,416	64	2,319	(2,255)
11-9111	Medical and Health Services Managers	2,260	75	2,324	(2,250)
49-9041	Industrial Machinery Mechanics	2,131	68	2,276	(2,208)
11-9021	Construction Managers	2,676	81	2,266	(2,184)
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	2,260	65	2,112	(2,047)
Total		159,015	4,682	156,737	(152,054)

Source: Emsi and Camoin Associates



Regional Gaps

The largest projected workforce gaps by CEDR are outlined below. See Appendix IX: Gap Analysis for additional detail on gaps by CEDR.

Central-Southern CEDR

Top Occupations currently provide 86,609 jobs and are expected to have 77,450 openings over the next decade with only 3,801 filled from labor force growth. The largest expected shortages include:

- *General and Operations Managers* (–4,563)
- *Software Developers and Software Quality Assurance Analysts and Testers* (–3,631)
- *Heavy and Tractor-Trailer Truck Drivers* (–3,319)
- *Registered Nurses* (–3,105)
- *First-Line Supervisors of Office and Administrative Support Workers* (–2,885)

Seacoast CEDR

Top Occupations currently provide 60,729 jobs and are expected to have 58,754 openings over the next decade with only 2,586 filled from labor force growth. The largest expected shortages include:

- *General and Operations Managers* (–3,507)
- *Heavy and Tractor-Trailer Truck Drivers* (–3,208)
- *Software Developers and Software Quality Assurance Analysts and Testers* (–2,604)
- *First-Line Supervisors of Retail Sales Workers* (–2,567)
- *Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products* (–2,165)

South-Western CEDR

Top Occupations currently provide 13,168 jobs and are expected to have 12,098 openings over the next decade while the labor force shrinks by 335. The largest expected shortages include

- *General and Operations Managers* (–761)
- *First-Line Supervisors of Retail Sales Workers* (–673)
- *Heavy and Tractor-Trailer Truck Drivers* (–625)
- *Carpenters* (–518)
- *Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products* (–494)

Northern CEDR

Top Occupations currently provide 32,257 jobs and are expected to have 29,177 openings over the next decade with only 13 filled from labor force growth. The largest expected shortages include:

- *Registered Nurses* (–2,412)
- *General and Operations Managers* (–1,675)
- *Heavy and Tractor-Trailer Truck Drivers* (–1,415)
- *First-Line Supervisors of Retail Sales Workers* (–1,415)
- *First-Line Supervisors of Office and Administrative Support Workers* (–1,185)

Occupational Group and Industry Cluster Gaps

The 34 most In-Demand Occupations are shown below by occupational group and by industry cluster. Each of these occupations are expected to fall short of industry demand by at least 2,000 workers over the next 10 years. Together, these 34 occupations account for 80% of the projected gap for all Top Occupations. Occupations in italics span multiple industry clusters. They will be further evaluated to determine if there are workforce retention, expansion, or attraction strategies that can help employers close the projected labor force gap.

Gaps by Occupational Group

The 34 occupations span 12 occupational clusters. Management occupations accounted for the largest portion of the projected labor force gap, with an estimated shortfall of 26,052 workers over the next 10 years. Other large occupational group gaps include Business and Financial Operations (12% of the gap), and Sales and Related Occupations (11%). Occupations in bold span multiple industry clusters.

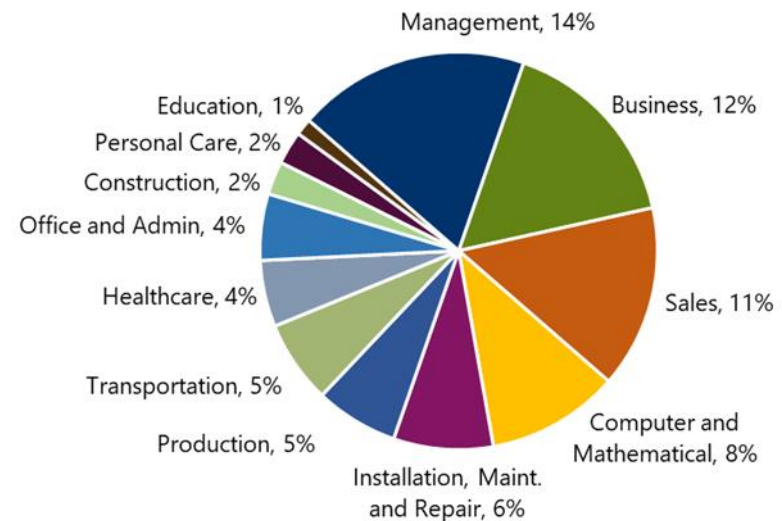
Management Occupations (SOC 11):

- *General and Operations Managers*
- *Computer and Information Systems Managers*
- *Financial Managers*
- **Construction Managers**
- **Medical and Health Services Managers**
- *Personal Service Managers, All Other; Entertainment and Recreation Managers; and Managers, All Other*

Business and Financial Operations (SOC 13):

- **Buyers and Purchasing Agents**
- *Human Resources Specialists*
- **Management Analysts**
- *Market Research Analysts and Marketing Specialists*
- *Project Management Specialists and Business Operations Specialists, All Other*
- *Accountants and Auditors*

Share of the Projected Labor Force Gap by Occupational Sector



Source: Emsi and Camoin Associates

Computer and Mathematical (SOC 15):

- *Computer Systems Analysts*
- *Computer User Support Specialists*
- *Software Developers and Software Quality Assurance Analysts and Testers*

Educational Instruction and Library Occupations (SOC 25):

- *Self-Enrichment Teachers*

Healthcare Practitioners and Technical Occupations (SOC 29):

- *Registered Nurses*

Personal Care and Service Occupations (SOC 39):

- *Exercise Trainers and Group Fitness Instructors*

Sales and Related Occupations (SOC 41):

- *First-Line Supervisors of Retail Sales Workers*
- *Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel*
- *Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products*

Office and Administrative Support Occupations (SOC 43):

- *First-Line Supervisors of Office and Administrative Support Workers*

Construction and Extraction Occupations (SOC 47):

- *First-Line Supervisors of Construction Trades and Extraction Workers*
- *Carpenters*
- *Electricians*
- *Plumbers, Pipefitters, and Steamfitters*

Installation, Maintenance, and Repair Occupations (SOC 49):

- *First-Line Supervisors of Mechanics, Installers, and Repairers*
- *Heating, Air Conditioning, and Refrigeration Mechanics and Installers*
- *Industrial Machinery Mechanics*
- *Maintenance and Repair Workers, General*

Production Occupations (SOC 51):

- *First-Line Supervisors of Production and Operating Workers*
- *Inspectors, Testers, Sorters, Samplers, and Weighers*
- *Computer Numerically Controlled Tool Operators*

Transportation and Material Moving Occupations (SOC 53):

- *Heavy and Tractor-Trailer Truck Drivers*

Gaps by Industry Cluster

The In-Demand Occupations are shown by industry cluster below; italicized occupations span multiple industry clusters. This information can be used to develop sector strategies by stakeholders to fill workforce gaps and to identify cross-sector opportunities for collaboration.



Healthcare Industry Cluster

- Registered Nurses
- Medical and Health Services Managers
- *First-Line Supervisors of Office and Admin. Support*
- *Human Resources Specialists*
- *Project Management Specialists and Business Operations Specialists, All Other*



Manufacturing Industry Cluster

- Industrial Machinery Mechanics
- Inspectors, Testers, Sorters, Samplers, and Weighers
- CNC Tool Operators
- First-Line Supervisors of Production Workers
- *Computer and Information Systems Managers*
- *Computer Systems Analysts*
- *Electricians*
- *Financial Managers*
- *Human Resources Specialists*
- *Market Research Analysts and Marketing Specialists*
- *Project Management Specialists and Business Operations Specialists, All Other*
- *Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products*



Hospitality Industry Cluster

- *Software Developers and Software Quality Assurance Analysts and Testers*

- Exercise Trainers and Group Fitness Instructors
- Self-Enrichment Teachers
- Maintenance and Repair Workers, General
- First-Line Supervisors of Mechanics, Installers, and Repairers
- First-Line Supervisors of Retail Sales Workers
- *Accountants and Auditors*
- *Financial Managers*
- *First-Line Supervisors of Office and Administrative Support Workers*
- *General and Operations Managers*
- *Human Resources Specialists*
- *Market Research Analysts and Marketing Specialists*
- *Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other*
- *Project Management Specialists and Business Operations Specialists, All Other*
- *Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel*



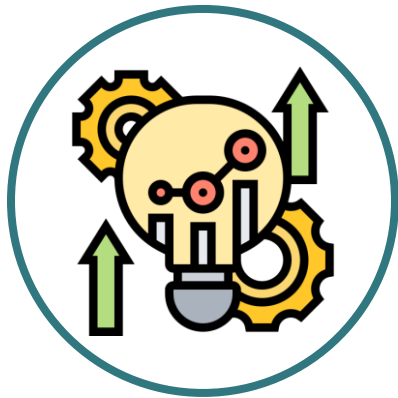
Construction Industry Cluster

- Heating, Air Conditioning, and Refrigeration Mechanics and Installers
- Heavy and Tractor-Trailer Truck Drivers
- Plumbers, Pipefitters, and Steamfitters
- Carpenters
- Construction Managers
- First-Line Supervisors of Construction Trades and Extraction Workers
- *Accountants and Auditors*
- *Electricians*
- *General and Operations Managers*
- *Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other*
- *Project Management Specialists and Business Operations Specialists, All Other*
- *Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel*
- *Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products*

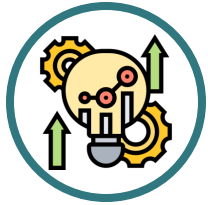


Technology Industry Cluster

- Computer User Support Specialists
- Management Analysts
- Buyers and Purchasing Agents
- *Computer and Information Systems Managers*
- *Computer Systems Analysts*
- *Financial Managers*
- *General and Operations Managers*
- *Human Resources Specialists*
- *Project Management Specialists and Business Operations Specialists, All Other*
- *Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel*
- *Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products*
- *Software Developers and Software Quality Assurance Analysts and Testers*



5. STRATEGIES TO BRIDGE WORKFORCE GAPS



Strategies

Purpose: This section identifies how the State of New Hampshire, and its partners can work across economic development, workforce, and educational networks to address the significant workforce gaps for in-demand occupations.

Key Takeaways

Chapters 1- 4 uncovered the most pressing workforce challenges facing New Hampshire in the coming decade. To overcome systemic challenges and demographic shifts in New Hampshire's economy, the State will need to take a collaborative, multi-disciplinary approach to fill unmet demand in the top occupations. While some of this work is already being done at various levels throughout the state, a comprehensive and coordinated effort among partners will be necessary to enact meaningful gains. This includes efforts in two primary categories of strategies: growing from within the State and attracting from outside the State.

Growing From Within the State

These are strategies that are targeted at the current residents and workforce of New Hampshire, focusing on adapting the skills and guiding career pathways with institutional partners like workforce development leaders and educational institutions.

- **Diversify the workforce** – Expand the pool of existing workers within the State that are not currently participating in each occupation. Efforts to recruit in underrepresented demographics would expand the labor pool for these occupations. Strategies could include expanding demographics for marketing, employer/HR education, incentive programs (such as sign-on bonuses or tax credits for employers who diversify their hiring), and/or education/training institution coordination for student recruitment.
- **Transfer skills** – Skills overlap between occupations in ways that are not always evident based on credentials, work experience, or qualifications. Understanding which occupations would be a good match based on skills (and also provide an opportunity for advancement for employees) will help employers/HR/workforce development think outside the box when they are considering applicants for in-demand positions. Skills transferability is also relevant to individuals transitioning from military positions to the civilian workforce. The Department of Military Affairs and Veterans Services, which provides Transition and Career Resources for Military/Veterans, will be a valuable partner moving forward with the data from this report. Understanding both the skillsets of the individuals as well as the motivations that might drive them to stay within the state could be a critical piece to supporting the state's economy while also supporting veterans. Throughout the northeast, there are other military sites with transitional programs, like Fort Drum in Watertown, which could also be partners in veteran retention and attraction.
- **Increase training pipeline** – For occupations that have existing training programs but are not currently producing enough graduates, the State should work with its training partners to increase capacity and retention. This also overlaps with the workforce diversification strategy, as education partners should be trying to market/appeal to more diverse students. Partners should also be asked to evaluate their career pathways to ensure a good pipeline of workers.

- **Increase state-wide graduate retention** – Currently, only about 71% of graduates remain in New Hampshire after finishing their degree. This is a population that has built a community in and around their schools and ought to be primed to remain in State, given adequate job opportunities.
- **Promote and train existing employees** – Upskilling and promoting the existing workforce supports a business’s resiliency and can require fewer resources than a recruitment effort. Resources that incentivize employer investment in the workforce – including on-the-job training programs, credentials, certifications, internships, and apprenticeships – can contribute to building the skillsets of existing employees.
- **Showcasing workforce opportunities for the trades** – Analysis of the top occupations across the State shows that a four-year degree is not necessary to obtain a position that has a career path and quality wages. Continuing to promote messaging across all levels of education with data-driven messages about the potential for alternative pathways will be important to shifting perceptions about the value of training certificates and associates degrees.
- **Educate employers about long-term labor force trends** – New Hampshire’s (and New England and the nation, more broadly) demographic shifts have significant implications for who will be filling the next generation of jobs. While much of this data is publicly available, interpreting exactly what this means for employers and the timeline that it will impact their businesses will be critical for proactive planning.
- **Collaborate and prioritize other sectors that increase participation across different careers**– The pandemic has forced economic development stakeholders and leaders to expand their purview of what impacts the ability of the workforce to find and retain quality jobs. Sectors that were once relegated to only social issues have proven to be critical indicators for economic prosperity. As workforce retention and attraction strategies are implemented at the State level, the following topics apply across sectors and will also require ongoing attention from a consortium of partners.
 - Expand childcare to improve parents’ ability to participate in the labor force
 - Encourage summer jobs and apprenticeships for youth, particularly those not on a college track
 - Evaluate transportation systems and other barriers to participating in the workforce
 - Consider non-traditional candidates, including those with criminal records and part-time, seasonal, and migrant workers
 - Education/housing/childcare/transportation credits or vouchers for workforce retention

Attracting From Outside the State

Shifting demographics and population decline mean that attraction into the State will be necessary to fill some of the most critical jobs to the State’s economy. These strategies will be more applicable to workers with high levels of economic mobility, meaning they can pick up and leave their current location for another position. Attracting from outside the state could also refer to remote recruitment, or filling jobs with individuals who are qualified for the positions but may not live or want to relocate to New Hampshire.

- **Attract and Retain Commuters** – New Hampshire is a net exporter of labor, particularly among its higher-paying jobs (see Appendix I). The State should market in high-inflow markets to convince commuters to either stay in New Hampshire for work or to

commute there instead. Given the low wages relative to high-inflow markets in the Boston area, the State should educate employers about the labor market and consider incentive programs for workers and/or employers to make the financial decision to work in New Hampshire more favorable. Other non-financial benefits should be considered and messaged as well, such as reduced commute time, quality of life, school systems, taxes, etc., where applicable.

- **Attract Workers** – In cases where there are large concentrations of workers in New Hampshire's In-Demand Occupations in other MSAs, the State should target marketing to attract out-of-state workers to relocate. This is most likely to be successful in MSAs that are in close proximity and/or where New Hampshire jobs pay considerably more. Attracting from outside the state could also refer to remote recruitment, or filling jobs with individuals who are qualified for the positions but may not live or want to relocate to New Hampshire. The State should consider moving assistance stipends or work with employers to provide bonuses, training credits, tax incentives etc. to incentivize workers to move. See the following population attraction programs, some of which include incentives for remote workers: [ThinkVermont](#), [Make My Move](#), [Life Works Here](#), [Remote Tucson](#), [Movers and Shakas](#).

Diversify Workforce

Strategies and marketing to appeal to a broader pool of candidates can help companies attract talent. “Job seekers look for an inclusive workplace when looking for their next career move. More than 3 out of 4 job seekers and employees (76%) report that a diverse workforce is an important factor when evaluating companies and job offers.”⁷ Numerous studies have outlined the benefits of promoting diversity and inclusion in the workplace, including:⁸

- Attracting a broader pool of talent
- Improving employee satisfaction
- Reduction in turnover
- Producing better decisions
- Improving company performance
- Promoting innovation
- Increasing customer insight
- Improving company image

While all these benefits are relevant to businesses in New Hampshire, the focus of this analysis is on increasing the pool of potential applicants for openings in the In-Demand Top Occupations. These occupations have been evaluated based on the level of inclusion within the workforce in terms of race and sex. Occupations that do not reflect the overall demographics of the State's workforce should be targeted at the state, regional, industry, and business levels to encourage workforce diversification. The inclusion ratio compares the share of demographics in each In-Demand Occupation to the share of demographics across all jobs. An inclusion ratio of 1.00 means the demographics of the occupation are perfectly representative of the overall workforce. A ratio above 1.00 means the demographic is overrepresented in the occupation, while a ratio less than 1.00 indicates an occupation in which the demographic is underrepresented in the occupation.

⁷ [Recruiting a Diverse Workforce | Glassdoor for Employers](#)

⁸ [Diversity during COVID-19 still matters | McKinsey](#); [Is there a payoff from top-team diversity? | McKinsey](#); [New Research: Diversity + Inclusion = Better Decision Making At Work \(forbes.com\)](#); [Diversity and Inclusion Is A Business Strategy, Not An HR Program – JOSH BERSIN](#); [Recruiting a Diverse Workforce | Glassdoor for Employers](#); [Why Diversity and Inclusion Matter \(Quick Take\) | Catalyst](#)

Race

Racial diversity is low in New Hampshire, with 89% of the population identifying as white. This is reflected in its workforce, with 88% of all workers identifying as white. Inclusion ratios for In-Demand Occupations by race are shown below, with the least inclusive occupations shaded in grey, while inclusive ones are in bold.

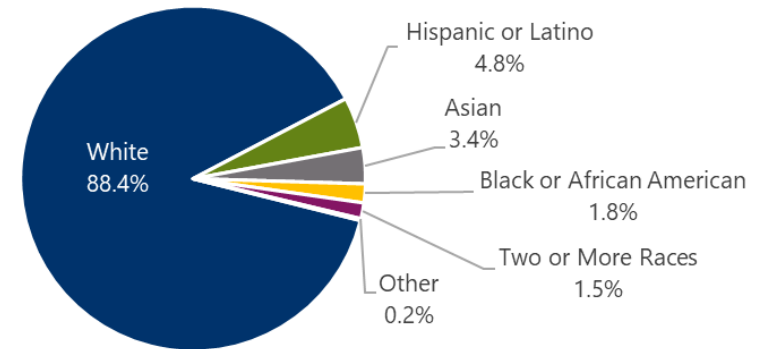
None of the In-Demand Occupations are inclusive across all races; however, a few are inclusive or have an overrepresentation of non-white races (generally due to high ratios for Asian workers):

- *Heavy and Tractor-Trailer Truck Drivers*
- *Management Analysts*
- *Computer User Support Specialists*
- *Inspectors, Testers, Sorters, Samplers, and Weighers (the most inclusive of the In-Demand Occupations across the races)*
- *Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other*
- *Computer Systems Analysts*
- *Software Developers and Software Quality Assurance Analysts and Testers*

Efforts to diversify all the In-Demand Occupations will increase the pool of talent employers can draw upon; however, the following occupations are particularly lacking in diversity:

- *First-Line Supervisors of Mechanics, Installers, and Repairers*
- *Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products*
- *General and Operations Managers*
- *First-Line Supervisors of Construction Trades and Extraction Workers*
- *Heating, Air Conditioning, and Refrigeration Mechanics and Installers*
- *Registered Nurses*
- *Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel*
- *Electricians*
- *Financial Managers*
- *Buyers and Purchasing Agents*
- *First-Line Supervisors of Office and Administrative Support Workers*
- *Industrial Machinery Mechanics*
- *Medical and Health Services Managers*
- *Maintenance and Repair Workers, General*
- *Computer Numerically Controlled Tool Operators*
- *Plumbers, Pipefitters, and Steamfitters*

New Hampshire Workforce Distribution by Race



Source: Emsi

Inclusion Ratios for In-Demand Occupations by Race

SOC	Occupation	White	Non-White Workers				Total	
			Hispanic or Latino	Asian	Black or African American	Two or More Races		Other
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	0.87	0.37	5.63	0.39	0.78	0.44	1.96
15-1211	Computer Systems Analysts	0.95	0.48	3.16	0.73	0.93	0.55	1.36
11-9198	Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	0.96	1.63	0.72	1.24	1.65	0.54	1.29
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	0.96	1.26	1.59	1.24	0.73	1.03	1.28
15-1232	Computer User Support Specialists	0.98	0.68	1.91	0.92	1.01	0.78	1.12
13-1111	Management Analysts	0.99	0.67	1.59	1.08	1.26	0.69	1.08
53-3032	Heavy and Tractor-Trailer Truck Drivers	0.99	1.41	0.32	1.80	0.73	1.00	1.06
47-2031	Carpenters	1.00	1.58	0.14	0.68	1.20	0.86	0.96
25-3021	Self-Enrichment Teachers	1.01	0.66	1.20	0.83	1.46	0.36	0.94
11-3021	Computer and Information Systems Managers	1.01	0.38	2.14	0.44	0.68	0.52	0.94
13-1198	Project Management Specialists and Business Operations Specialists, All Other	1.01	0.63	1.33	0.78	1.16	0.53	0.92
51-1011	First-Line Supervisors of Production and Operating Workers	1.01	1.04	0.95	0.84	0.52	1.01	0.92
11-9021	Construction Managers	1.02	1.23	0.22	0.73	1.48	0.45	0.88
13-1071	Human Resources Specialists	1.02	0.76	0.91	1.08	0.95	0.76	0.88
41-1011	First-Line Supervisors of Retail Sales Workers	1.02	0.92	0.76	0.84	0.90	1.15	0.86
13-2011	Accountants and Auditors	1.02	0.43	1.60	0.67	0.66	0.47	0.84
13-1161	Market Research Analysts and Marketing Specialists	1.03	0.64	1.15	0.55	0.87	0.42	0.80
39-9031	Exercise Trainers and Group Fitness Instructors	1.03	0.75	0.43	1.05	1.21	0.73	0.76
47-2152	Plumbers, Pipefitters, and Steamfitters	1.03	1.13	0.13	0.67	0.82	1.48	0.74
51-9161	Computer Numerically Controlled Tool Operators	1.04	0.68	0.99	0.54	0.56	0.50	0.73
49-9043	Maintenance and Repair Workers, General	1.04	0.84	0.59	0.57	0.67	0.00	0.69
11-9111	Medical and Health Services Managers	1.04	0.54	0.75	0.95	0.72	0.73	0.69
49-9041	Industrial Machinery Mechanics	1.04	0.86	0.52	0.59	0.55	0.93	0.68
43-1011	First-Line Supervisors of Office and Administrative Support Workers	1.04	0.68	0.60	0.75	0.76	0.84	0.68
13-1028	Buyers and Purchasing Agents	1.05	0.61	0.75	0.57	0.66	0.68	0.65
11-3031	Financial Managers	1.05	0.50	0.95	0.51	0.62	0.49	0.65
47-2111	Electricians	1.05	0.88	0.21	0.63	0.83	1.18	0.64
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	1.05	0.76	0.41	0.78	0.54	0.77	0.64
29-1141	Registered Nurses	1.05	0.33	1.02	0.67	0.61	0.69	0.62
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	1.06	0.77	0.18	0.54	0.68	0.98	0.55
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	1.06	0.77	0.11	0.38	0.73	0.83	0.51
11-1021	General and Operations Managers	1.06	0.47	0.55	0.39	0.61	0.70	0.50
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	1.07	0.52	0.45	0.29	0.44	0.40	0.45
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	1.07	0.52	0.24	0.38	0.59	0.88	0.43

Source: Emsi; "Other" includes American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander

Sex

The sexes are evenly balanced in the State; however, the In-Demand Occupations are skewed towards males. The table below shows the inclusion ratios for the In-Demand Occupations by sex. Occupations shaded in grey have the least balance between the sexes, while inclusive ones are in bold.

The most balanced occupations in terms of sex are *Management Analysts* and *Project Management Specialists and Business Operations Specialist, All Other*.

Out of the 34 In-Demand Occupations, 23 have a ratio below 1.00 for females. The occupations that are heavily staffed by males tend to be more “traditional” jobs in the trades and manufacturing. The following occupations are particularly lacking in female inclusion:

- *Heating, Air Conditioning, and Refrigeration Mechanics and Installers*
- *Plumbers, Pipefitters, and Steamfitters*
- *Carpenters*
- *Electricians*
- *Industrial Machinery Mechanics*
- *First-Line Supervisors of Construction Trades and Extraction Workers*
- *Maintenance and Repair Workers, General*
- *Heavy and Tractor-Trailer Truck Drivers*
- *Construction Managers*
- *First-Line Supervisors of Mechanics, Installers, and Repairers*
- *Computer Numerically Controlled Tool Operators*
- *Software Developers and Software Quality Assurance Analysts and Testers*
- *First-Line Supervisors of Production and Operating Workers*
- *Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products*
- *Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other*
- *Computer User Support Specialists*
- *Computer and Information Systems Managers*
- *General and Operations Managers*
- *Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel*

The following occupations are heavily dominated by females:

- *Registered Nurses*
- *Human Resources Specialists*
- *Medical and Health Services Managers*
- *First-Line Supervisors of Office and Administrative Support Workers*
- *Self-Enrichment Teachers*

To expand the potential labor pool, efforts should be made to make these occupations and job environments more appealing to the opposite sex.

Inclusion Ratios for In-Demand Occupations by Sex

SOC	Occupation	Males	Females
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	1.96	0.02
47-2152	Plumbers, Pipefitters, and Steamfitters	1.96	0.03
47-2031	Carpenters	1.96	0.03
47-2111	Electricians	1.95	0.04
49-9041	Industrial Machinery Mechanics	1.93	0.06
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	1.92	0.07
49-9043	Maintenance and Repair Workers, General	1.91	0.08
53-3032	Heavy and Tractor-Trailer Truck Drivers	1.90	0.09
11-9021	Construction Managers	1.88	0.11
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	1.87	0.12
51-9161	Computer Numerically Controlled Tool Operators	1.80	0.19
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	1.58	0.42
51-1011	First-Line Supervisors of Production and Operating Workers	1.55	0.44
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	1.51	0.49
11-9198	Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	1.47	0.52
15-1232	Computer User Support Specialists	1.43	0.57
11-3021	Computer and Information Systems Managers	1.38	0.61
11-1021	General and Operations Managers	1.38	0.62
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	1.32	0.68
15-1211	Computer Systems Analysts	1.24	0.76
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	1.14	0.86
41-1011	First-Line Supervisors of Retail Sales Workers	1.10	0.90
13-1111	Management Analysts	1.06	0.94
13-1198	Project Management Specialists and Business Operations Specialists, All Other	0.94	1.06
13-1028	Buyers and Purchasing Agents	0.91	1.09
11-3031	Financial Managers	0.89	1.11
13-1161	Market Research Analysts and Marketing Specialists	0.81	1.19
39-9031	Exercise Trainers and Group Fitness Instructors	0.77	1.23
13-2011	Accountants and Auditors	0.77	1.24
25-3021	Self-Enrichment Teachers	0.65	1.35
43-1011	First-Line Supervisors of Office and Administrative Support Workers	0.62	1.38
11-9111	Medical and Health Services Managers	0.54	1.47
13-1071	Human Resources Specialists	0.52	1.48
29-1141	Registered Nurses	0.18	1.83

Source: Emsi

Transfer Skills

Skills transferability identifies the occupations that are closely related to other occupations, meaning a worker could easily move between the two occupations based on their skills. The table below shows the occupations that could most easily be drawn upon to meet the needs of the In-Demand Occupations. These transferrable occupations have a compatibility index of 95 or above, meaning the two occupations are very similar in terms of skills, knowledge and abilities based on O*NET data. This data can be used to both help employers find workers with skills outside of their standard occupations for the industry and can also help job seekers and workforce development providers find career opportunities and paths.

Transferable Occupations for In-Demand Occupations

SOC	In-Demand Occupation <i>Transferable Occupations</i>
11-1021	General and Operations Managers <i>Funeral Service Managers</i> <i>Public Relations and Fundraising Managers</i> <i>Purchasing Managers</i> <i>Purchasing Agents, Except Wholesale, Retail, and Farm Products</i> <i>Storage and Distribution Managers</i> <i>Water Resource Specialists</i>
11-3021	Computer and Information Systems Managers <i>Database Administrators</i>
11-3031	Financial Managers <i>Compliance Managers</i> <i>Financial Examiners</i> <i>First-Line Supervisors of Non-Retail Sales Workers</i> <i>Loan Counselors</i> <i>Personal Financial Advisors</i> <i>Sales Agents, Securities and Commodities</i>
11-9111	Medical and Health Services Managers <i>Compensation, Benefits, and Job Analysis Specialists</i>
13-1028	Buyers and Purchasing Agents <i>Energy Brokers</i> <i>Sales Agents, Financial Services</i> <i>Securities and Commodities Traders</i>
13-1111	Management Analysts <i>Compensation, Benefits, and Job Analysis Specialists</i> <i>Market Research Analysts and Marketing Specialists</i>

SOC	In-Demand Occupation <i>Transferable Occupations</i>
13-1161	Market Research Analysts and Marketing Specialists <i>Sales Agents, Securities and Commodities</i> <i>Survey Researchers</i>
13-2011	Accountants and Auditors <i>Loan Counselors</i> <i>Loan Interviewers and Clerks</i> <i>Tax Examiners and Collectors, and Revenue Agents</i> <i>Tax Preparers</i>
15-1211	Computer Systems Analysts <i>Database Architects</i> <i>Software Quality Assurance Engineers and Testers</i> <i>Web Developers</i>
25-3021	Self-Enrichment Teachers <i>Home Economics Teachers, Postsecondary</i> <i>Interviewers, Except Eligibility and Loan</i> <i>Kindergarten Teachers, Except Special Education</i> <i>Library Technicians</i> <i>Teacher Assistants</i>
29-1141	Registered Nurses <i>Critical Care Nurses</i> <i>Licensed Practical and Licensed Vocational Nurses</i> <i>Veterinarians</i>
41-1011	First-Line Supervisors of Retail Sales Workers <i>Animal Trainers</i> <i>Cooks, Fast Food</i> <i>Spa Managers</i>

To qualify as a transferable, the occupation had to (1) not be another In-Demand Occupation, (2) have earnings lower than the In-Demand Occupation, and (3) have a skills compatibility index of at least 95
Source: Emsi

Transferable Occupations for In-Demand Occupations, Continued

SOC	In-Demand Occupation <i>Transferable Occupations</i>
43-1011	First-Line Supervisors of Office and Administrative Support Workers <i>Animal Trainers Compensation, Benefits, and Job Analysis Specialists Loan Interviewers and Clerks Loan Officers</i>
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers <i>Janitors and Cleaners, Except Maids and Housekeeping Cleaners</i>
47-2031	Carpenters <i>Carpet Installers Drywall and Ceiling Tile Installers Helpers--Carpenters Mechanical Door Repairers Pipelayers Roofers Septic Tank Servicers and Sewer Pipe Cleaners Solar Photovoltaic Installers Weatherization Installers and Technicians Welders, Cutters, and Welder Fitters</i>
47-2111	Electricians <i>Refrigeration Mechanics and Installers Solar Photovoltaic Installers Wind Turbine Service Technicians</i>
47-2152	Plumbers, Pipefitters, and Steamfitters <i>Aircraft Structure, Surfaces, Rigging, and Systems Assemblers Bus and Truck Mechanics and Diesel Engine Specialists Carpet Installers Mechanical Door Repairers Solar Photovoltaic Installers Weatherization Installers and Technicians</i>
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers <i>Solar Photovoltaic Installers</i>
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers <i>Weatherization Installers and Technicians</i>
49-9041	Industrial Machinery Mechanics <i>Computer-Controlled Machine Tool Operators, Metal and Plastic Electrical and Electronics Installers and Repairers, Transportation Equipment Farm Equipment Mechanics and Service Technicians Geothermal Technicians Maintenance Workers, Machinery Millwrights Mobile Heavy Equipment Mechanics, Except Engines Motorboat Mechanics and Service Technicians Rail Car Repairers Wind Turbine Service Technicians</i>

SOC	In-Demand Occupation <i>Transferable Occupations</i>
49-9071	Maintenance and Repair Workers, General <i>Automotive Glass Installers and Repairers Bicycle Repairers Control and Valve Installers and Repairers, Except Mechanical Door Electrical and Electronics Installers and Repairers, Transportation Equipment Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters Mobile Heavy Equipment Mechanics, Except Engines Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic Tire Repairers and Changers</i>
51-1011	First-Line Supervisors of Production Workers <i>Agricultural Inspectors Janitors and Cleaners, Except Maids and Housekeeping Cleaners</i>
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers <i>Electromechanical Equipment Assemblers Etchers and Engravers Executive Secretaries and Executive Administrative Assistants Fabric and Apparel Patternmakers Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic Machine Feeders and Offbearers Milling and Planing Machine Setters, Operators, and Tenders, Metal and Plastic Mixing and Blending Machine Setters, Operators, and Tenders Machinists Ophthalmic Laboratory Technicians Paper Goods Machine Setters, Operators, and Tenders Rolling Machine Setters, Operators, and Tenders, Metal and Plastic Semiconductor Processors Textile Cutting Machine Setters, Operators, and Tenders Timing Device Assemblers and Adjusters Tool Grinders, Filers, and Sharpeners</i>
51-9161	CNC Tool Operators <i>Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic</i>
53-3032	Heavy and Tractor-Trailer Truck Drivers <i>Drywall and Ceiling Tile Installers Excavating and Loading Machine and Dragline Operators Light Truck or Delivery Services Drivers Segmental Pavers Tank Car, Truck, and Ship Loaders Taxi Drivers and Chauffeurs</i>

To qualify as a transferable, the occupation had to (1) not be another In-Demand Occupation, (2) have earnings lower than the In-Demand Occupation, and (3) have a skills compatibility index of at least 95

Source: Emsi

Increase Training Pipeline

One avenue for addressing workforce shortages is to increase the in-state supply through educational and training programs. For each of the In-Demand Occupations there is at least one academic program that “directly prepares” students for the occupation. Emsi uses this education-occupation crosswalk to provide annual completions by occupation. Multiplying 2010–2020 average annual occupational completions to get projected 2022–2032 completions and comparing these to projected annual openings for each occupation over the same period gives an idea of potential future workforce surpluses and shortages. Completions were adjusted by a postsecondary graduate retention rate of 71%, based on estimates from the National Center for Education Statistics to account for graduates leaving the state upon completion of their degree.⁹

There are projected training shortfalls in nearly half (16 of 34) of the In-Demand Occupations, with the largest being *Heavy and Tractor-Trailer Truck Drivers*, *Sales Representatives of Services*, and *Carpenters*. Most occupations require less than a bachelor’s degree; apprenticeships or a certificate or associate’s degree from a community college would be sufficient to qualify individuals for entry-level positions. Some trades may require union membership to pursue an apprenticeship, although many are offered through employers as well. The table to the right shows the In-Demand Occupations with training shortfalls, while the tables on the following pages outline the academic programs that “directly prepare” students for these occupations and the institutions and other options in New Hampshire that offer those programs.

State of New Hampshire In-Demand Occupation Training Pipeline: 2022–2032 Shortfalls

SOC	Occupation	Openings	Completions	Shortfall
53-3032	Heavy and Tractor-Trailer Truck Drivers	9,468	97	(9,371)
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	5,690	223	(5,467)
47-2031	Carpenters	5,274	69	(5,205)
47-2111	Electricians	4,051	245	(3,806)
49-9071	Maintenance and Repair Workers, General	5,234	1,444	(3,789)
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	3,772	297	(3,475)
51-9161	CNC Tool Operators	2,985	431	(2,553)
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	2,945	623	(2,322)
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	2,490	275	(2,215)
13-1028	Buyers and Purchasing Agents	2,319	374	(1,945)
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	9,706	8,590	(1,116)
49-9041	Industrial Machinery Mechanics	2,276	383	(1,893)
47-2152	Plumbers, Pipefitters, and Steamfitters	2,498	719	(1,779)
51-1011	First-Line Supervisors of Production Workers	3,024	1,604	(1,420)

Source: Emsi, Camoin Associates

⁹ NCES conducted a survey asking if respondents were ever employed in the same state as their bachelor’s degree-granting institution, within 12 months after degree completion. The portion for the Northeast was 71.0%, versus 76.6% nationally.

In-Demand Occupations Pipeline: Educational Programs and Institutions

SOC	Occupation	Entry-Level Educational Requirements	Educational Program	Institutions
53-3032	Heavy and Tractor-Trailer Truck Drivers	Postsecondary nondegree award	Truck and Bus Driver/Commercial Vehicle Operator and Instructor	White Mountains Community College, CDL school
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	High school diploma or equivalent	Retailing and Retail Operations; Selling Skills and Sales Operations	Plymouth State University, River Valley Community College, Southern New Hampshire University, on-the-job training
47-2031	Carpenters	High school diploma or equivalent	Carpentry/Carpenter	Manchester Community College, apprenticeship
47-2111	Electricians	High school diploma or equivalent	Electrician	Manchester Community College, apprenticeship
49-9071	Maintenance and Repair Workers, General	High school diploma or equivalent	Building/Property Maintenance	Apprenticeship, on-the-job training
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	High school diploma or equivalent	Quality Control Technology/Technician	Nashua Community College, on-the-job training
51-9161	CNC Tool Operators	High school diploma or equivalent	Machine Shop Technology/Assistant; Computer Numerically Controlled (CNC) Machinist Technology/CNC Machinist	Great Bay Community College, Nashua Community College, NHTI-Concord's Community College, River Valley Community College, apprenticeship
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	High school diploma or equivalent	Construction Trades, General; Mason/Masonry; Carpentry/Carpenter; Electrician; Building/Property Maintenance; Concrete Finishing/Concrete Finisher; Building/Home/Construction Inspection/Inspector; Drywall Installation/Drywaller; Glazier; Painting/Painter and Wall Coverer; Roofer; Building/Construction Site Mgmt./Manager; Carpet, Floor, and Tile Worker; Insulator; Building Construction Technology/Technician; Pipefitting/Pipefitter and Sprinkler Fitter; Plumbing Technology/Plumber; Well Drilling/Driller; Blasting/Blaster	Manchester Community College, NHTI-Concord's Community College
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	Postsecondary nondegree award	Heating, Ventilation, Air Conditioning and Refrigeration Engineering Technology/Technician; Heating, Air Conditioning, Ventilation and Refrigeration Maintenance Technology/Technician	InterCoast Career Institute, Manchester Community College, apprenticeship
13-1028	Buyers and Purchasing Agents	Bachelor's degree	Agricultural/Farm Supplies Retailing and Wholesaling; Wine Steward/Sommelier; Apparel and Textile Marketing Mgmt.; Sales, Distribution, and Marketing Operations, General; Merchandising and Buying Operations; General Merchandising, Sales, and Related Marketing Operations, Other; Fashion Merchandising; Apparel and Accessories Marketing Operations; Purchasing, Procurement/Acquisitions and Contracts Mgmt.	University of New Hampshire, Southern New Hampshire University

Source: Emsi, Camoin Associates

In-Demand Occupations Pipeline: Educational Programs and Institutions (continued)

SOC	Occupation	Entry-Level Educational Requirements	Educational Program	Institutions
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	Bachelor's degree	Artificial Intelligence; Information Technology; Informatics; Computer Programming/Programmer, General; Computer Programming, Specific Applications; Computer Programming, Vendor/Product Certification; Computer Game Programming; Computer Programming, Specific Platforms; Information Science/Studies; Computer Science; Modeling, Virtual Environments and Simulation; Cloud Computing; Computer Engineering, General; Computer Software Engineering; Computer Software Technology/Technician; Mathematics and Computer Science; Accounting and Computer Science; Economics and Computer Science; Linguistics and Computer Science; Data Science, General; Computer and Information Sciences, General; Computer Systems Analysis/Analyst; Computer Engineering Technology/Technician; Computer/Computer Systems Technology/Technician	Daniel Webster College, Dartmouth College, Franklin Pierce University, Granite State College, Great Bay Community College, Keene State College, Lakes Region Community College, Lebanon College, Manchester Community College, Nashua Community College, NHTI-Concord's community College, Mount Washington College, New England College, River Valley Community College, Rivier University, Saint Anselm College, Southern New Hampshire University, University of New Hampshire (main campus), White Mountains Community College
49-9041	Industrial Machinery Mechanics	High school diploma or equivalent	Industrial Mechanics and Maintenance Technology/Technician; Energy Systems Installation and Repair Technology/Technician; Hydroelectric Energy System Installation and Repair Technology/Technician; Geothermal Energy System Installation and Repair Technology/ Technician	Lakes Region Community College, White Mountains Community College, apprenticeship
47-2152	Plumbers, Pipefitters, and Steamfitters	High school diploma or equivalent	Pipefitting/Pipefitter and Sprinkler Fitter; Plumbing Technology/Plumber; Plumbing and Related Water Supply Services, Other	Apprenticeship
51-1011	First-Line Supervisors of Production Workers	High school diploma or equivalent	Operations Mgmt. and Supervision	Granite State College, New England College, Southern New Hampshire University

Source: Emsi, Camoin Associates

New Hampshire In-Demand Occupation Apprenticeship Programs

SOC	OccupationTitle	ProgName	County
53-3032	Truck Driver, Heavy (Alternate Title: Motor Transport Operator)	New Hampshire Motor Transport Association	Merrimack
47-2031	Carpenter	Waterline Industries Corporation	Rockingham
47-2111	Crane Electrician (Existing Title: Electrician [Ship & Boat])	Portsmouth Naval Shipyard	Rockingham
49-9071	Industrial Maintenance Repairer	Amphenol Printed Circuits, Inc.	Hillsborough
51-9061	Inspector, Precision	BAE Systems	Hillsborough
51-9161	Numerical Control Machinist Operator	Hypertherm, Inc.	Grafton
49-9021	Heating and Air Conditioning Mechanic and Installer	Palmer & Sicard, Inc.	Rockingham
49-9041	Industrial Machinist System Technician	Lindt & Sprüngli (USA)	Rockingham
47-2152	Marine Pipefitter (Existing Title: Pipe Fitter [Ship & Boat])	Portsmouth Naval Shipyard	Rockingham

Note: Includes programs whose status is "Awaiting Signatures" or "Registered" as of FY2021.

Source: U.S. Department of Labor, Employment and Training Administration

II. Attract and Retain Commuters

New Hampshire experiences net out-commuting of 32 of its 34 In-Demand Occupations; only *CNC Tool Operators* and *First-Line Supervisors of Retail Sales Workers* commute into the state in greater numbers than commute out. Helping out-commuters find in-state jobs or encouraging more out-of-state workers in In-Demand Occupations to work in New Hampshire would help alleviate shortages.

The table below shows 2021 statewide net commuting for each occupation with at least 200 net out-commuters, the largest county-level outflow, the largest net inflow county in New England, and a comparison of median wages in the New Hampshire county and in the inflow county. The largest net out-commuting counties tend to be Rockingham and Hillsborough, those nearest to Boston. Note that the data do not indicate where out-commuters are commuting to; in some cases, they likely live in one New Hampshire county and work in another. Thus, not all — or necessarily any — out-commuters work in the top destination county indicated. For all In-Demand Occupations with net out-commuting, the top destination for the occupation is either Suffolk County or Middlesex County in Massachusetts. Suffolk is home to Boston, and Middlesex neighbors it to the northwest and borders New Hampshire.

Higher wages and lower taxes and cost of living are likely major motivations for working in Massachusetts and living in New Hampshire. All out-commuting occupations pay higher wages in Massachusetts than in New Hampshire. For most of them, median wages are 15% to almost 70% higher in Massachusetts than in New Hampshire, with an average wage premium of 25%. According to Tax Foundation data, since 2000 Massachusetts has had on average the 15th highest state and local tax burden, while New Hampshire has averaged 37th. Between 2010 and 2020, the cost of living as measured by regional price parities, which compare buying power across states and metro areas, averaged 2.3% lower in New Hampshire than in Massachusetts, with housing 10.7% lower in New Hampshire. In 2020 the differences were 3.5% and 14.6% as New Hampshire became less expensive relative to Massachusetts over the decade.

Workers in occupations with smaller wage premiums might be willing to accept lower pay to avoid commuting across state lines. However, the State will have to find other ways to incentivize out-commuters earning larger wage premiums to work in New Hampshire.

Net Commuting of New Hampshire's In-Demand Occupations, 2021

SOC	Occupation	Statewide Net Commuters	Largest County Outflow	Top Destination	Median Wage in Destination	Median Wage in NH	Wage Difference
11-1021	General and Operations Managers	(1,525)	(504)	Suffolk County, MA	\$65.40	\$51.19	28%
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	(1,033)	(535)	Suffolk County, MA	\$59.72	\$50.17	19%
29-1141	Registered Nurses	(846)	(963)	Suffolk County, MA	\$48.15	\$35.97	34%
13-1198	Project Management Specialists and Business Operations Specialists, All Other	(671)	(324)	Suffolk County, MA	\$46.66	\$35.98	30%
47-2031	Carpenters	(596)	(208)	Middlesex County, MA	\$29.19	\$23.62	24%
13-2011	Accountants and Auditors	(580)	(247)	Suffolk County, MA	\$43.19	\$33.12	30%
47-2111	Electricians	(550)	(251)	Middlesex County, MA	\$33.32	\$26.84	24%
13-1111	Management Analysts	(546)	(239)	Suffolk County, MA	\$54.01	\$43.28	25%
11-3031	Financial Managers	(523)	(265)	Suffolk County, MA	\$74.87	\$60.55	24%
49-9071	Maintenance and Repair Workers, General	(492)	(166)	Suffolk County, MA	\$25.53	\$21.94	16%
13-1161	Market Research Analysts and Marketing Specialists	(420)	(172)	Suffolk County, MA	\$35.92	\$30.32	18%
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	(403)	(179)	Middlesex County, MA	\$45.12	\$31.92	41%
43-1011	First-Line Supervisors of Office and Administrative Support Workers	(383)	(174)	Suffolk County, MA	\$35.16	\$29.02	21%
47-2152	Plumbers, Pipefitters, and Steamfitters	(372)	(126)	Middlesex County, MA	\$37.73	\$26.10	45%
13-1071	Human Resources Specialists	(354)	(143)	Suffolk County, MA	\$38.00	\$30.30	25%
15-1232	Computer User Support Specialists	(289)	(151)	Suffolk County, MA	\$32.45	\$24.34	33%
11-3021	Computer and Information Systems Managers	(274)	(151)	Suffolk County, MA	\$81.41	\$66.79	22%
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	(260)	(107)	Suffolk County, MA	\$37.38	\$27.82	34%
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	(257)	(163)	Middlesex County, MA	\$37.35	\$31.32	19%
51-1011	First-Line Supervisors of Production and Operating Workers	(238)	(93)	Middlesex County, MA	\$35.15	\$34.69	1%
11-9111	Medical and Health Services Managers	(233)	(162)	Suffolk County, MA	\$63.01	\$49.01	29%
11-9021	Construction Managers	(226)	(96)	Suffolk County, MA	\$53.97	\$37.80	43%

Note: The top destination is the county in the region with the largest net in-migration. It is not necessarily the destination of all New Hampshire out-commuters for that occupation.

Source: Emsi

Attract Workers from Outside New England

Another strategy for closing the gap for In-Demand Occupations is to attract workers from out of state. The table below shows the MSAs where it may be feasible to draw workers from. These MSAs have a high concentration of In-Demand Occupations, with a sizable workforce, and lower median hourly earnings. Workers may be more likely to consider a move from relatively nearby MSAs (e.g. *CNC Tool Operators* in Lebanon, NH-VT and *First-Line Supervisors of Production and Operating Workers* and *Inspectors, Testers, Sorters, Samplers, and Weighers* in St. Mary's, PA) and/or ones that have large differences in earnings (e.g. *Management Analysts* in Tallahassee, FL and Sacramento-Roseville-Folsom, CA).

Top MSAs for In-Demand Occupations

SOC	Occupation	New Hampshire		Metropolitan Statistical Area				Difference in Cost of Living Adjusted Earnings	
		Median Hourly Earnings	Cost of Living Adjustment	Name	2021 Jobs	2021 LQ	Median Hourly Earnings		Cost of Living Adjustment
13-1111	Management Analysts	\$44.14	\$36.63	Tallahassee, FL	5,655	4.8	\$23.83	\$23.57	\$13.06
				Sacramento-Roseville-Folsom, CA	24,275	3.6	\$36.88	\$27.12	\$9.51
25-3021	Self-Enrichment Teachers	\$23.63	\$19.61	Heber, UT	595	5.7	\$19.44	\$16.08	\$3.53
				Corvallis, OR	313	3.1	\$19.77	\$16.29	\$3.32
39-9031	Exercise Trainers and Group Fitness Instructors	\$22.56	\$18.72	Sierra Vista-Douglas, AZ	318	3.6	\$16.66	\$15.96	\$2.76
				Edwards, CO	253	3.4	\$18.32	\$15.32	\$3.40
				Glenwood Springs, CO	305	3.2	\$18.88	\$14.66	\$4.06
49-9041	Industrial Machinery Mechanics	\$27.28	\$22.64	Albertville, AL	447	4.2	\$20.51	\$22.20	\$0.44
51-1011	First-Line Supervisors of Production and Operating Workers	\$33.11	\$27.48	Dalton, GA	1,177	4.5	\$24.58	\$26.66	\$0.82
				St. Marys, PA	219	4.0	\$27.23	\$26.03	\$1.45
				St. Marys, PA	241	4.8	\$16.25	\$15.54	\$2.35
				Carbondale-Marion, IL	891	4.1	\$11.49	\$11.92	\$5.97
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	\$21.55	\$17.89	Calhoun, GA	374	4.0	\$16.00	\$17.30	\$0.59
				Fort Payne, AL	355	4.0	\$13.59	\$15.23	\$2.66
				Talladega-Sylacauga, AL	407	3.6	\$13.88	\$15.27	\$2.62
				Scottsboro, AL	208	3.5	\$13.76	\$15.04	\$2.85
				Albertville, AL	514	3.4	\$13.54	\$14.65	\$3.24
51-9161	CNC Tool Operators	\$21.43	\$17.78	Morristown, TN	674	3.4	\$15.20	\$16.67	\$1.22
				Lebanon, NH-VT	566	5.4	\$21.16	\$17.43	\$0.35
				Ogden-Clearfield, UT	1,121	4.0	\$18.17	\$17.49	\$0.29
				Jackson, MI	205	3.7	\$15.76	\$17.55	\$0.23
53-3032	Heavy and Tractor-Trailer Truck Drivers	\$23.15	\$19.21	Murray, KY	1,078	4.7	\$16.80	\$18.26	\$0.95
				Harrison, AR	995	4.3	\$15.81	\$17.53	\$1.68
				Portales, NM	317	3.2	\$18.69	\$18.43	\$0.78

Includes MSAs with an LQ above 3.0, more than 200 jobs, and with lower cost of living adjusted median hourly wages than New Hampshire

Source: Emsi



BEA

State of New Hampshire Workforce Assessment

Summary of Strategies

Summary of Strategies For Bridging the Gap for In-Demand Occupations

Occupations shaded in light grey span multiple industry clusters

SOC	Occupation	Workforce Diversification	Skills Transferability	Increase Training Pipeline	Attract or Retain Commuters	Attract Workers
11-1021	General and Operations Managers	Y	Y		Y	
11-3021	Computer and Information Systems Managers	Y	Y		Y	
11-3031	Financial Managers	Y	Y		Y	
11-9021	Construction Managers	Y			Y	
11-9111	Medical and Health Services Managers	Y	Y		Y	
11-9198	Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	Y				
13-1028	Buyers and Purchasing Agents	Y	Y	Y		
13-1071	Human Resources Specialists	Y			Y	
13-1111	Management Analysts		Y		Y	Y
13-1161	Market Research Analysts and Marketing Specialists		Y		Y	
13-1198	Project Management Specialists and Business Operations Specialists, All Other				Y	
13-2011	Accountants and Auditors		Y		Y	
15-1211	Computer Systems Analysts		Y			
15-1232	Computer User Support Specialists	Y			Y	
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	Y		Y	Y	
25-3021	Self-Enrichment Teachers	Y	Y			Y
29-1141	Registered Nurses	Y	Y		Y	
39-9031	Exercise Trainers and Group Fitness Instructors					Y
41-1011	First-Line Supervisors of Retail Sales Workers		Y			
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	Y		Y	Y	
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	Y			Y	
43-1011	First-Line Supervisors of Office and Administrative Support Workers	Y	Y		Y	
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	Y	Y	Y	Y	
47-2031	Carpenters	Y	Y	Y	Y	
47-2111	Electricians	Y	Y	Y	Y	
47-2152	Plumbers, Pipefitters, and Steamfitters	Y	Y	Y	Y	
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	Y	Y			
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	Y	Y	Y		
49-9041	Industrial Machinery Mechanics	Y	Y	Y		Y
49-9071	Maintenance and Repair Workers, General	Y	Y	Y	Y	
51-1011	First-Line Supervisors of Production and Operating Workers	Y	Y	Y	Y	Y
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers		Y	Y		Y
51-9161	CNC Tool Operators	Y	Y	Y		Y
53-3032	Heavy and Tractor-Trailer Truck Drivers	Y	Y	Y		Y



Appendix I: Commuting Profile

Statewide as of 2019 (pre-pandemic), 453,374 individuals both lived and worked in New Hampshire, 114,800 lived in the state but commuted to another state for work, and 78,362 lived in another state but commuted into New Hampshire for work.¹⁰ Of New Hampshire residents who worked out of state in 2019, the lion's share (90,599) worked in Massachusetts, followed by Vermont (9,187), Maine (7,748), New York (2,333), and Connecticut (1,171). Fewer than 1,000 worked in each of Rhode Island, New Jersey, Pennsylvania, Florida, and other states.

Approximately half of New Hampshire's nonresident workforce commuted from Massachusetts (39,633) in 2019, with significant numbers also coming from Maine (17,569), Vermont (15,105), New York (1,697), and Connecticut (1,289). Fewer than 1,000 lived in each of Rhode Island, Pennsylvania, New Jersey, Florida, and other states.

Work State of New Hampshire Residents, 2019

State	Count	Share
New Hampshire	453,374	79.8%
Total Out-Commuters	114,800	20.2%
Massachusetts	90,599	15.9%
Vermont	9,187	1.6%
Maine	7,748	1.4%
New York	2,333	0.4%
Connecticut	1,171	0.2%
Rhode Island	722	0.1%
New Jersey	355	0.1%
Pennsylvania	334	0.1%
Florida	322	0.1%
All Other Locations	2,029	0.4%

Note: Counts only private primary jobs.

Source: US Census Bureau, OnTheMap

Home State of New Hampshire Workers, 2019

State	Count	Share
New Hampshire	453,374	85.3%
Total In-Commuters	78,362	14.7%
Massachusetts	39,633	7.5%
Maine	17,569	3.3%
Vermont	15,105	2.8%
New York	1,697	0.3%
Connecticut	1,289	0.2%
Rhode Island	649	0.1%
Pennsylvania	381	0.1%
New Jersey	315	0.1%
Florida	250	0.0%
All Other Locations	1,474	0.3%

Note: Counts only private primary jobs.

Source: US Census Bureau, OnTheMap

¹⁰ Source: US Census Bureau's [OnTheMap \(census.gov\)](https://onthemap.census.gov/)

By 2021, 125,919 individuals lived in New Hampshire but worked in another state, and 82,458 individuals lived in another state but worked in New Hampshire, for net out-commuting of 43,461.¹¹ This is a decrease from pre-pandemic levels in 2019 when 136,121 New Hampshire residents commuted to other states for work and 87,098 workers commuted into New Hampshire from other states, yielding net out-commuting of 49,023.

Of New Hampshire residents who worked out of state in 2021, 81% worked in Massachusetts, 9% in Vermont, 8% in Maine, 1% in Connecticut, and less than 1% in each of Rhode Island and New York.

Approximately half (52%) of New Hampshire’s nonresident workforce commuted from Massachusetts (42,706) in 2021, followed by roughly one-quarter (24%) from Maine (19,438), 21% from Vermont (17,646), and less than 2% each from Connecticut (1,328), Rhode Island (818), and New York (523).

Work State of New Hampshire Out-Commuters, 2021

State	Outbound Commuters	Share
MA	101,594	80.7%
VT	10,871	8.6%
ME	10,475	8.3%
CT	1,321	1.0%
RI	878	0.7%
NY	780	0.6%
Total	125,919	

Source: Emsi

Home State of New Hampshire In-Commuters, 2021

State	Inbound Commuters	Share
MA	42,706	51.8%
ME	19,438	23.6%
VT	17,646	21.4%
CT	1,328	1.6%
RI	818	1.0%
NY	523	0.6%
Total	82,458	

Source: Emsi

¹¹ Source: Emsi

Out-Bound Commuters

Most cross-state commuters are those with monthly earnings above \$3,333. Among New Hampshire residents who work in another state, 69% earn over \$3,333 per month, about 19% earn between \$1,251 and \$3,333, and the remaining 12% earn \$1,250 per month or less. By comparison, among New Hampshire residents who work in New Hampshire, just over half (52%) earn more than \$3,333 per month, 30% earn between \$1,251 and \$3,333, and the remaining 18% earn \$1,250 per month or less. That is, high earners represent a larger share of out-commuting New Hampshire residents than of those who work in-state. This means the State is exporting its top earners.

- Massachusetts is the main destination of all out-commuting income brackets, claiming from 59% of those earning \$1,250 per month or less up to 86% of those earning more than \$3,333.
- All three earnings brackets share the same next five work states: Vermont, Maine, New York, Connecticut, and Rhode Island, with Vermont and Maine switching places for commuters in the lowest bracket.

New Hampshire Resident Workers by Earnings and State of Employment, 2019

Total Workers			Earning \$1,250 per Month or Less		
State	Count	Share	State	Count	Share
Total Private Primary Jobs	568,174	100%	Total Private Primary Jobs	95,585	16.8%
New Hampshire	453,374	100%	New Hampshire	82,073	18.1%
Total Out-Commuters	114,800	100%	Total Out-Commuters	13,512	11.8%
Massachusetts	90,599	78.9%	Massachusetts	7,938	58.7%
Vermont	9,187	8.0%	Maine	1,862	13.8%
Maine	7,748	6.7%	Vermont	1,762	13.0%
New York	2,333	2.0%	New York	753	5.6%
Connecticut	1,171	1.0%	Connecticut	288	2.1%
Rhode Island	722	0.6%	Rhode Island	257	1.9%
New Jersey	355	0.3%	Pennsylvania	92	0.7%
Pennsylvania	334	0.3%	Florida	72	0.5%
Florida	322	0.3%	Colorado	68	0.5%
All Other Locations	2,029	1.8%	All Other Locations	420	3.1%

Earning \$1,251–\$3,333 per Month			Earning More Than \$3,333 per Month		
State	Count	Share	State	Count	Share
Total Private Primary Jobs	158,282	27.9%	Total Private Primary Jobs	314,307	55.3%
New Hampshire	136,023	30.0%	New Hampshire	235,278	51.9%
Total Out-Commuters	22,259	19.4%	Total Out-Commuters	79,029	68.8%
Massachusetts	14,706	66.1%	Massachusetts	67,955	86.0%
Vermont	3,213	14.4%	Vermont	4,212	5.3%
Maine	2,571	11.6%	Maine	3,315	4.2%
New York	476	2.1%	New York	1,104	1.4%
Connecticut	260	1.2%	Connecticut	623	0.8%
Rhode Island	177	0.8%	Rhode Island	288	0.4%
Florida	98	0.4%	New Jersey	214	0.3%
New Jersey	95	0.4%	Pennsylvania	154	0.2%
Pennsylvania	88	0.4%	Florida	152	0.2%
All Other Locations	575	2.6%	All Other Locations	1,012	1.3%

Note: State shares are of total out-commuters in each earnings bracket.

Source: US Census Bureau, OnTheMap

In-Bound Commuters

Among workers in New Hampshire who commute in from another state, 52% earn more than \$3,333 per month, 28% earn between \$1,251 and \$3,333, and 20% earn \$1,250 per month or less. This is quite close to the earnings distribution of New Hampshire workers who are also residents.

In-commuters in all earnings brackets come from the same top nine states in the same order.

- Massachusetts is the home of 54% of in-commuters in the lowest earnings bracket, 47% of those in the middle bracket, and 51% of the highest-earning in-commuters
- Maine is home to 19% of lower-earnings in-commuters, 24% of those with middle-earnings, and 23% of high-earnings in-commuters
- Vermont is home to 16% of in-commuters earning \$1,250 per month or less, 21% of those earning \$1,251 to \$3,333, and 20% of those earning over \$3,333 per month
- The remaining six top home states—New York, Connecticut, Rhode Island, Pennsylvania, New Jersey, and Florida—each represent less than 5% and generally less than 2% of in-commuters in each earnings bracket

Workers in New Hampshire by Earnings and Home State, 2019

Total Workers			Earning \$1,250 per Month or Less		
State	Count	Share	State	Count	Share
Total Private Primary Jobs	531,736	100%	Total Private Primary Jobs	97,720	18.4%
New Hampshire	453,374	100%	New Hampshire	82,073	18.1%
Total In-Commuters	78,362	100%	Total In-Commuters	15,647	20.0%
Massachusetts	39,633	50.6%	Massachusetts	8,474	54.2%
Maine	17,569	22.4%	Maine	2,977	19.0%
Vermont	15,105	19.3%	Vermont	2,500	16.0%
New York	1,697	2.2%	New York	500	3.2%
Connecticut	1,289	1.6%	Connecticut	454	2.9%
Rhode Island	649	0.8%	Rhode Island	227	1.5%
Pennsylvania	381	0.5%	Pennsylvania	92	0.6%
New Jersey	315	0.4%	New Jersey	67	0.4%
Florida	250	0.3%	Florida	52	0.3%
All Other Locations	1,474	1.9%	All Other Locations	304	1.9%

Earning \$1,251–\$3,333 per Month			Earning More Than \$3,333 per Month		
State	Count	Share	State	Count	Share
Total Private Primary Jobs	158,316	29.8%	Total Private Primary Jobs	275,700	51.8%
New Hampshire	136,023	30.0%	New Hampshire	235,278	51.9%
Total In-Commuters	22,293	28.4%	Total In-Commuters	40,422	51.6%
Massachusetts	10,376	46.5%	Massachusetts	20,783	51.4%
Maine	5,450	24.4%	Maine	9,142	22.6%
Vermont	4,681	21.0%	Vermont	7,924	19.6%
New York	566	2.5%	New York	631	1.6%
Connecticut	286	1.3%	Connecticut	549	1.4%
Rhode Island	168	0.8%	Rhode Island	254	0.6%
Pennsylvania	127	0.6%	Pennsylvania	162	0.4%
New Jersey	94	0.4%	New Jersey	154	0.4%
Florida	90	0.4%	Florida	108	0.3%
All Other Locations	455	2.0%	All Other Locations	715	1.8%

Note: State shares are of total in-commuters in each earnings bracket.

Source: US Census Bureau, OnTheMap



Appendix II: Workforce Pipeline Profile

Key Takeaways

About one-quarter of New Hampshire higher educational program completions in 2020 were in business-related fields and another 10% were in health-related fields. Based on how educational fields prepare students for professional occupations, about 20% of program completers had the minimum qualifications for management occupations, 15% were qualified for entry-level business and financial occupations, and nearly 10% for computer occupations.

- Statewide post-secondary completions grew 84% between 2011 and 2020 to 36,836. Three of the four CEDRs saw increases in completions over the period, ranging from 0.2% in the Northern CEDR to 185% in the Central-Southern CEDR. Total completions shrank by 21% in the South-Western CEDR, although those from Franklin Pierce University grew by almost 11%.
- The top 10 academic major fields in the state in 2020 were: Business Administration and Management (6,366), Psychology (2,246), General Studies (1,699), Registered Nursing (1,657), Health/Health Care Administration/Management (1,461), Accounting (1,304), Computer and Information Sciences (1,223), Corrections and Criminal Justice (997), English Language and Literature (804), and Organizational Communication (639). These fields accounted for half of all 2020 completions. Health/Health Care Administration/Management and Corrections and Criminal Justice are also among the fastest growing majors, with completions increasing by 1024% and 2166% between 2011 and 2020.
- Statewide, New Hampshire's post-secondary educational institutions provided 17,934 individuals in 2020 with the minimum academic qualifications to be Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other, representing a potential 10-year supply of nearly 115,000. Other top occupational completions in the state were General and Operations Managers, Project Management Specialists and Business Operations Specialists, Computer User Support Specialists, and Sales Managers.

Training Programs

The State of New Hampshire has:

- Seven Community Colleges with 12 campuses
- Four public four-year colleges
- 12 private nonprofit colleges and universities
- 52 licensed career schools

The table below shows the 10-year trend in total completions from New Hampshire's post-secondary educational institutions, by CEDR. Statewide, total completions grew 84%, from 20,042 in 2011 to 36,836 in 2020.

- The Southern-Central CEDR has the highest number of institutions and, not surprisingly, the most completions in the State. Growing from 9,199 completions in 2011 to 26,241 in 2020, the region produced 71% of the State's total. Southern New Hampshire University alone provided 58% of the state total. SNHU completions increased more than eightfold between 2011 and 2020.
- At 13% of the state total, the Seacoast CEDR is the second largest source of completions, with 4,712 in 2020. Most of these (4,259) were from the University of New Hampshire's main campus. UNH's completions were 6% higher in 2020 than in 2011, while completions from the smaller Great Bay Community College increased 45% over the same period, from 230 to 334.
- The Northern CEDR produced 10% of the State's 2020 completions, with 3,836. This was almost unchanged from 2011's 3,830 completions. Dartmouth College (2,114 completions in 2020) and Plymouth State University (1,311) are the largest institutions in the region. Both grew modestly between 2011 and 2020, at 7% and 6%, respectively. The six other post-secondary institutions in the Northern CEDR saw modest to significant declines in completions.
- Representing 6% of New Hampshire's total 2020 completions, the South-Western CEDR produced 2,047 in 2020, a 21% decrease from 2011. The largest institutions are Keene State College, with 915 completions, and Franklin Pierce University, with 637. Franklin Pierce is the only institution in the region to see an increase in completions since 2011. The other four saw declines of 10% to 57%, with Keene State shrinking by almost one-third.

Postsecondary Educational Completions by Region and Institution, 2011–2020

Region/Institution											2011–2020
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Change
Northern CEDR											
Dartmouth College	1,976	1,985	2,081	2,153	2,064	2,103	2,074	2,169	2,115	2,114	7.0%
Empire Beauty School-Laconia	59	64	45	55	45	35	43	43	37	53	-10.2%
Lakes Region Community College	210	244	208	178	181	205	167	228	188	129	-38.6%
Lebanon College	35	39	16	26	ND	ND	ND	ND	ND	ND	–
New England School of Hair Design	20	37	12	21	23	17	21	9	14	9	-55.0%
Plymouth State University	1,240	1,484	1,397	1,467	1,427	1,341	1,258	1,250	1,352	1,311	5.7%
Upper Valley Educators Institute	55	39	45	41	24	37	28	30	22	18	-67.3%
White Mountains Community College	235	252	194	226	171	202	219	217	247	202	-14.0%
Total	3,830	4,144	3,998	4,167	3,935	3,940	3,810	3,946	3,975	3,836	0.2%
South-Western CEDR											
Antioch University-New England	318	294	316	326	251	201	208	249	341	287	-9.7%
Franklin Pierce University	576	676	608	555	505	674	590	621	574	637	10.6%
Keene Beauty Academy	35	38	26	33	26	43	40	22	20	15	-57.1%
Keene State College	1,347	1,405	1,323	1,325	1,263	1,053	1,208	1,156	960	915	-32.1%
River Valley Community College	315	370	276	220	234	206	197	200	194	193	-38.7%
Total	2,591	2,783	2,549	2,459	2,279	2,177	2,243	2,248	2,089	2,047	-21.0%
Seacoast CEDR											
Chester College of New England	35	ND	ND	ND	ND	ND	ND	ND	ND	ND	–
Empire Beauty School-Portsmouth	61	40	67	42	47	51	38	46	ND	ND	–
Empire Beauty School-Somersworth	56	50	54	62	42	29	60	41	80	86	53.6%
Great Bay Community College	230	245	226	270	290	340	329	356	373	334	45.2%
InterCoast Career Institute-Salem	ND	0	39	56	ND	ND	ND	ND	ND	ND	–
Paul Mitchell the School-Portsmouth	21	24	18	10	26	33	26	19	22	33	57.1%
University of New Hampshire-Main Campus	4,019	4,033	4,289	4,029	4,194	4,124	4,097	4,438	4,540	4,259	6.0%
Total	4,422	4,392	4,693	4,469	4,599	4,577	4,550	4,900	5,015	4,712	6.6%

Note: ND = no data

Source: Emsi, Integrated Postsecondary Education Data System

Postsecondary Educational Completions by Region and Institution, 2011–2020

Region/Institution											2011–2020
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Change
Central-Southern CEDR											
American Academy of Health and Beauty	51	91	53	50	49	58	46	41	43	20	-60.8%
American School of Nursing and Medical Careers	108	169	135	192	214	130	187	138	116	ND	–
Colby-Sawyer College	208	187	267	246	320	322	318	281	219	195	-6.3%
Continental Academie of Hair Design-Hudson	59	38	49	35	42	39	29	15	33	9	-84.7%
Continental Academie of Hair Design-Manchester	15	ND	ND	ND	ND	ND	ND	ND	ND	ND	–
Daniel Webster College	252	199	143	178	125	137	ND	ND	ND	ND	–
Empire Beauty School-Hooksett	49	62	43	49	63	82	93	82	113	105	114.3%
Granite State College	495	476	510	475	649	629	667	600	545	564	13.9%
Harmony Health Care Institute	ND	ND	ND	ND	ND	ND	18	32	48	50	–
Magdalen College	16	16	ND	20	19	26	23	13	23	18	12.5%
Manchester Community College	301	374	330	416	399	525	407	560	513	461	53.2%
Michaels School of Hair Design and Esthetics-	119	96	88	75	91	94	77	75	58	56	-52.9%
Mount Washington College	1,195	1,012	902	649	429	ND	ND	ND	ND	ND	–
Nashua Community College	302	298	300	298	339	299	313	315	312	318	5.3%
New England College	653	599	511	521	526	521	609	893	681	765	17.2%
New Hampshire Institute for Therapeutic Arts	53	35	25	28	35	31	31	20	24	15	-71.7%
New Hampshire Institute of Art	95	83	114	97	96	117	108	101	ND	ND	–
NHTI-Concord's Community College	697	745	719	745	735	719	763	821	837	766	9.9%
Rivier University	658	633	679	694	747	870	923	696	615	549	-16.6%
Saint Anselm College	449	396	438	420	518	492	539	554	517	585	30.3%
Seacoast Career School-Manchester Campus	380	414	306	256	202	164	108	95	ND	ND	–
Southern New Hampshire University	2,589	2,634	3,035	4,508	7,654	10,198	13,583	17,854	20,399	21,418	727.3%
St Joseph School of Nursing	66	67	46	87	97	74	94	98	57	64	-3.0%
Thomas More College of Liberal Arts	22	10	15	18	23	16	17	30	25	22	0.0%
University of New Hampshire-Franklin Pierce	173	179	139	170	111	101	91	93	81	85	-50.9%
University of New Hampshire at Manchester	194	200	236	221	194	169	166	206	201	176	-9.3%
Total	9,199	9,013	9,083	10,448	13,677	15,813	19,210	23,613	25,460	26,241	185.3%
State Total	20,042	20,332	20,323	21,543	24,490	26,507	29,813	34,707	36,539	36,836	83.8%

Note: ND = no data

Source: Emsi, Integrated Postsecondary Education Data System

Statewide, the top 10 academic fields accounted for half of all 2020 completions, while the top 20 accounted for 62%. The top 10 were: Business Administration and Management (6,366), Psychology (2,246), General Studies (1,699), Registered Nursing (1,657), Health/Health Care Administration/ Management (1,461), Accounting (1,304), Computer and Information Sciences (1,223), Corrections and Criminal Justice (997), English Language and Literature (804), and Organizational Communication (639). Among the top 20 fields, Human Resources Management/Personnel Administration, Corrections and Criminal Justice, Creative Writing, and Health/Health Care Administration/Management are the fastest growing, each increasing by more than 1000% from 2011 to 2020.

Top Post-Secondary Completion Fields in New Hampshire, 2020

CIP Code	Description	2020 Completions	Share of Total	2011–2020 Average	2011–2020 Change
52.0201	Business Administration and Management, General	6,366	17.3%	4,268	152%
42.0101	Psychology, General	2,246	6.1%	1,424	173%
24.0102	General Studies	1,699	4.6%	857	767%
51.3801	Registered Nursing/Registered Nurse	1,657	4.5%	1,097	142%
51.0701	Health/Health Care Administration/Management	1,461	4.0%	570	1024%
52.0301	Accounting	1,304	3.5%	845	200%
11.0101	Computer and Information Sciences, General	1,223	3.3%	784	595%
43.0199	Corrections and Criminal Justice, Other	997	2.7%	419	2166%
23.0101	English Language and Literature, General	804	2.2%	699	70%
09.0901	Organizational Communication, General	639	1.7%	274	Insf. Data
24.0199	Liberal Arts and Sciences, General Studies and Humanities, Other	561	1.5%	253	510%
54.0101	History, General	561	1.5%	383	105%
23.1302	Creative Writing	549	1.5%	257	1177%
52.1401	Marketing/Marketing Management, General	502	1.4%	317	105%
52.0205	Operations Management and Supervision	421	1.1%	224	680%
44.0000	Human Services, General	386	1.0%	143	444%
52.1001	Human Resources Management/Personnel Administration, General	386	1.0%	207	12767%
51.2201	Public Health, General	384	1.0%	164	399%
50.0409	Graphic Design	373	1.0%	159	492%
51.0000	Health Services/Allied Health/Health Sciences, General	362	1.0%	146	934%
Total Completions		36,836	100%	27,113	83.8%

Source: Emsi, Integrated Postsecondary Education Data System

The following tables show the most popular fields of study and number of 2020 completions in each CEDR. These are the top five in each region.

Northern CEDR

- Business Administration and Management
- Econometrics and Quantitative Economics
- Engineering
- Computer Science
- Management Science

Central-Southern CEDR

- Business Administration and Management
- Psychology
- General Studies
- Registered Nursing
- Health/Health Care Administration/Management

South-Western CEDR

- Business Administration and Management
- Environmental Studies
- Elementary Education and Teaching
- Psychology
- Occupational Safety and Health Technology

Seacoast CEDR

- Business Administration and Management
- Psychology
- Speech Communication and Rhetoric
- Registered Nursing
- Mechanical Engineering

Top Post-Secondary Completion Fields in Central-Southern CEDR, 2020

CIP		2020	Share of	2011–2020	2011–2020
Code	Description	Completions	Total	Average	Change
52.0201	Business Administration and Management, General	5,148	19.6%	4,268	237.8%
42.0101	Psychology, General	1,885	7.2%	1,424	422.2%
24.0102	General Studies	1,683	6.4%	857	1029.5%
51.3801	Registered Nursing/Registered Nurse	1,365	5.2%	1,097	243.0%
51.0701	Health/Health Care Administration/Management	1,353	5.2%	570	1889.7%
52.0301	Accounting	1,228	4.7%	845	240.2%
11.0101	Computer and Information Sciences, General	1,129	4.3%	784	1052.0%
43.0199	Corrections and Criminal Justice, Other	953	3.6%	419	2065.9%
09.0901	Organizational Communication, General	639	2.4%	699	Insf. Data
23.0101	English Language and Literature, General	599	2.3%	274	499.0%
23.1302	Creative Writing	533	2.0%	253	3035.3%
24.0199	Liberal Arts and Sciences, General Studies and Humanities, Other	526	2.0%	383	1152.4%
52.1401	Marketing/Marketing Management, General	432	1.6%	257	152.6%
54.0101	History, General	432	1.6%	317	632.2%
52.0205	Operations Management and Supervision	421	1.6%	224	679.6%
52.1001	Human Resources Management/Personnel Administration, General	377	1.4%	143	12466.7%
44.0000	Human Services, General	374	1.4%	207	1106.5%
50.0409	Graphic Design	370	1.4%	164	704.3%
03.0104	Environmental Science	284	1.1%	159	9366.7%
51.0000	Health Services/Allied Health/Health Sciences, General	280	1.1%	146	803.2%
Total Completions		26,241	100%	16,176	185.3%

Source: Emsi, Integrated Postsecondary Education Data System

Top Post-Secondary Completion Fields in Seacoast CEDR, 2020

CIP Code	Description	2020 Completions	Share of Total	2011–2020 Average	2011–2020 Change
52.0201	Business Administration and Management, General	886	18.8%	684	106.5%
42.0101	Psychology, General	212	4.5%	217	2.9%
09.0101	Speech Communication and Rhetoric	164	3.5%	157	19.7%
51.3801	Registered Nursing/Registered Nurse	159	3.4%	155	-2.5%
14.1901	Mechanical Engineering	136	2.9%	113	43.2%
26.0102	Biomedical Sciences, General	128	2.7%	97	12700.0%
44.0701	Social Work	124	2.6%	104	67.6%
51.2306	Occupational Therapy/Therapist	118	2.5%	115	-1.7%
23.0101	English Language and Literature, General	113	2.4%	140	-43.8%
45.1001	Political Science and Government, General	98	2.1%	101	-14.8%
14.0801	Civil Engineering, General	95	2.0%	98	-4.0%
30.1901	Nutrition Sciences	86	1.8%	78	32.3%
19.0701	Human Development and Family Studies, General	79	1.7%	84	9.7%
12.0401	Cosmetology/Cosmetologist, General	70	1.5%	77	-26.3%
11.0101	Computer and Information Sciences, General	68	1.4%	52	61.9%
31.0301	Parks, Recreation, and Leisure Facilities Management, General	67	1.4%	78	-1.5%
45.0401	Criminology	65	1.4%	75	-18.8%
03.0101	Natural Resources/Conservation, General	62	1.3%	53	12.7%
45.1101	Sociology, General	61	1.3%	78	-53.8%
52.0101	Business/Commerce, General	59	1.3%	112	-57.9%
Total Completions		4,712	100%	2,925	6.6%

Source: Emsi, Integrated Postsecondary Education Data System

Top Post-Secondary Completion Fields in Northern CEDR, 2020

CIP Code	Description	2020 Completions	Share of Total	2011–2020 Average	2011–2020 Change
52.0201	Business Administration and Management, General	227	5.9%	391	-36.8%
45.0603	Econometrics and Quantitative Economics	166	4.3%	54	Insf. Data
14.0101	Engineering, General	165	4.3%	145	18.7%
11.0701	Computer Science	139	3.6%	100	167.3%
52.1301	Management Science	139	3.6%	14	Insf. Data
45.1001	Political Science and Government, General	138	3.6%	155	-6.8%
14.1301	Engineering Science	130	3.4%	114	18.2%
51.2201	Public Health, General	97	2.5%	57	98.0%
51.1201	Medicine	88	2.3%	84	29.4%
52.0101	Business/Commerce, General	84	2.2%	83	-29.4%
03.0103	Environmental Studies	83	2.2%	66	107.5%
26.0101	Biology/Biological Sciences, General	79	2.1%	93	-13.2%
13.1202	Elementary Education and Teaching	74	1.9%	89	-37.3%
43.0104	Criminal Justice/Safety Studies	69	1.8%	61	30.2%
27.0101	Mathematics, General	64	1.7%	66	-1.5%
42.2704	Experimental Psychology	63	1.6%	12	Insf. Data
54.0101	History, General	62	1.6%	88	-41.5%
23.0101	English Language and Literature, General	61	1.6%	81	-40.8%
51.3801	Registered Nursing/Registered Nurse	55	1.4%	60	-21.4%
42.0101	Psychology, General	54	1.4%	103	-53.0%
Total Completions		3,836	100%	2,351	0.2%

Source: Emsi, Integrated Postsecondary Education Data System

Top Post-Secondary Completion Fields in South-Western CEDR, 2020

CIP Code	Description	2020 Completions	Share of Total	2011–2020 Average	2011–2020 Change
52.0201	Business Administration and Management, General	105	5.1%	145	-51.8%
03.0103	Environmental Studies	99	4.8%	89	19.3%
13.1202	Elementary Education and Teaching	95	4.6%	120	-43.5%
42.0101	Psychology, General	95	4.6%	128	-33.1%
15.0701	Occupational Safety and Health Technology/Technician	88	4.3%	111	1.1%
51.2308	Physical Therapy/Therapist	85	4.2%	69	107.3%
51.3801	Registered Nursing/Registered Nurse	78	3.8%	81	44.4%
51.0000	Health Services/Allied Health/Health Sciences, General	72	3.5%	32	Insf. Data
26.0101	Biology/Biological Sciences, General	64	3.1%	45	42.2%
13.0101	Education, General	49	2.4%	44	44.1%
51.1508	Mental Health Counseling/Counselor	48	2.3%	33	84.6%
09.0101	Speech Communication and Rhetoric	46	2.2%	71	-56.6%
43.0199	Corrections and Criminal Justice, Other	44	2.1%	21	Insf. Data
42.2801	Clinical Psychology	43	2.1%	43	-32.8%
43.0103	Criminal Justice/Law Enforcement Administration	43	2.1%	36	4.9%
51.0001	Health and Wellness, General	41	2.0%	37	412.5%
13.1210	Early Childhood Education and Teaching	33	1.6%	45	-41.1%
23.0101	English Language and Literature, General	31	1.5%	48	-55.1%
45.1101	Sociology, General	31	1.5%	48	-53.0%
50.0602	Cinematography and Film/Video Production	30	1.5%	27	20.0%
Total Completions		2,047	100%	2,347	-21.0%

Source: Emsi, Integrated Postsecondary Education Data System

Completions

The CIP codes used to classify academic fields of study can be mapped to occupational SOC codes according to the skillset and entry-level amount of education required by an occupation. From this it is possible to derive occupational completions, representing the number of post-secondary graduates, or completers, who would have the basic qualifications for given occupations. The most recent data for completions is 2020. Multiplying 2010–2020 average annual occupational completions by 10 provides an estimate of the potential supply of new workers for any given occupation. Completions count the number of degrees rather than students, so that a single student who double-majors in economics and political science, for instance, will count as two completions and will be qualified for more than one occupation.

Statewide, New Hampshire’s post-secondary educational institutions provided 17,934 individuals in 2020 with the minimum academic qualifications to be Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other, representing a potential 10-year supply of nearly 126,433. Other top occupational completions in the state were General and Operations Managers (potential 10-year supply of 76,023), Project Management Specialists and Business Operations Specialists (75,809), Computer User Support Specialists (72,937), and Sales Managers (72,921).

The following tables show the occupations with the largest pipelines in each CEDR, 2020 completions, and estimated 2022–2032 completions. These are the top five in each region.

Northern CEDR

- Personal Service Managers, All Other; Entertainment and Recreation Managers; and Managers, All Other
- Chief Executives
- General and Operations Managers
- Secondary School Teachers, except Special and Career/Technical Education
- Sales Managers

Central-Southern CEDR

- Personal Service Managers, All Other; Entertainment and Recreation Managers; and Managers, All Other
- Computer User Support Specialists
- General and Operations Managers
- Human Resources Specialists
- Project Management Specialists and Business Operations Specialists, All Other

South-Western CEDR

- Personal Service Managers, All Other; Entertainment and Recreation Managers; and Managers, All Other
- Marketing Managers
- Project Management Specialists and Business Operations Specialists, All Other
- Market Research Analysts and Marketing Specialists
- Sales Managers

Seacoast CEDR

- Personal Service Managers, All Other; Entertainment and Recreation Managers; and Managers, All Other
- General and Operations Managers
- Chief Executives
- Project Management Specialists and Business Operations Specialists, All Other
- Sales Managers

Top Occupational Completions in New Hampshire, 2022–2032

SOC	Description	Completions	Completions	Typical Entry-Level Education
11-9198	Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	17,934	126,433	Bachelor's degree
11-1021	General and Operations Managers	11,020	76,023	Bachelor's degree
13-1198	Project Management Specialists and Business Operations Specialists, All Other	10,684	75,809	Bachelor's degree
15-1232	Computer User Support Specialists	10,677	72,937	Some college, no degree
11-2022	Sales Managers	10,471	72,921	Bachelor's degree
11-1011	Chief Executives	10,516	72,820	Bachelor's degree
11-2021	Marketing Managers	10,349	70,779	Bachelor's degree
13-1071	Human Resources Specialists	10,177	65,416	Bachelor's degree
11-3021	Computer and Information Systems Managers	8,557	60,164	Bachelor's degree
13-1111	Management Analysts	7,932	57,733	Bachelor's degree
13-1161	Market Research Analysts and Marketing Specialists	7,790	57,621	Bachelor's degree
13-2011	Accountants and Auditors	7,870	56,134	Bachelor's degree
11-3121	Human Resources Managers	8,346	54,489	Bachelor's degree
15-1299	Computer Occupations, All Other	4,365	30,491	Bachelor's degree
25-2031	Secondary School Teachers, Except Special and Career/Technical Education	2,996	29,899	Bachelor's degree
21-1021	Child, Family, and School Social Workers	3,183	24,355	Bachelor's degree
25-2022	Middle School Teachers, Except Special and Career/Technical Education	2,407	23,368	Bachelor's degree
25-2021	Elementary School Teachers, Except Special Education	1,973	22,609	Bachelor's degree
13-1041	Compliance Officers	3,303	22,218	Bachelor's degree
27-3031	Public Relations Specialists	3,763	21,968	Bachelor's degree
21-1023	Mental Health and Substance Abuse Social Workers	3,138	21,793	Master's degree
21-1022	Healthcare Social Workers	3,290	21,104	Master's degree
21-1018	Substance Abuse, Behavioral Disorder, and Mental Health Counselors	3,057	20,708	Bachelor's degree
21-1013	Marriage and Family Therapists	2,901	19,784	Master's degree
19-3031	Clinical, Counseling, and School Psychologists	2,553	19,061	Master's degree
15-2041	Statisticians	3,233	18,950	Master's degree
21-1015	Rehabilitation Counselors	2,649	17,064	Master's degree
21-1012	Educational, Guidance, and Career Counselors and Advisors	2,290	16,163	Master's degree
19-3039	Psychologists, All Other	2,345	15,843	Master's degree
19-3032	Industrial-Organizational Psychologists	2,263	15,555	Master's degree
29-1223	Psychiatrists	2,263	15,555	Doctoral or professional degree
27-3043	Writers and Authors	1,798	15,155	Bachelor's degree
19-2041	Environmental Scientists and Specialists, Including Health	1,541	15,107	Bachelor's degree

Note: Includes only occupations requiring more than a high school education and with at least 1,000 completions in 2020.

Source: Emsi



Top Occupational Completions in New Hampshire, 2022–2032 (continued)

SOC	Description	Completions	Completions	Typical Entry-Level Education
		2020	2022–2032	
13-2098	Financial and Investment Analysts, Financial Risk Specialists, and Financial Specialists, All Other	1,920	14,856	Bachelor's degree
25-3097	Tutors and Teachers and Instructors, All Other	2,552	14,715	Some college, no degree
11-3011	Administrative Services and Facilities Managers	2,633	14,655	Bachelor's degree
27-3023	News Analysts, Reporters, and Journalists	1,832	14,610	Bachelor's degree
29-1141	Registered Nurses	2,062	14,529	Bachelor's degree
25-1099	Postsecondary Teachers	2,512	14,505	Doctoral or professional degree
15-1212	Information Security Analysts	1,840	14,121	Bachelor's degree
29-1171	Nurse Practitioners	1,941	14,057	Master's degree
11-2031	Public Relations and Fundraising Managers	2,590	14,033	Bachelor's degree
27-3041	Editors	2,081	13,767	Bachelor's degree
29-1161	Nurse Midwives	1,884	13,726	Master's degree
11-9121	Natural Sciences Managers	1,452	13,265	Bachelor's degree
11-9032	Education Administrators, Kindergarten through Secondary	1,106	12,723	Master's degree
15-1251	Computer Programmers	1,875	12,572	Bachelor's degree
15-1257	Web Developers and Digital Interface Designers	1,960	12,477	Bachelor's degree
15-1211	Computer Systems Analysts	1,758	12,401	Bachelor's degree
15-1244	Network and Computer Systems Administrators	1,756	12,315	Bachelor's degree
15-1245	Database Administrators and Architects	1,740	12,202	Bachelor's degree
15-1241	Computer Network Architects	1,718	12,172	Bachelor's degree
13-2061	Financial Examiners	1,723	12,101	Bachelor's degree
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	1,708	12,099	Bachelor's degree
13-2031	Budget Analysts	1,717	12,097	Bachelor's degree
13-2041	Credit Analysts	1,722	12,085	Bachelor's degree
15-1231	Computer Network Support Specialists	1,710	12,058	Associate's degree
15-1221	Computer and Information Research Scientists	1,716	12,057	Master's degree
43-9111	Statistical Assistants	1,790	11,876	Bachelor's degree
29-1151	Nurse Anesthetists	1,657	11,627	Master's degree
13-1075	Labor Relations Specialists	1,438	11,606	Bachelor's degree
19-1042	Medical Scientists, Except Epidemiologists	1,379	11,205	Doctoral or professional degree
43-3031	Bookkeeping, Accounting, and Auditing Clerks	1,480	10,554	Some college, no degree
13-2081	Tax Examiners and Collectors, and Revenue Agents	1,476	10,503	Bachelor's degree
43-9081	Proofreaders and Copy Markers	1,393	10,207	Bachelor's degree
19-3094	Political Scientists	1,199	10,073	Master's degree
43-9031	Desktop Publishers	1,218	9,685	Associate's degree
13-1011	Agents and Business Managers of Artists, Performers, and Athletes	1,479	9,289	Bachelor's degree
19-3022	Survey Researchers	1,020	8,201	Master's degree
27-1024	Graphic Designers	1,372	7,593	Bachelor's degree
27-1011	Art Directors	1,349	7,331	Bachelor's degree
11-2011	Advertising and Promotions Managers	1,199	7,303	Bachelor's degree
13-1131	Fundraisers	1,156	6,380	Bachelor's degree
21-1091	Health Education Specialists	1,006	5,551	Bachelor's degree

Note: Includes only occupations requiring more than a high school education and with at least 1,000 completions in 2020.



Source: Emsi

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State of New Hampshire Workforce Assessment

Top Occupational Completions in the Central-Southern CEDR, 2022–2032

SOC	Description	Completions	Completions	Typical Entry-Level Education
		2020	2022–2026	
11-9198	Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	13,907	80,039	Bachelor's degree
15-1232	Computer User Support Specialists	8,942	54,247	Some college, no degree
11-1021	General and Operations Managers	8,840	53,249	Bachelor's degree
13-1071	Human Resources Specialists	8,719	49,169	Bachelor's degree
13-1198	Project Management Specialists and Business Operations Specialists, All Other	8,670	53,617	Bachelor's degree
11-2021	Marketing Managers	8,513	50,718	Bachelor's degree
11-2022	Sales Managers	8,503	50,922	Bachelor's degree
11-1011	Chief Executives	8,370	50,606	Bachelor's degree
11-3021	Computer and Information Systems Managers	7,000	43,853	Bachelor's degree
11-3121	Human Resources Managers	6,972	39,441	Bachelor's degree
13-2011	Accountants and Auditors	6,530	41,284	Bachelor's degree
13-1111	Management Analysts	6,151	38,238	Bachelor's degree
13-1161	Market Research Analysts and Marketing Specialists	6,037	37,042	Bachelor's degree
15-1299	Computer Occupations, All Other	3,385	20,213	Bachelor's degree
27-3031	Public Relations Specialists	2,920	12,568	Bachelor's degree
21-1022	Healthcare Social Workers	2,590	12,938	Master's degree
21-1023	Mental Health and Substance Abuse Social Workers	2,452	13,496	Master's degree
21-1018	Substance Abuse, Behavioral Disorder, and Mental Health Counselors	2,450	13,329	Bachelor's degree
21-1021	Child, Family, and School Social Workers	2,393	14,438	Bachelor's degree
25-3097	Tutors and Teachers and Instructors, All Other	2,377	12,586	Some college, no degree
25-1099	Postsecondary Teachers	2,364	12,526	Doctoral or professional degree
15-2041	Statisticians	2,314	10,066	Master's degree
21-1013	Marriage and Family Therapists	2,283	11,975	Master's degree
21-1015	Rehabilitation Counselors	2,269	11,760	Master's degree
11-3011	Administrative Services and Facilities Managers	2,245	10,138	Bachelor's degree
13-1041	Compliance Officers	2,234	10,532	Bachelor's degree
11-2031	Public Relations and Fundraising Managers	2,196	9,303	Bachelor's degree
19-3031	Clinical, Counseling, and School Psychologists	2,021	11,893	Master's degree
21-1012	Educational, Guidance, and Career Counselors and Advisors	1,914	10,710	Master's degree
19-3039	Psychologists, All Other	1,902	10,545	Master's degree
19-3032	Industrial-Organizational Psychologists	1,895	10,502	Master's degree
29-1223	Psychiatrists	1,895	10,502	Doctoral or professional degree
27-3041	Editors	1,837	10,083	Bachelor's degree
25-2031	Secondary School Teachers, Except Special and Career/Technical Education	1,730	12,492	Bachelor's degree
29-1141	Registered Nurses	1,715	10,967	Bachelor's degree

Note: Includes only occupations requiring more than a high school education and with at least 1,000 completions in 2020.

Source: Emsi

Top Occupational Completions in the Central-South CEDR, 2022–2032 (continued)

SOC	Description	Completions	Completions	Typical Entry-Level Education
		2020	2022–2032	
13-2098	Financial and Investment Analysts, Financial Risk Specialists, and Financial Specialists, All Other	1,703	12,463	Bachelor's degree
15-1257	Web Developers and Digital Interface Designers	1,702	10,254	Bachelor's degree
43-9111	Statistical Assistants	1,611	9,549	Bachelor's degree
13-2061	Financial Examiners	1,601	10,654	Bachelor's degree
13-2031	Budget Analysts	1,600	10,655	Bachelor's degree
13-2041	Credit Analysts	1,600	10,638	Bachelor's degree
29-1171	Nurse Practitioners	1,600	10,572	Master's degree
29-1161	Nurse Midwives	1,592	10,487	Master's degree
15-1251	Computer Programmers	1,561	9,911	Bachelor's degree
25-2022	Middle School Teachers, Except Special and Career/Technical Education	1,517	10,849	Bachelor's degree
15-1212	Information Security Analysts	1,446	10,697	Bachelor's degree
15-1211	Computer Systems Analysts	1,438	9,706	Bachelor's degree
15-1244	Network and Computer Systems Administrators	1,433	9,596	Bachelor's degree
15-1245	Database Administrators and Architects	1,424	9,543	Bachelor's degree
15-1221	Computer and Information Research Scientists	1,404	9,430	Master's degree
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	1,399	9,378	Bachelor's degree
15-1231	Computer Network Support Specialists	1,395	9,407	Associate's degree
15-1241	Computer Network Architects	1,394	9,369	Bachelor's degree
43-3031	Bookkeeping, Accounting, and Auditing Clerks	1,379	9,291	Some college, no degree
13-2081	Tax Examiners and Collectors, and Revenue Agents	1,375	9,258	Bachelor's degree
29-1151	Nurse Anesthetists	1,365	8,388	Master's degree
27-3023	News Analysts, Reporters, and Journalists	1,347	8,076	Bachelor's degree
13-1011	Agents and Business Managers of Artists, Performers, and Athletes	1,333	7,674	Bachelor's degree
27-3043	Writers and Authors	1,263	7,959	Bachelor's degree
27-1024	Graphic Designers	1,249	5,861	Bachelor's degree
27-1011	Art Directors	1,228	5,601	Bachelor's degree
43-9081	Proofreaders and Copy Markers	1,172	6,935	Bachelor's degree
25-2021	Elementary School Teachers, Except Special Education	1,106	10,202	Bachelor's degree
11-2011	Advertising and Promotions Managers	1,090	5,759	Bachelor's degree
13-1131	Fundraisers	1,083	5,417	Bachelor's degree

Note: Includes only occupations requiring more than a high school education and with at least 1,000 completions in 2020.

Source: Emsi

Top Occupational Completions in the Seacoast CEDR, 2022–2032

SOC	Description	Completions	Completions	Typical Entry-Level Education
		2020	2022–2032	
11-9198	Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	1,865	19,522	Bachelor's degree
11-1021	General and Operations Managers	1,233	11,547	Bachelor's degree
11-1011	Chief Executives	1,199	10,896	Bachelor's degree
13-1198	Project Management Specialists and Business Operations Specialists, All Other	1,175	10,646	Bachelor's degree
11-2022	Sales Managers	1,113	10,367	Bachelor's degree
13-1111	Management Analysts	1,065	9,785	Bachelor's degree
11-2021	Marketing Managers	1,054	9,116	Bachelor's degree
13-1161	Market Research Analysts and Marketing Specialists	1,049	8,984	Bachelor's degree
15-1232	Computer User Support Specialists	1,048	8,982	Some college, no degree
11-3021	Computer and Information Systems Managers	1,014	8,393	Bachelor's degree
13-1071	Human Resources Specialists	972	8,389	Bachelor's degree
11-3121	Human Resources Managers	925	7,825	Bachelor's degree
13-2011	Accountants and Auditors	921	7,789	Bachelor's degree
11-9121	Natural Sciences Managers	500	5,081	Bachelor's degree
21-1021	Child, Family, and School Social Workers	437	4,686	Bachelor's degree
25-2031	Secondary School Teachers, Except Special and Career/Technical Education	435	6,351	Bachelor's degree
21-1013	Marriage and Family Therapists	415	4,465	Master's degree
21-1023	Mental Health and Substance Abuse Social Workers	415	4,490	Master's degree
19-1029	Biological Scientists, All Other	387	3,619	Bachelor's degree
19-2041	Environmental Scientists and Specialists, Including Health	384	4,154	Bachelor's degree
13-1041	Compliance Officers	369	3,919	Bachelor's degree
17-2199	Engineers, All Other	366	3,767	Bachelor's degree
15-2041	Statisticians	348	3,714	Master's degree
21-1022	Healthcare Social Workers	343	3,703	Master's degree
19-1021	Biochemists and Biophysicists	339	3,671	Doctoral or professional degree
21-1018	Substance Abuse, Behavioral Disorder, and Mental Health Counselors	336	3,572	Bachelor's degree
15-1299	Computer Occupations, All Other	332	3,760	Bachelor's degree
19-1042	Medical Scientists, Except Epidemiologists	327	3,123	Doctoral or professional degree
27-3043	Writers and Authors	315	3,819	Bachelor's degree
25-2022	Middle School Teachers, Except Special and Career/Technical Education	310	4,385	Bachelor's degree
27-3031	Public Relations Specialists	309	3,545	Bachelor's degree
11-1031	Legislators	300	3,265	Bachelor's degree
11-9151	Social and Community Service Managers	277	3,547	Bachelor's degree
27-3023	News Analysts, Reporters, and Journalists	277	3,365	Bachelor's degree
17-2081	Environmental Engineers	275	2,664	Bachelor's degree
25-2021	Elementary School Teachers, Except Special Education	268	3,770	Bachelor's degree

Note: Includes only occupations requiring more than a high school education and with at least 250 completions in 2020.

Source: Emsi



Top Occupational Completions in the Northern CEDR, 2022–2032

SOC	Description	Completions	Completions	Typical Entry-Level Education
		2020	2022–2032	
11-9198	Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	1,452	17,535	Bachelor's degree
11-1011	Chief Executives	671	7,606	Bachelor's degree
11-1021	General and Operations Managers	671	7,606	Bachelor's degree
25-2031	Secondary School Teachers, Except Special and Career/Technical Education	572	7,697	Bachelor's degree
11-2022	Sales Managers	559	7,801	Bachelor's degree
13-1198	Project Management Specialists and Business Operations Specialists, All Other	525	7,642	Bachelor's degree
11-9121	Natural Sciences Managers	508	5,063	Bachelor's degree
15-1232	Computer User Support Specialists	504	6,885	Some college, no degree
11-2021	Marketing Managers	468	6,890	Bachelor's degree
15-2041	Statisticians	453	4,345	Master's degree
13-1111	Management Analysts	452	6,327	Bachelor's degree
15-1299	Computer Occupations, All Other	451	4,488	Bachelor's degree
25-2022	Middle School Teachers, Except Special and Career/Technical Education	416	5,753	Bachelor's degree
13-1041	Compliance Officers	404	4,402	Bachelor's degree
13-1161	Market Research Analysts and Marketing Specialists	402	7,705	Bachelor's degree
11-3021	Computer and Information Systems Managers	388	5,572	Bachelor's degree
27-3031	Public Relations Specialists	383	4,243	Bachelor's degree
25-2021	Elementary School Teachers, Except Special Education	339	4,978	Bachelor's degree
17-2199	Engineers, All Other	332	3,194	Bachelor's degree
19-2041	Environmental Scientists and Specialists, Including Health	326	5,165	Bachelor's degree
17-2061	Computer Hardware Engineers	304	2,572	Bachelor's degree
13-1071	Human Resources Specialists	303	5,402	Bachelor's degree
11-3121	Human Resources Managers	279	4,958	Bachelor's degree
25-4013	Museum Technicians and Conservators	273	3,207	Bachelor's degree
13-2011	Accountants and Auditors	263	4,729	Bachelor's degree
17-2081	Environmental Engineers	263	2,428	Bachelor's degree
11-3011	Administrative Services and Facilities Managers	238	2,358	Bachelor's degree
19-1042	Medical Scientists, Except Epidemiologists	232	2,556	Doctoral or professional degree
15-1212	Information Security Analysts	230	1,980	Bachelor's degree
19-3094	Political Scientists	224	2,982	Master's degree
19-1021	Biochemists and Biophysicists	217	2,573	Doctoral or professional degree
21-1021	Child, Family, and School Social Workers	209	3,029	Bachelor's degree
25-4012	Curators	209	2,595	Master's degree
11-9032	Education Administrators, Kindergarten through Secondary	208	3,092	Master's degree
11-1031	Legislators	206	2,585	Bachelor's degree
15-2031	Operations Research Analysts	203	859	Bachelor's degree

Note: Includes only occupations requiring more than a high school education and with at least 200 completions in 2020.

Source: Emsi

Top Occupational Completions in the South-Western CEDR, 2022–2032

SOC	Description	Completions	Completions	Typical Entry-Level Education
		2020	2022–2032	
11-9198	Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	710	9,337	Bachelor's degree
11-2021	Marketing Managers	314	4,055	Bachelor's degree
13-1198	Project Management Specialists and Business Operations Specialists, All Other	314	3,904	Bachelor's degree
13-1161	Market Research Analysts and Marketing Specialists	302	3,890	Bachelor's degree
11-2022	Sales Managers	296	3,831	Bachelor's degree
13-1041	Compliance Officers	296	3,365	Bachelor's degree
11-1011	Chief Executives	276	3,712	Bachelor's degree
11-1021	General and Operations Managers	276	3,621	Bachelor's degree
13-1111	Management Analysts	264	3,383	Bachelor's degree
25-2021	Elementary School Teachers, Except Special Education	260	3,659	Bachelor's degree
25-2031	Secondary School Teachers, Except Special and Career/Technical Education	259	3,359	Bachelor's degree
11-9032	Education Administrators, Kindergarten through Secondary	213	2,698	Master's degree
19-5011	Occupational Health and Safety Specialists	202	2,271	Bachelor's degree
15-1299	Computer Occupations, All Other	197	2,030	Bachelor's degree
13-1071	Human Resources Specialists	183	2,456	Bachelor's degree
15-1232	Computer User Support Specialists	183	2,823	Some college, no degree
19-2041	Environmental Scientists and Specialists, Including Health	181	2,463	Bachelor's degree
19-1042	Medical Scientists, Except Epidemiologists	178	1,573	Doctoral or professional degree
19-3031	Clinical, Counseling, and School Psychologists	178	2,533	Master's degree
19-4042	Environmental Science and Protection Technicians, Including Health	178	1,594	Associate's degree
21-1022	Healthcare Social Workers	171	2,180	Master's degree
11-3121	Human Resources Managers	170	2,265	Bachelor's degree
21-1018	Substance Abuse, Behavioral Disorder, and Mental Health Counselors	168	2,182	Bachelor's degree
21-1023	Mental Health and Substance Abuse Social Workers	168	2,182	Master's degree
25-2022	Middle School Teachers, Except Special and Career/Technical Education	164	2,381	Bachelor's degree
13-2011	Accountants and Auditors	156	2,332	Bachelor's degree
11-3021	Computer and Information Systems Managers	155	2,346	Bachelor's degree
27-3031	Public Relations Specialists	151	1,612	Bachelor's degree
21-1021	Child, Family, and School Social Workers	144	2,202	Bachelor's degree
21-1013	Marriage and Family Therapists	119	1,844	Master's degree
15-2041	Statisticians	118	825	Master's degree
17-2081	Environmental Engineers	114	1,114	Bachelor's degree
23-1011	Lawyers	114	1,077	Doctoral or professional degree
21-1015	Rehabilitation Counselors	111	1,640	Master's degree
25-9045	Teaching Assistants, Except Postsecondary	110	1,411	Some college, no degree
27-3023	News Analysts, Reporters, and Journalists	105	1,726	Bachelor's degree
19-3032	Industrial-Organizational Psychologists	102	1,473	Master's degree
19-3039	Psychologists, All Other	102	1,505	Master's degree
21-1012	Educational, Guidance, and Career Counselors and Advisors	102	1,527	Master's degree
29-1223	Psychiatrists	102	1,473	Doctoral or professional degree

Note: Includes only occupations requiring more than a high school education and with at least 100 completions in 2020.

Source: Emsi



Appendix III: Healthcare Industry Cluster Analysis



Key Takeaways

Healthcare is the largest cluster in New Hampshire. It has above average earnings, employment growth, and is a major contributor to the state's GRP. Just over 2,800 jobs were lost at the outset of the COVID-19 pandemic; however, employment has since recovered and even exceeds 2016 levels. In addition to top Healthcare Practitioners and Technical occupations – such as physicians and nurses – many top occupations are related to management, training, and human resources, which aligns with trends in other clusters.

- Healthcare is the largest cluster in the state with 98,682 workers (14% of the workforce).
- The Healthcare cluster is experiencing moderate growth of 6% between 2016 – 2026. The pandemic caused a 3% contraction between 2019 and 2021; however, the cluster was growing prior to the pandemic and is expected to continue through 2026. It has already recovered to pre-pandemic employment levels.
- New Hampshire has above average earnings in Healthcare than expected for an area this size (\$77,187 compared to \$73,280).
- The Healthcare cluster is the second largest contributor to GRP (9%, behind Manufacturing at 13%), but are some of the least productive employees (\$88,162 followed by Hospitality at \$49,218). As a labor intensive, non-goods producing cluster, this is expected and follows national trends.
- Healthcare has the lowest industry concentration of all the clusters, and it is the only cluster whose concentration is decreasing over time. The cluster's location quotient reduced from 0.98 in 2019 to 0.97 in 2021, and it is expected to decrease to 0.94 by 2026. Overall, industry concentration is expected to decrease by 4% from 2016 to 2026.

Top Industries

- Child Day Care Services
- Community Food Services
- Family Planning Centers
- Freestanding Ambulatory Surgical & Emergency Centers
- General Medical & Surgical Hospitals
- Offices of Physicians (except Mental Health Specialists)
- Offices of Physicians, Mental Health Specialists
- Other Residential Care Facilities
- Outpatient Mental Health & Substance Abuse Centers
- Research & Development in Biotechnology (except Nanobiotechnology)

Top Occupations

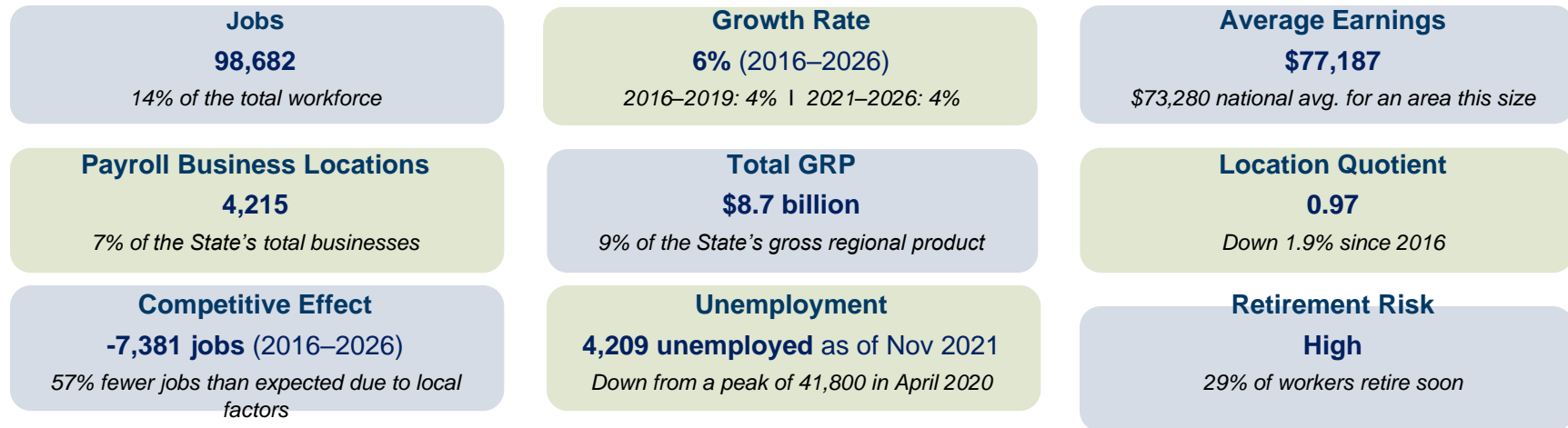
- All Other Project Management Specialists and Business Operations Specialists
- Human Resources Specialists
- Mental Health and Substance Abuse Social Workers
- Physicians, All Other; and Ophthalmologists, Except Pediatric
- Registered Nurses
- Social and Community Service Managers
- Speech-Language Pathologists
- Training and Development Specialists



Overview

Healthcare is the largest industry cluster in the State, encompassing all industries in the Health Care and Social Assistance sector (NAICS 62) plus *Research and Development in Biotechnology (except Nanotechnology)* and in the *Physical, Engineering, and Life Sciences (except Nanotechnology)* (NAICS 541714 and 541715), *Voluntary Health Organizations* (NAICS 813212), and *State and Local Government Hospitals* (NAICS 902622 and 903622). See

Appendix C for a full list of the industries included in this cluster.



Top Industries (6-digit NAICS)

By Employment

1. General Medical & Surgical Hospitals (27,612)
2. Offices of Physicians (except Mental Health Specialists) (14,815)
3. Child Day Care Services (6,305)

By Location Quotient

1. Outpatient Mental Health & Substance Abuse Centers (2.49)
2. Family Planning Centers (1.74)
3. Community Food Services (1.71)

By Growth Rate (2016–2021)

1. Research & Development in Biotechnology (except Nanobiotechnology) (62%)
2. Offices of Physicians, Mental Health Specialists (54%)
3. Freestanding Ambulatory Surgical & Emergency Centers (52%)

By Competitive Effect (Shift-Share)

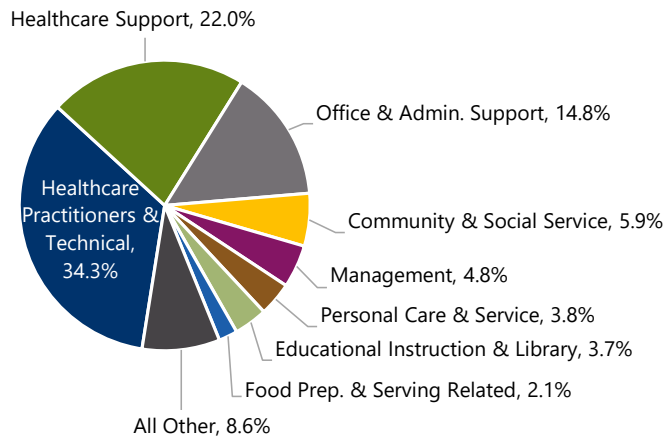
1. Offices of Physicians (except Mental Health Specialists) (492)
2. Other Residential Care Facilities (430)
3. Freestanding Ambulatory Surgical & Emergency Centers (395)



Staffing Pattern

There are 98,682 jobs in the Healthcare industry cluster, spread across approximately 396 occupations. See Appendix D for the full staffing pattern. The top 30 occupations in terms of share of employment are shown to the right. Together, these 30 occupations account for 69% of the cluster's total employment. *Registered Nurses* account for 13% of the cluster's jobs, followed by *Home Health and Personal Care Aides* (8%), *Nursing Assistants* (7%), *Medical Secretaries and Administrative Assistants* (3%), and *Medical Assistants* (3%).

Staffing for Healthcare Cluster by 2-Digit Occupation



Source: Emsi, 2022.1

Staffing Pattern for Healthcare Cluster: Top 30 Occupations, 5 digit SOC

Occupation	Share of Cluster's 2021 Jobs
Registered Nurses	12.9%
Home Health and Personal Care Aides	7.9%
Nursing Assistants	7.1%
Medical Secretaries and Administrative Assistants	3.2%
Medical Assistants	2.9%
Childcare Workers	2.4%
Receptionists and Information Clerks	2.3%
Preschool Teachers, Except Special Education	2.1%
Office Clerks, General	2.1%
Licensed Practical and Licensed Vocational Nurses	1.9%
Substance Abuse, Behavioral Disorder, and Mental Health Counselors	1.9%
Medical and Health Services Managers	1.8%
Physicians, All Other; and Ophthalmologists, Except Pediatric	1.7%
Dental Hygienists	1.6%
Dental Assistants	1.3%
Social and Human Service Assistants	1.3%
First-Line Supervisors of Office and Administrative Support Workers	1.3%
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	1.3%
Physical Therapists	1.2%
Teaching Assistants, Except Postsecondary	1.2%
Billing and Posting Clerks	1.1%
Nurse Practitioners	1.1%
Medical Dosimetrists, Medical Records Specialists, and Health Technologists and Technicians, All Other	1.0%
Radiologic Technologists and Technicians	1.0%
Occupational Therapists	0.9%
Interviewers, Except Eligibility and Loan	0.9%
Emergency Medical Technicians and Paramedics	0.9%
Maids and Housekeeping Cleaners	0.8%
Food Servers, Nonrestaurant	0.8%
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	0.8%
Total	68.7%

Source: Emsi, 2022.1



Job Growth Trends by Occupation

Historical and projected job growth trends for the top 8 occupation sectors within the Healthcare cluster are shown below (note the top 3 sectors plotted on the right y-axis). These 8 sectors account for 91% of jobs in the cluster in 2021.

2016–2026

Overall, the top Healthcare occupation sectors are growing moderately over the 10-year period, projected to increase by 5%. These gains are primarily concentrated in the *Management* (26%) and *Community and Social Service* (25%) occupations. *Personal Care and Service* occupations lost jobs over the period, shrinking by 14% from 2016 to 2026, followed by *Food Preparation and Serving Related* (-8%) and *Educational Instruction and Library* (-1%).

2016–2019

Prior to the COVID-19 pandemic, occupational employment within the Healthcare cluster grew at an overall rate of 4%. Jobs in the *Management* (17%), *Community and Social Service* (14%), and *Educational Instruction and Library* (12%) occupations were growing fastest, while *Personal Care and Service* (-8%), *Food Preparation and Serving Related* (-4%), and *Healthcare Support* (-1%) occupations all lost jobs.

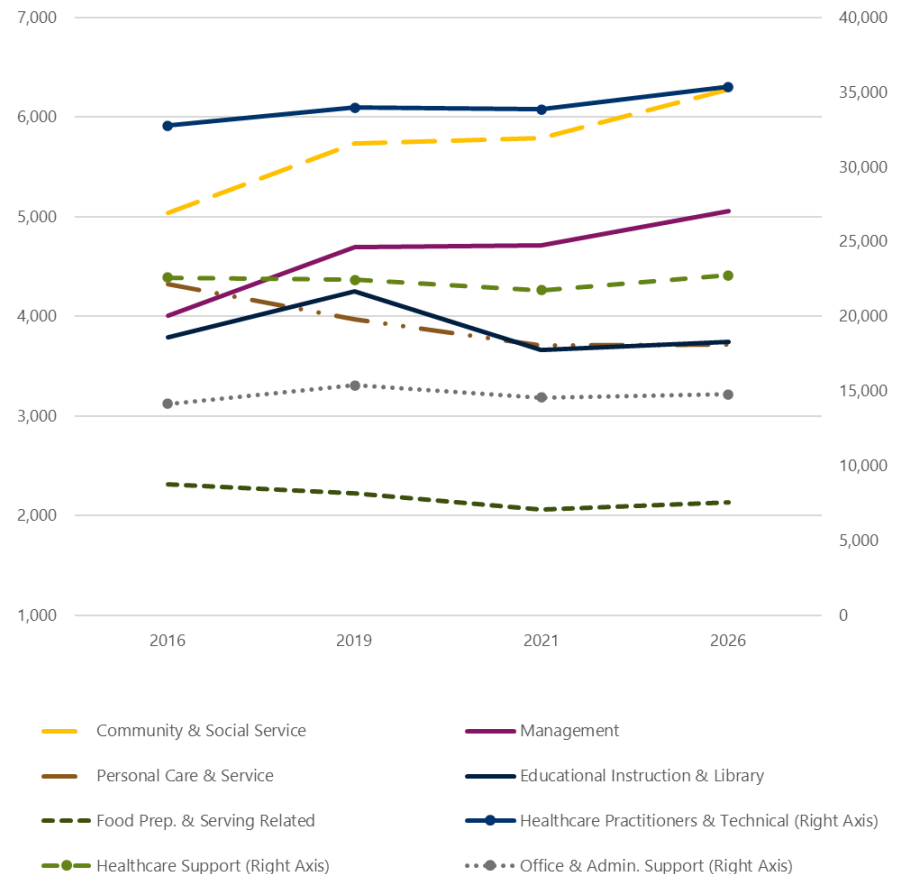
2019–2021

During the pandemic, New Hampshire lost about 3% of its Healthcare jobs. Six of the top 8 sectors experienced job losses, with *Educational Instruction and Library* occupations shrinking by 14%, followed by *Food Preparation and Serving Related* (-7%) and *Personal Care and Service* (-6%). *Community and Social Service* and *Management* occupations were the least affected by the pandemic, increasing by 1% and 0.3%, respectively.

2021–2026

Looking forward, all major sectors are projected to grow from 2021 to 2026. Total cluster employment is expected to increase

Healthcare Cluster Job Growth by 2 Digit Occupation



Source: Emsi, 2022.1

by 4%, with *Community and Social Service* (8%), *Management* (7%), and *Healthcare Support* (5%) growing the fastest.

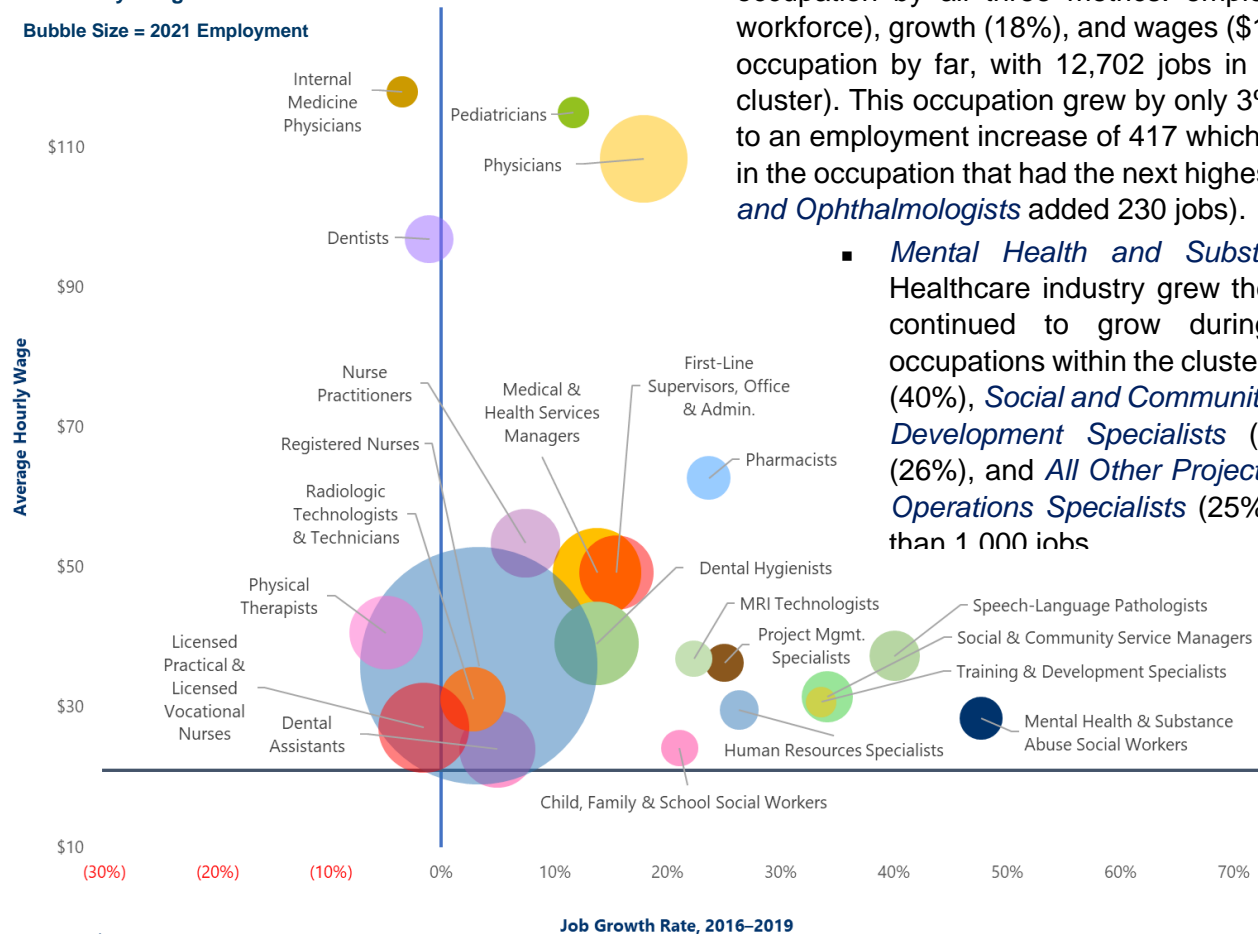


Top Occupations

The occupations below are the 23 top occupations in New Hampshire's Healthcare cluster, as determined by size (represented by bubble size), growth (plotted on the x-axis), and salary (plotted on the y-axis). For this analysis, occupations employing fewer than 200 Healthcare workers, with growth rates below -5.0% between 2016–2019 (pre-COVID data is assumed to be a better indicator of the occupation's overall trajectory), and earnings less than \$21.16

Top Occupations in the Healthcare Cluster by 5-digit SOC

Bubble Size = 2021 Employment



- Ophthalmologists, Except Pediatric, and All Other Physicians*** is a top Healthcare occupation by all three metrics: employment (1,719 or 1.7% of total cluster workforce), growth (18%), and wages (\$108.38). ***Registered Nurses*** is the largest occupation by far, with 12,702 jobs in 2021 (13% of total employment in this cluster). This occupation grew by only 3% pre-pandemic; however, that amounts to an employment increase of 417 which is nearly double the employment added in the occupation that had the next highest increase in jobs (***Physicians, All Other; and Ophthalmologists*** added 230 jobs).

- Mental Health and Substance Abuse Social Workers*** in the Healthcare industry grew the fastest from 2016 to 2019 (48%) and continued to grow during the pandemic. Other fast-growth occupations within the cluster include ***Speech-Language Pathologists*** (40%), ***Social and Community Service Managers*** (34%), ***Training and Development Specialists*** (34%), ***Human Resources Specialists*** (26%), and ***All Other Project Management Specialists and Business Operations Specialists*** (25%). All of these occupations have fewer than 1,000 jobs.

- General Internal Medicine Physicians*** are the top earners within the cluster (\$117.97 per hour), followed by ***General Pediatricians*** (\$115.01), ***Ophthalmologists, Except Pediatric, and All Other Physicians*** (\$108.38), ***General Dentists*** (\$96.91), and ***Pharmacists*** (\$62.75).

Source: Emsi, 2022.1

(the state's median hourly wage) were omitted.



Attachment 1: Healthcare Industry Cluster Definition

This cluster spans 44 industries and employs 98,682 workers. It includes all industries in the *Healthcare and Social Assistance* sector (62), as well as the *Scientific Research and Development Services* industry group (5417), and selected industries from the *Other Services (except Public Administration)* sector (81), and *Government* (90).

NAICS	Industry	2021 Jobs
621111	Offices of Physicians (except Mental Health Specialists)	14,815
621112	Offices of Physicians, Mental Health Specialists	387
621210	Offices of Dentists	5,110
621310	Offices of Chiropractors	661
621320	Offices of Optometrists	730
621330	Offices of Mental Health Practitioners (except Physicians)	750
621340	Offices of Physical, Occupational and Speech Therapists, and Audiologists	1,801
621391	Offices of Podiatrists	94
621399	Offices of All Other Miscellaneous Health Practitioners	939
621410	Family Planning Centers	236
621420	Outpatient Mental Health and Substance Abuse Centers	3,133
621491	HMO Medical Centers	0
621492	Kidney Dialysis Centers	394
621493	Freestanding Ambulatory Surgical and Emergency Centers	1,179
621498	All Other Outpatient Care Centers	643
621511	Medical Laboratories	302
621512	Diagnostic Imaging Centers	142
621610	Home Health Care Services	4,176
621910	Ambulance Services	876
621991	Blood and Organ Banks	93
621999	All Other Miscellaneous Ambulatory Health Care Services	203
622110	General Medical and Surgical Hospitals	27,612
Total		98,682

NAICS	Industry	2021 Jobs
622210	Psychiatric and Substance Abuse Hospitals	458
622310	Specialty (except Psychiatric and Substance Abuse) Hospitals	957
623110	Nursing Care Facilities (Skilled Nursing Facilities)	6,085
623210	Residential Intellectual and Developmental Disability Facilities	1,065
623220	Residential Mental Health and Substance Abuse Facilities	1,025
623311	Continuing Care Retirement Communities	3,089
623312	Assisted Living Facilities for the Elderly	1,489
623990	Other Residential Care Facilities	1,038
624110	Child and Youth Services	790
624120	Services for the Elderly and Persons with Disabilities	5,757
624190	Other Individual and Family Services	2,003
624210	Community Food Services	315
624221	Temporary Shelters	259
624229	Other Community Housing Services	247
624230	Emergency and Other Relief Services	51
624310	Vocational Rehabilitation Services	881
624410	Child Day Care Services	6,305
541714	Research and Development in Biotechnology (except Nanobiotechnology)	613
541715	Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	1,469
813212	Voluntary Health Organizations	73
902622	Hospitals (State Government)	436
903622	Hospitals (Local Government)	0

Source: Emsi, 2022.3



Attachment 2: Healthcare Cluster Staffing Pattern

The top 77 occupations (e.g. all occupations with more than 200 Healthcare employees) represent 87.7% of all employment in the Healthcare Cluster. Altogether, employment spans 355 occupations for a total of 98,682 jobs.

Staffing Patterns for the Healthcare Cluster, 2021

SOC	Occupation	Share of Cluster's Jobs	Jobs in Cluster (2021)	Median Hourly Earnings	Job Growth 2016–2021		Job Growth 2016–2019	
					Change	Rate	Change	Rate
29-1141	Registered Nurses	12.9%	12,702	\$35.97	156	1%	417	3%
31-1128	Home Health and Personal Care Aides	7.9%	7,818	\$13.51	(525)	(6%)	(330)	(4%)
31-1131	Nursing Assistants	7.1%	7,056	\$16.35	(784)	(10%)	(210)	(3%)
43-6013	Medical Secretaries and Administrative Assistants	3.2%	3,192	\$18.97	439	16%	535	19%
31-9092	Medical Assistants	2.9%	2,831	\$18.37	403	17%	315	13%
39-9011	Childcare Workers	2.4%	2,382	\$10.97	(547)	(19%)	(429)	(15%)
43-4171	Receptionists and Information Clerks	2.3%	2,298	\$15.72	(27)	(1%)	126	5%
25-2011	Preschool Teachers, Except Special Education	2.1%	2,100	\$14.68	(86)	(4%)	330	15%
43-9061	Office Clerks, General	2.1%	2,060	\$19.12	149	8%	203	11%
29-2061	Licensed Practical and Licensed Vocational Nurses	1.9%	1,866	\$27.11	(94)	(5%)	(31)	(2%)
21-1018	Substance Abuse, Behavioral Disorder, and Mental Health Counselors	1.9%	1,858	\$20.73	518	39%	368	27%
11-9111	Medical and Health Services Managers	1.8%	1,784	\$49.29	217	14%	216	14%
29-1228	Physicians, All Other; and Ophthalmologists, Except Pediatric	1.7%	1,719	\$108.38	435	34%	230	18%
29-1292	Dental Hygienists	1.6%	1,598	\$39.15	227	17%	188	14%
31-9091	Dental Assistants	1.3%	1,319	\$24.04	73	6%	62	5%
21-1093	Social and Human Service Assistants	1.3%	1,280	\$16.67	(94)	(7%)	3	0%
43-1011	First-Line Supervisors of Office and Administrative Support Workers	1.3%	1,268	\$28.94	125	11%	177	15%
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	1.3%	1,242	\$18.80	(144)	(10%)	(32)	(2%)
29-1123	Physical Therapists	1.2%	1,226	\$40.67	(94)	(7%)	(65)	(5%)
25-9045	Teaching Assistants, Except Postsecondary	1.2%	1,204	\$15.58	41	4%	201	17%
43-3021	Billing and Posting Clerks	1.1%	1,086	\$19.58	105	11%	167	17%
29-1171	Nurse Practitioners	1.1%	1,069	\$53.48	140	15%	69	7%

Staffing Patterns for the Healthcare Cluster, 2021 (continued)

SOC	Occupation	Share of Cluster's Jobs	Jobs in Cluster (2021)	Median Hourly Earnings	Job Growth 2016–2021		Job Growth 2016–2019	
					Change	Rate	Change	Rate
29-2098	Medical Dosimetrists, Medical Records Specialists, and Health Technologists and Technicians, All Other	1.0%	990	\$20.89	(74)	(7%)	(13)	(1%)
29-2034	Radiologic Technologists and Technicians	1.0%	941	\$31.23	(38)	(4%)	27	3%
29-1122	Occupational Therapists	0.9%	870	\$38.78	87	11%	79	10%
43-4111	Interviewers, Except Eligibility and Loan	0.9%	867	\$19.24	(43)	(5%)	43	5%
29-2041	Emergency Medical Technicians and Paramedics	0.9%	841	\$17.54	(38)	(4%)	1	0%
37-2012	Maids and Housekeeping Cleaners	0.8%	799	\$13.16	(339)	(30%)	(233)	(20%)
35-3041	Food Servers, Nonrestaurant	0.8%	787	\$11.95	109	16%	118	17%
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	0.8%	772	\$14.62	(20)	(3%)	49	6%
29-1215	Family Medicine Physicians	0.7%	725	\$116.08	(125)	(15%)	(49)	(6%)
11-1021	General and Operations Managers	0.7%	699	\$50.64	21	3%	69	10%
31-9097	Phlebotomists	0.7%	682	\$18.53	(18)	(3%)	12	2%
35-2012	Cooks, Institution and Cafeteria	0.7%	681	\$16.93	(10)	(1%)	(9)	(1%)
29-2018	Clinical Laboratory Technologists and Technicians	0.7%	653	\$32.03	(126)	(16%)	(117)	(15%)
43-4051	Customer Service Representatives	0.7%	651	\$18.39	173	36%	202	42%
29-1071	Physician Assistants	0.6%	619	\$57.23	21	4%	11	2%
11-9151	Social and Community Service Managers	0.6%	592	\$31.54	156	36%	149	34%
29-1127	Speech-Language Pathologists	0.6%	566	\$37.36	194	52%	149	40%
43-3031	Bookkeeping, Accounting, and Auditing Clerks	0.6%	556	\$20.67	(33)	(6%)	20	3%
29-1021	Dentists, General	0.5%	527	\$96.91	(19)	(3%)	(6)	(1%)
21-1022	Healthcare Social Workers	0.5%	516	\$31.33	34	7%	15	3%
39-9032	Recreation Workers	0.5%	488	\$13.60	(33)	(6%)	32	6%
29-2055	Surgical Technologists	0.5%	445	\$25.28	(6)	(1%)	5	1%
29-1248	Surgeons, Except Ophthalmologists	0.4%	443	\$116.66	(53)	(11%)	(61)	(12%)
49-9071	Maintenance and Repair Workers, General	0.4%	434	\$21.42	35	9%	59	15%
29-1051	Pharmacists	0.4%	431	\$62.75	84	24%	82	24%
21-1023	Mental Health and Substance Abuse Social Workers	0.4%	417	\$28.50	145	53%	130	48%
29-1126	Respiratory Therapists	0.4%	406	\$34.04	(7)	(2%)	14	3%
29-2052	Pharmacy Technicians	0.4%	395	\$16.75	79	25%	94	30%
11-9031	Education and Childcare Administrators, Preschool and Daycare	0.4%	390	\$22.10	13	4%	44	12%
29-2057	Ophthalmic Medical Technicians	0.4%	384	\$20.58	187	95%	17	9%

Staffing Patterns for the Healthcare Cluster, 2021 (continued)

SOC	Occupation	Share of Cluster's Jobs	Jobs in Cluster (2021)	Median Hourly Earnings	Job Growth 2016–2021		Job Growth 2016–2019	
					Change	Rate	Change	Rate
29-9098	Health Information Technologists, Medical Registrars, Surgical Assistants,	0.4%	381	\$30.36	71	23%	29	9%
39-9041	Residential Advisors	0.4%	369	\$14.55	44	13%	3	1%
19-3039	Psychologists, All Other	0.4%	369	\$41.51	91	33%	28	10%
13-1071	Human Resources Specialists	0.4%	347	\$29.65	73	27%	72	26%
31-2021	Physical Therapist Assistants	0.3%	345	\$29.83	(88)	(20%)	(91)	(21%)
13-1198	Project Management Specialists and Business Operations Specialists, All Other	0.3%	335	\$36.37	88	36%	62	25%
31-9093	Medical Equipment Preparers	0.3%	320	\$18.30	16	5%	27	9%
19-3031	Clinical, Counseling, and School Psychologists	0.3%	311	\$36.83	(3)	(1%)	(15)	(5%)
29-2035	Magnetic Resonance Imaging Technologists	0.3%	309	\$36.98	48	19%	58	22%
21-1021	Child, Family, and School Social Workers	0.3%	305	\$24.22	43	17%	55	21%
29-2031	Cardiovascular Technologists and Technicians	0.3%	304	\$33.88	32	12%	49	18%
31-9099	Healthcare Support Workers, All Other	0.3%	297	\$16.13	73	33%	52	23%
29-1011	Chiropractors	0.3%	279	\$33.18	6	2%	(0)	(0%)
31-1133	Psychiatric Aides	0.3%	268	\$18.80	34	15%	24	10%
39-1098	First-Line Supervisors of Personal Service and Entertainment and Recreation Workers, Except Gambling Services	0.3%	264	\$21.21	(107)	(29%)	(9)	(2%)
29-1031	Dietitians and Nutritionists	0.3%	263	\$30.97	17	7%	18	7%
13-2011	Accountants and Auditors	0.3%	260	\$33.25	11	5%	27	11%
29-2032	Diagnostic Medical Sonographers	0.3%	252	\$39.64	6	2%	9	4%
21-1015	Rehabilitation Counselors	0.3%	249	\$20.46	0	0%	20	8%
29-2081	Opticians, Dispensing	0.2%	230	\$19.92	(47)	(17%)	(24)	(9%)
29-1216	General Internal Medicine Physicians	0.2%	226	\$117.97	43	23%	(6)	(3%)
29-1221	Pediatricians, General	0.2%	220	\$115.01	2	1%	25	12%
33-9032	Security Guards	0.2%	211	\$15.79	18	9%	5	2%
53-3058	Passenger Vehicle Drivers, Except Bus Drivers, Transit and Intercity	0.2%	207	\$14.52	(45)	(18%)	(18)	(7%)
13-1151	Training and Development Specialists	0.2%	204	\$30.79	60	42%	48	34%

Source: Emsi, 2022.1



Appendix IV: Manufacturing Industry Cluster Analysis



Key Takeaways

Manufacturing is crucial to New Hampshire's economy, accounting for a large share of employment, contributing the largest share of the State's GRP, and offering higher than average earnings. However, the State does not have a strong competitive advantage in this sector and is expected to continue losing jobs. Overall, jobs in this sector are becoming more technical in nature.

- The Manufacturing cluster employs 69,844 workers, or 10% of the total workforce.
- The Manufacturing cluster is in decline. It was deeply impacted by the COVID-19 pandemic, losing just over 4,300 jobs between 2019 and 2021. However, unlike other clusters that experienced losses due to the pandemic, the Manufacturing cluster is not projected to grow through 2026. Prior to the pandemic, the cluster was experiencing moderate growth of 5%.
- Average earnings in the Manufacturing cluster are higher than expected for an area this size.
- The Manufacturing cluster is the top contributor to New Hampshire's GRP (13%) and has the second most productive workers (\$174,676 following \$259,245 for Technology). This is in keeping with national trends, as Manufacturing tends to be a capital-intensive industry.
- Manufacturing has the largest businesses among the clusters.
- The State has a slightly higher concentration relative to the US in Manufacturing, which has remained steady since 2016.
- New Hampshire does not have a competitive advantage in Manufacturing, with 1,161 fewer jobs than expected between 2016 and 2026 due to local factors. This means there are 1065% fewer jobs in this cluster than expected if national and industry growth trends were the only factors.
- Manufacturing has the highest retirement risk of the State's clusters.
- Nearly half of all jobs within the cluster are in the Production occupation sector (47%). Overall, Production occupations are declining as Manufacturing is becoming more reliant on technology and automation. Computer and Mathematical occupations are growing the fastest within this cluster, while Production is expected to decrease.

Top Industries

- Fastener, Button, Needle & Pin Manufacturing
- In-Vitro Diagnostic Substance Manufacturing
- Machine Shops
- Nonferrous Metal Die-Casting Foundries
- Optical Instrument & Lens Manufacturing
- Other Electronic Component Manufacturing
- Rolled Steel Shape Manufacturing
- Search, Detection, Navigation, Guidance, Aeronautical & Nautical System & Instrument Manufacturing
- Small Arms, Ordnance & Ordnance Accessories Manufacturing

Top Occupations

- Architectural and Engineering Managers
- Business Operations Specialists, All Other
- Computer and Information Systems Managers
- Electricians
- Human Resource Specialists
- Industrial Engineers
- Industrial Production Managers
- Logisticians
- Mechanical Engineering Technologists and Techs
- Mechanical Engineers
- Project Management Specialists
- Purchasing Managers
- Rolling Machine Setters, Operators, and Tenders in Metal and Plastic
- Sales Managers
- Software Developers and Software Quality Assurance Analysts and Testers

- The Manufacturing cluster has the most diversification across occupations. The top 30 occupations account for only 58% of total employment (in the other clusters, the top 30 occupations account for at least 69% of all employment).



Overview

Manufacturing is the second largest industry cluster in the State. This cluster includes all industries in the *Manufacturing* sector (NAICS 31-33) plus *Forestry and Logging* (NAICS 113). See Appendix C for a full list of the industries included in this cluster.

Jobs

69,844

Accounts for 10% of the total workforce

Growth Rate

-2% (2016–2026)

2016–2019: 5% | 2021–2026: 0%

Average Earnings

\$95,041

\$91,268 national avg. for an area this size

Payroll Business Locations

2,090

4% of the State's total businesses

Total GRP

\$12.2B

13% of the State's gross regional product

Location Quotient

1.24

Up 0.9% since 2016

Competitive Effect

-1,161 jobs (2016–2026)

1065% fewer jobs than expected due to local factors

Unemployment

2,245 unemployed as of Nov 2021

Down from a peak of 21,319 in April 2020

Retirement Risk

High

34% of workers retire soon

Top Industries (6-digit NAICS)

By Employment

1. Search, Detection, Navigation, Guidance, Aeronautical & Nautical System & Instrument Manufacturing (7,089)
2. Machine Shops (2,756)
3. Optical Instrument & Lens Manufacturing (1,912)

By Location Quotient

1. Fastener, Button, Needle & Pin Manufacturing (26.2)
2. Optical Instrument & Lens Manufacturing (19.8)
3. Small Arms, Ordnance & Ordnance Accessories Manufacturing (18.0)

By Growth Rate (2016–2021)

1. Rolled Steel Shape Manufacturing (315%)
2. Nonferrous Metal Die-Casting Foundries (285%)
3. In-Vitro Diagnostic Substance Manufacturing (241%)

By Competitive Effect (Shift-Share)

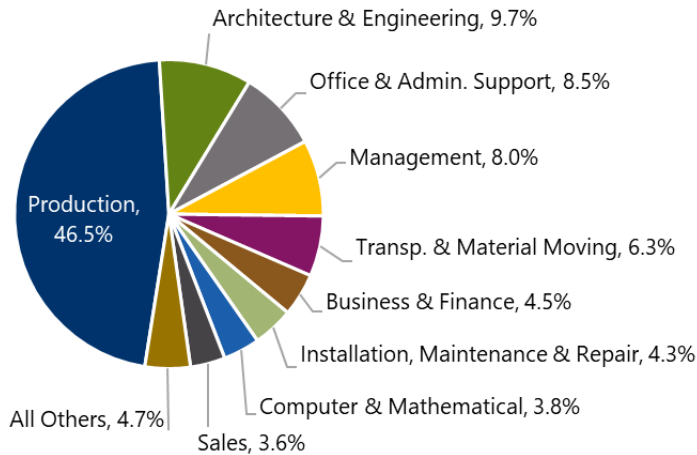
1. Search, Detection, Navigation, Guidance, Aeronautical & Nautical System & Instrument Manufacturing (730)
2. Optical Instrument & Lens Manufacturing (409)
3. Other Electronic Component Manufacturing (242)



Staffing Pattern

There are 69,844 jobs in the Manufacturing industry cluster, spread across approximately 196 occupations. See Appendix D for the full staffing pattern. The top 30 occupations in terms of share of employment are shown to the right. Together, these 30 occupations account for 58% of the cluster's total employment. *Production* occupations account for 47% of the cluster's jobs, followed by *Architecture and Engineering* (10%), *Office and Administrative Support* (9%), *Management* (8%), and *Transportation and Material Moving* (6%).

Staffing for Manufacturing Cluster by 2-Digit Occupation



Source: Emsi, 2022.1

Staffing Pattern for Manufacturing Cluster: Top 30 Occupations, 5 digit SOC

Occupation	Share of Cluster's 2021 Jobs
Miscellaneous Assemblers and Fabricators	6.0%
Electrical, Electronic, and Electromechanical Assemblers	4.5%
Computer Numerically Controlled Tool Operators	3.8%
Inspectors, Testers, Sorters, Samplers, and Weighers	3.5%
First-Line Supervisors of Production and Operating Workers	3.2%
Machinists	2.6%
Software Developers and Software Quality Assurance Analysts and Testers	2.2%
Industrial Engineers	2.2%
Mechanical Engineers	2.2%
General and Operations Managers	2.1%
Sales Representatives, Wholesale and Manufacturing	1.9%
Shipping, Receiving, and Inventory Clerks	1.9%
Industrial Machinery Mechanics	1.8%
Packers and Packagers, Hand	1.5%
Office Clerks, General	1.5%
Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	1.5%
Electrical Engineers	1.4%
Packaging and Filling Machine Operators and Tenders	1.3%
Industrial Production Managers	1.3%
Laborers and Freight, Stock, and Material Movers, Hand	1.1%
Helpers--Production Workers	1.1%
Welders, Cutters, Solderers, and Brazers	1.1%
Rolling Machine Setters, Operators, and Tenders, Metal and Plastic	1.1%
Molding, Coremaking, and Casting Machine Setters, Metal and Plastic	1.1%
Buyers and Purchasing Agents	1.1%
Heavy and Tractor-Trailer Truck Drivers	1.1%
Maintenance and Repair Workers, General	1.1%
Customer Service Representatives	1.0%
Architectural and Engineering Managers	1.0%
Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Metal and Plastic	1.0%
Total	58.2%

Source: Emsi, 2022.1



Job Growth Trends by Occupation

Historical and projected job growth trends for the top 9 occupation sectors within the Manufacturing cluster are shown below (note the Production sector plotted on the right y-axis). These 9 sectors account for 95% of jobs in the cluster in 2021.

2016–2026

Overall, the top Manufacturing occupation sectors are declining slightly over the 10-year period, projected to lose a total of 2% of jobs. These losses are primarily concentrated in the *Production* (-8%) and *Office and Administrative Support* (-7%) occupations. *Computer and Mathematical* occupations are growing the fastest, with a 20% growth rate from 2016 to 2026, followed by *Business and Financial Operations* (16%) and *Transportation and Material Moving* (11%).

2016–2019

Prior to the COVID-19 pandemic, all occupation sectors were growing within the Manufacturing cluster for an overall rate of 5%. Jobs in the *Computer and Mathematical* (23%), *Business and Financial Operations* (17%), and *Transportation and Material Moving* (12%) occupations were growing fastest, while *Production* jobs were stagnant at 1%.

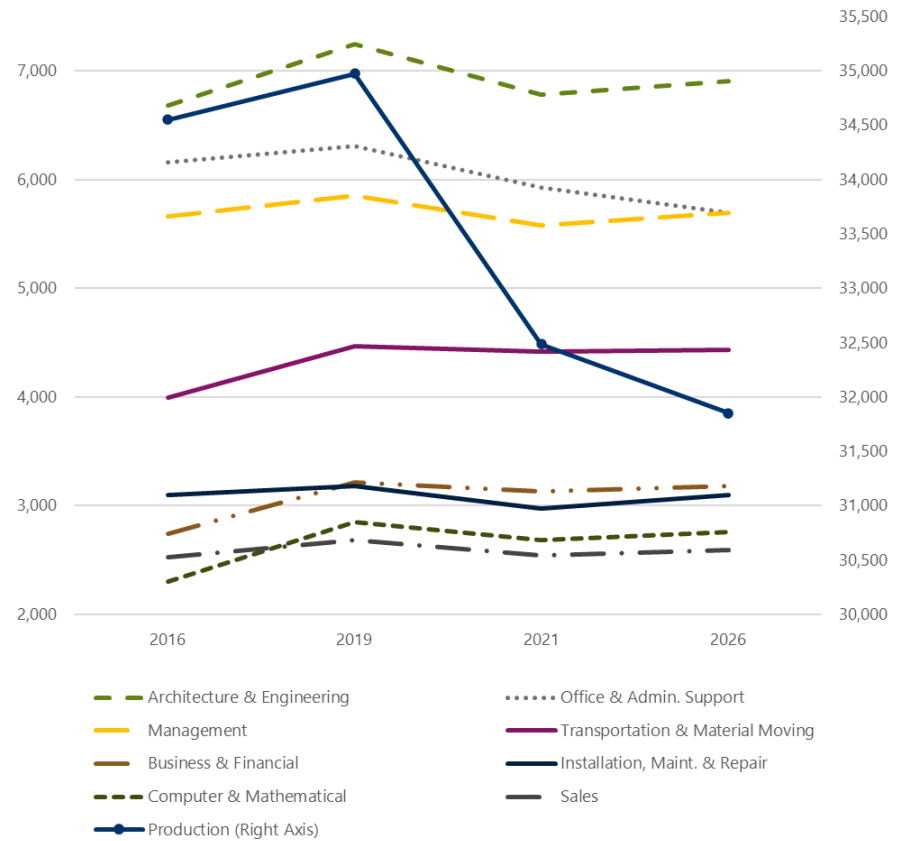
2019–2021

During the pandemic, New Hampshire lost about 6% of its Manufacturing jobs in these occupation sectors. All these sectors experienced job losses, but *Production* occupations were hit the hardest (-7%), followed by *Architecture and Engineering* (-6%), and *Installation, Maintenance, and Repair* (-6%). *Transportation and Material Moving* occupations were the least affected by the pandemic, losing only 1% of jobs.

2021–2026

Looking forward, all sectors are projected to grow except for *Production* (-2%) and *Office and Administrative Support* (-4%). *Installation, Maintenance, and Repair* occupations are expected to grow the fastest, at 4% over the next few years.

Manufacturing Cluster Job Growth by 2 Digit Occupation



Source: Emsi, 2022.1



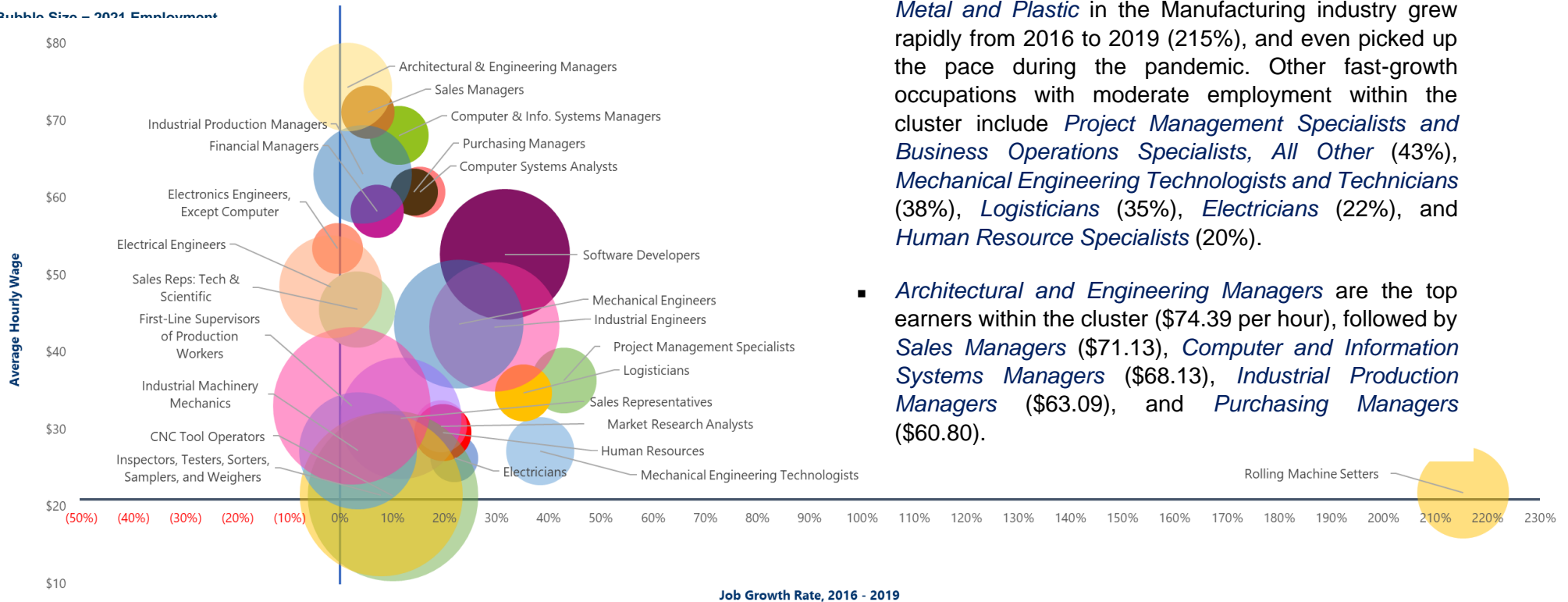
Top Occupations

The occupations below are the 25 top occupations in New Hampshire's Manufacturing cluster, as determined by size (represented by bubble size), growth (plotted on the x-axis), and salary (plotted on the y-axis). For this analysis, occupations employing fewer than 200 Manufacturing workers, with growth rates below -5.0% between 2016–2019 (pre-COVID data is assumed to be a better indicator of the occupation's overall trajectory), and earnings less than \$21.16 (the state's median hourly wage) were omitted.

- Software Developers and Software Quality Assurance Analysts and Testers is a top Manufacturing occupation by all three metrics: employment (1,546 or 2.2% of total workforce), growth (32%), and wages (\$52.70). Mechanical Engineers and Industrial Engineers were also a major source of cluster jobs (1,525 and 1,537 respectively) with high growth rates (23% and

Top Occupations in the Manufacturing Cluster by 5-digit SOC

Bubble Size = 2021 Employment



Source: Emsi, 2022.1, 5-digit SOC code

29%) and relatively high wages (\$43.68 and \$43.31).



Attachment 1: Manufacturing Industry Cluster Definition

This cluster spans 363 industries and employs 69,844 workers. It includes all industries in the *Manufacturing* sector (31-33), as well as the *Forest and Logging* subsector (113).

NAICS	Industry	2021 Jobs
113110	Timber Tract Operations	48
113210	Forest Nurseries and Gathering of Forest Products	<10
113310	Logging	798
311111	Dog and Cat Food Manufacturing	32
311119	Other Animal Food Manufacturing	31
311211	Flour Milling	0
311212	Rice Milling	0
311213	Malt Manufacturing	0
311221	Wet Corn Milling	0
311224	Soybean and Other Oilseed Processing	0
311225	Fats and Oils Refining and Blending	<10
311230	Breakfast Cereal Manufacturing	0
311313	Beet Sugar Manufacturing	0
311314	Cane Sugar Manufacturing	63
311340	Nonchocolate Confectionery Manufacturing	<10
311351	Chocolate and Confectionery Manufacturing from Cacao Beans	648
311352	Confectionery Manufacturing from Purchased Chocolate	118
311411	Frozen Fruit, Juice, and Vegetable Manufacturing	0
311412	Frozen Specialty Food Manufacturing	14
311421	Fruit and Vegetable Canning	30
311422	Specialty Canning	0
311423	Dried and Dehydrated Food Manufacturing	0

NAICS	Industry	2021 Jobs
311511	Fluid Milk Manufacturing	604
311512	Creamery Butter Manufacturing	0
311513	Cheese Manufacturing	14
311514	Dry, Condensed, and Evaporated Dairy Product Manufacturing	0
311520	Ice Cream and Frozen Dessert Manufacturing	17
311611	Animal (except Poultry) Slaughtering	40
311612	Meat Processed from Carcasses	53
311613	Rendering and Meat Byproduct Processing	0
311615	Poultry Processing	0
311710	Seafood Product Preparation and Packaging	212
311811	Retail Bakeries	158
311812	Commercial Bakeries	178
311813	Frozen Cakes, Pies, and Other Pastries Manufacturing	188
311821	Cookie and Cracker Manufacturing	22
311824	Dry Pasta, Dough, and Flour Mixes Manufacturing from Purchased Flour	142
311830	Tortilla Manufacturing	0
311911	Roasted Nuts and Peanut Butter Manufacturing	0
311919	Other Snack Food Manufacturing	<10
311920	Coffee and Tea Manufacturing	43
311930	Flavoring Syrup and Concentrate Manufacturing	31
311941	Mayonnaise, Dressing, and Other Prepared Sauce Manufacturing	29
311942	Spice and Extract Manufacturing	0

Manufacturing Industry Cluster (continued)

NAICS	Industry	2021 Jobs
311991	Perishable Prepared Food Manufacturing	83
311999	All Other Miscellaneous Food Manufacturing	100
312111	Soft Drink Manufacturing	204
312112	Bottled Water Manufacturing	32
312113	Ice Manufacturing	41
312120	Breweries	878
312130	Wineries	138
312140	Distilleries	51
312230	Tobacco Manufacturing	0
313110	Fiber, Yarn, and Thread Mills	12
313210	Broadwoven Fabric Mills	431
313220	Narrow Fabric Mills and Schifflli Machine Embroidery	62
313230	Nonwoven Fabric Mills	504
313240	Knit Fabric Mills	31
313310	Textile and Fabric Finishing Mills	87
313320	Fabric Coating Mills	438
314110	Carpet and Rug Mills	<10
314120	Curtain and Linen Mills	49
314910	Textile Bag and Canvas Mills	133
314994	Rope, Cordage, Twine, Tire Cord, and Tire Fabric Mills	<10
314999	All Other Miscellaneous Textile Product Mills	139
315110	Hosiery and Sock Mills	0

NAICS	Industry	2021 Jobs
315190	Other Apparel Knitting Mills	0
315210	Cut and Sew Apparel Contractors	41
315220	Men's and Boys' Cut and Sew Apparel Manufacturing	46
315240	Women's, Girls', and Infants' Cut and Sew Apparel Manufacturing	44
315280	Other Cut and Sew Apparel Manufacturing	306
315990	Apparel Accessories and Other Apparel Manufacturing	53
316110	Leather and Hide Tanning and Finishing	0
316210	Footwear Manufacturing	84
316992	Women's Handbag and Purse Manufacturing	<10
316998	All Other Leather Good and Allied Product Manufacturing	95
321113	Sawmills	642
321114	Wood Preservation	0
321211	Hardwood Veneer and Plywood Manufacturing	28
321212	Softwood Veneer and Plywood Manufacturing	15
321213	Engineered Wood Member (except Truss) Manufacturing	0
321214	Truss Manufacturing	45
321219	Reconstituted Wood Product Manufacturing	46
321911	Wood Window and Door Manufacturing	58
321912	Cut Stock, Resawing Lumber, and Planing	0
321918	Other Millwork (including Flooring)	170
321920	Wood Container and Pallet Manufacturing	104
321991	Manufactured Home (Mobile Home) Manufacturing	0

Manufacturing Industry Cluster (continued)

NAICS	Industry	2021 Jobs
321992	Prefabricated Wood Building Manufacturing	338
321999	All Other Miscellaneous Wood Product Manufacturing	203
322110	Pulp Mills	0
322121	Paper (except Newsprint) Mills	351
322122	Newsprint Mills	0
322130	Paperboard Mills	0
322211	Corrugated and Solid Fiber Box Manufacturing	82
322212	Folding Paperboard Box Manufacturing	96
322219	Other Paperboard Container Manufacturing	<10
322220	Paper Bag and Coated and Treated Paper Manufacturing	138
322230	Stationery Product Manufacturing	36
322291	Sanitary Paper Product Manufacturing	0
322299	All Other Converted Paper Product Manufacturing	67
323111	Commercial Printing (except Screen and Books)	1,321
323113	Commercial Screen Printing	519
323117	Books Printing	61
323120	Support Activities for Printing	103
324110	Petroleum Refineries	0
324121	Asphalt Paving Mixture and Block Manufacturing	87
324122	Asphalt Shingle and Coating Materials Manufacturing	93
324191	Petroleum Lubricating Oil and Grease Manufacturing	56
324199	All Other Petroleum and Coal Products Manufacturing	0

NAICS	Industry	2021 Jobs
325110	Petrochemical Manufacturing	0
325120	Industrial Gas Manufacturing	0
325130	Synthetic Dye and Pigment Manufacturing	<10
325180	Other Basic Inorganic Chemical Manufacturing	<10
325193	Ethyl Alcohol Manufacturing	0
325194	Cyclic Crude, Intermediate, and Gum and Wood Chemical Manufacturing	0
325199	All Other Basic Organic Chemical Manufacturing	34
325211	Plastics Material and Resin Manufacturing	88
325212	Synthetic Rubber Manufacturing	<10
325220	Artificial and Synthetic Fibers and Filaments Manufacturing	<10
325311	Nitrogenous Fertilizer Manufacturing	<10
325312	Phosphatic Fertilizer Manufacturing	0
325314	Fertilizer (Mixing Only) Manufacturing	<10
325320	Pesticide and Other Agricultural Chemical Manufacturing	0
325411	Medicinal and Botanical Manufacturing	0
325412	Pharmaceutical Preparation Manufacturing	495
325413	In-Vitro Diagnostic Substance Manufacturing	352
325414	Biological Product (except Diagnostic) Manufacturing	906
325510	Paint and Coating Manufacturing	36
325520	Adhesive Manufacturing	329
325611	Soap and Other Detergent Manufacturing	30
325612	Polish and Other Sanitation Good Manufacturing	<10

Manufacturing Industry Cluster (continued)

NAICS	Industry	2021 Jobs
325613	Surface Active Agent Manufacturing	0
325620	Toilet Preparation Manufacturing	139
325910	Printing Ink Manufacturing	<10
325920	Explosives Manufacturing	0
325991	Custom Compounding of Purchased Resins	<10
325992	Photographic Film, Paper, Plate, and Chemical Manufacturing	47
325998	All Other Miscellaneous Chemical Product and Preparation Manufacturing	70
326111	Plastics Bag and Pouch Manufacturing	83
326112	Plastics Packaging Film and Sheet (including Laminated) Manufacturing	78
326113	Unlaminated Plastics Film and Sheet (except Packaging) Manufacturing	74
326121	Unlaminated Plastics Profile Shape Manufacturing	965
326122	Plastics Pipe and Pipe Fitting Manufacturing	53
326130	Laminated Plastics Plate, Sheet (except Packaging), and Shape Manufacturing	543
326140	Polystyrene Foam Product Manufacturing	<10
326150	Urethane and Other Foam Product (except Polystyrene) Manufacturing	398
326160	Plastics Bottle Manufacturing	83
326191	Plastics Plumbing Fixture Manufacturing	0
326199	All Other Plastics Product Manufacturing	1,855
326211	Tire Manufacturing (except Retreading)	0
326212	Tire Retreading	90
326220	Rubber and Plastics Hoses and Belting Manufacturing	283
326291	Rubber Product Manufacturing for Mechanical Use	467

NAICS	Industry	2021 Jobs
326299	All Other Rubber Product Manufacturing	62
327110	Pottery, Ceramics, and Plumbing Fixture Manufacturing	63
327120	Clay Building Material and Refractories Manufacturing	<10
327211	Flat Glass Manufacturing	0
327212	Other Pressed and Blown Glass and Glassware Manufacturing	183
327213	Glass Container Manufacturing	0
327215	Glass Product Manufacturing Made of Purchased Glass	371
327310	Cement Manufacturing	83
327320	Ready-Mix Concrete Manufacturing	251
327331	Concrete Block and Brick Manufacturing	96
327332	Concrete Pipe Manufacturing	0
327390	Other Concrete Product Manufacturing	299
327410	Lime Manufacturing	0
327420	Gypsum Product Manufacturing	161
327910	Abrasive Product Manufacturing	72
327991	Cut Stone and Stone Product Manufacturing	252
327992	Ground or Treated Mineral and Earth Manufacturing	<10
327993	Mineral Wool Manufacturing	0
327999	All Other Miscellaneous Nonmetallic Mineral Product Manufacturing	124
331110	Iron and Steel Mills and Ferroalloy Manufacturing	<10
331210	Iron and Steel Pipe and Tube Manufacturing from Purchased Steel	22
331221	Rolled Steel Shape Manufacturing	70

Manufacturing Industry Cluster (continued)

NAICS	Industry	2021 Jobs
331222	Steel Wire Drawing	0
331313	Alumina Refining and Primary Aluminum Production	0
331314	Secondary Smelting and Alloying of Aluminum	0
331315	Aluminum Sheet, Plate, and Foil Manufacturing	<10
331318	Other Aluminum Rolling, Drawing, and Extruding	277
331410	Nonferrous Metal (except Aluminum) Smelting and Refining	21
331420	Copper Rolling, Drawing, Extruding, and Alloying	405
331491	Nonferrous Metal (except Copper and Aluminum) Rolling, Drawing, and Extruding	0
331492	Secondary Smelting, Refining, and Alloying of Nonferrous Metal (except Copper and Aluminum)	10
331511	Iron Foundries	<10
331512	Steel Investment Foundries	819
331513	Steel Foundries (except Investment)	0
331523	Nonferrous Metal Die-Casting Foundries	94
331524	Aluminum Foundries (except Die-Casting)	416
331529	Other Nonferrous Metal Foundries (except Die-Casting)	<10
332111	Iron and Steel Forging	0
332112	Nonferrous Forging	0
332114	Custom Roll Forming	20
332117	Powder Metallurgy Part Manufacturing	0
332119	Metal Crown, Closure, and Other Metal Stamping (except Automotive)	397
332215	Metal Kitchen Cookware, Utensil, Cutlery, and Flatware (except Precious) Manufacturing	<10
332216	Saw Blade and Handtool Manufacturing	21

NAICS	Industry	2021 Jobs
332311	Prefabricated Metal Building and Component Manufacturing	64
332312	Fabricated Structural Metal Manufacturing	399
332313	Plate Work Manufacturing	114
332321	Metal Window and Door Manufacturing	34
332322	Sheet Metal Work Manufacturing	942
332323	Ornamental and Architectural Metal Work Manufacturing	238
332410	Power Boiler and Heat Exchanger Manufacturing	124
332420	Metal Tank (Heavy Gauge) Manufacturing	36
332431	Metal Can Manufacturing	0
332439	Other Metal Container Manufacturing	<10
332510	Hardware Manufacturing	102
332613	Spring Manufacturing	0
332618	Other Fabricated Wire Product Manufacturing	177
332710	Machine Shops	2756
332721	Precision Turned Product Manufacturing	244
332722	Bolt, Nut, Screw, Rivet, and Washer Manufacturing	287
332811	Metal Heat Treating	81
332812	Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers	152
332813	Electroplating, Plating, Polishing, Anodizing, and Coloring	166
332911	Industrial Valve Manufacturing	239
332912	Fluid Power Valve and Hose Fitting Manufacturing	295
332913	Plumbing Fixture Fitting and Trim Manufacturing	170

Manufacturing Industry Cluster (continued)

NAICS	Industry	2021 Jobs
332919	Other Metal Valve and Pipe Fitting Manufacturing	907
332991	Ball and Roller Bearing Manufacturing	1383
332992	Small Arms Ammunition Manufacturing	11
332993	Ammunition (except Small Arms) Manufacturing	0
332994	Small Arms, Ordnance, and Ordnance Accessories Manufacturing	1883
332996	Fabricated Pipe and Pipe Fitting Manufacturing	206
332999	All Other Miscellaneous Fabricated Metal Product Manufacturing	141
333111	Farm Machinery and Equipment Manufacturing	<10
333112	Lawn and Garden Tractor and Home Lawn and Garden Equipment Manufacturing	0
333120	Construction Machinery Manufacturing	26
333131	Mining Machinery and Equipment Manufacturing	0
333132	Oil and Gas Field Machinery and Equipment Manufacturing	0
333241	Food Product Machinery Manufacturing	158
333242	Semiconductor Machinery Manufacturing	58
333243	Sawmill, Woodworking, and Paper Machinery Manufacturing	195
333244	Printing Machinery and Equipment Manufacturing	448
333249	Other Industrial Machinery Manufacturing	260
333314	Optical Instrument and Lens Manufacturing	1,912
333316	Photographic and Photocopying Equipment Manufacturing	21
333318	Other Commercial and Service Industry Machinery Manufacturing	450
333413	Industrial and Commercial Fan and Blower and Air Purification Equipment Manufacturing	144
333414	Heating Equipment (except Warm Air Furnaces) Manufacturing	157

NAICS	Industry	2021 Jobs
333415	Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing	161
333511	Industrial Mold Manufacturing	43
333514	Special Die and Tool, Die Set, Jig, and Fixture Manufacturing	191
333515	Cutting Tool and Machine Tool Accessory Manufacturing	190
333517	Machine Tool Manufacturing	1,135
333519	Rolling Mill and Other Metalworking Machinery Manufacturing	0
333611	Turbine and Turbine Generator Set Units Manufacturing	62
333612	Speed Changer, Industrial High-Speed Drive, and Gear Manufacturing	31
333613	Mechanical Power Transmission Equipment Manufacturing	42
333618	Other Engine Equipment Manufacturing	0
333912	Air and Gas Compressor Manufacturing	62
333914	Measuring, Dispensing, and Other Pumping Equipment Manufacturing	12
333921	Elevator and Moving Stairway Manufacturing	0
333922	Conveyor and Conveying Equipment Manufacturing	<10
333923	Overhead Traveling Crane, Hoist, and Monorail System Manufacturing	0
333924	Industrial Truck, Tractor, Trailer, and Stacker Machinery Manufacturing	0
333991	Power-Driven Handtool Manufacturing	0
333992	Welding and Soldering Equipment Manufacturing	56
333993	Packaging Machinery Manufacturing	40
333994	Industrial Process Furnace and Oven Manufacturing	89
333995	Fluid Power Cylinder and Actuator Manufacturing	20
333996	Fluid Power Pump and Motor Manufacturing	0

Manufacturing Industry Cluster (continued)

NAICS	Industry	2021 Jobs
333997	Scale and Balance Manufacturing	0
333999	All Other Miscellaneous General Purpose Machinery Manufacturing	1070
334111	Electronic Computer Manufacturing	292
334112	Computer Storage Device Manufacturing	98
334118	Computer Terminal and Other Computer Peripheral Equipment Manufacturing	697
334210	Telephone Apparatus Manufacturing	26
334220	Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing	226
334290	Other Communications Equipment Manufacturing	96
334310	Audio and Video Equipment Manufacturing	122
334412	Bare Printed Circuit Board Manufacturing	376
334413	Semiconductor and Related Device Manufacturing	624
334416	Capacitor, Resistor, Coil, Transformer, and Other Inductor Manufacturing	498
334417	Electronic Connector Manufacturing	410
334418	Printed Circuit Assembly (Electronic Assembly) Manufacturing	1,631
334419	Other Electronic Component Manufacturing	1712
334510	Electromedical and Electrotherapeutic Apparatus Manufacturing	249
334511	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing	7089
334512	Automatic Environmental Control Manufacturing for Residential, Commercial, and Appliance Use	209
334513	Instruments and Related Products Manufacturing for Measuring, Displaying, and Controlling Industrial Process Variables	359
334514	Totalizing Fluid Meter and Counting Device Manufacturing	<10
334515	Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals	468
334516	Analytical Laboratory Instrument Manufacturing	239

NAICS	Industry	2021 Jobs
334517	Irradiation Apparatus Manufacturing	<10
334519	Other Measuring and Controlling Device Manufacturing	181
334613	Blank Magnetic and Optical Recording Media Manufacturing	<10
334614	Software and Other Prerecorded Compact Disc, Tape, and Record Reproducing	71
335110	Electric Lamp Bulb and Part Manufacturing	434
335121	Residential Electric Lighting Fixture Manufacturing	51
335122	Commercial, Industrial, and Institutional Electric Lighting Fixture Manufacturing	435
335129	Other Lighting Equipment Manufacturing	123
335210	Small Electrical Appliance Manufacturing	0
335220	Major Household Appliance Manufacturing	<10
335311	Power, Distribution, and Specialty Transformer Manufacturing	62
335312	Motor and Generator Manufacturing	101
335313	Switchgear and Switchboard Apparatus Manufacturing	<10
335314	Relay and Industrial Control Manufacturing	82
335911	Storage Battery Manufacturing	0
335912	Primary Battery Manufacturing	<10
335921	Fiber Optic Cable Manufacturing	782
335929	Other Communication and Energy Wire Manufacturing	768
335931	Current-Carrying Wiring Device Manufacturing	769
335932	Noncurrent-Carrying Wiring Device Manufacturing	0
335991	Carbon and Graphite Product Manufacturing	84
335999	All Other Miscellaneous Electrical Equipment and Component Manufacturing	172

Manufacturing Industry Cluster (continued)

NAICS	Industry	2021 Jobs
336111	Automobile Manufacturing	<10
336112	Light Truck and Utility Vehicle Manufacturing	0
336120	Heavy Duty Truck Manufacturing	0
336211	Motor Vehicle Body Manufacturing	66
336212	Truck Trailer Manufacturing	<10
336213	Motor Home Manufacturing	0
336214	Travel Trailer and Camper Manufacturing	37
336310	Motor Vehicle Gasoline Engine and Engine Parts Manufacturing	452
336320	Motor Vehicle Electrical and Electronic Equipment Manufacturing	211
336330	Motor Vehicle Steering and Suspension Components (except Spring) Manufacturing	<10
336340	Motor Vehicle Brake System Manufacturing	0
336350	Motor Vehicle Transmission and Power Train Parts Manufacturing	30
336360	Motor Vehicle Seating and Interior Trim Manufacturing	0
336370	Motor Vehicle Metal Stamping	47
336390	Other Motor Vehicle Parts Manufacturing	<10
336411	Aircraft Manufacturing	104
336412	Aircraft Engine and Engine Parts Manufacturing	1007
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	121
336414	Guided Missile and Space Vehicle Manufacturing	0
336415	Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing	0
336419	Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing	0
336510	Railroad Rolling Stock Manufacturing	0

NAICS	Industry	2021 Jobs
336611	Ship Building and Repairing	40
336612	Boat Building	57
336991	Motorcycle, Bicycle, and Parts Manufacturing	<10
336992	Military Armored Vehicle, Tank, and Tank Component Manufacturing	0
336999	All Other Transportation Equipment Manufacturing	51
337110	Wood Kitchen Cabinet and Countertop Manufacturing	356
337121	Upholstered Household Furniture Manufacturing	<10
337122	Nonupholstered Wood Household Furniture Manufacturing	237
337124	Metal Household Furniture Manufacturing	<10
337125	Household Furniture (except Wood and Metal) Manufacturing	0
337127	Institutional Furniture Manufacturing	55
337211	Wood Office Furniture Manufacturing	0
337212	Custom Architectural Woodwork and Millwork Manufacturing	164
337214	Office Furniture (except Wood) Manufacturing	<10
337215	Showcase, Partition, Shelving, and Locker Manufacturing	77
337910	Mattress Manufacturing	12
337920	Blind and Shade Manufacturing	<10
339112	Surgical and Medical Instrument Manufacturing	1111
339113	Surgical Appliance and Supplies Manufacturing	947
339114	Dental Equipment and Supplies Manufacturing	24
339115	Ophthalmic Goods Manufacturing	30
339116	Dental Laboratories	166

Manufacturing Industry Cluster (continued)

NAICS	Industry	2021 Jobs
339910	Jewelry and Silverware Manufacturing	64
339920	Sporting and Athletic Goods Manufacturing	128
339930	Doll, Toy, and Game Manufacturing	24
339940	Office Supplies (except Paper) Manufacturing	33
339950	Sign Manufacturing	315
339991	Gasket, Packing, and Sealing Device Manufacturing	573

NAICS	Industry	2021 Jobs
339992	Musical Instrument Manufacturing	22
339993	Fastener, Button, Needle, and Pin Manufacturing	616
339994	Broom, Brush, and Mop Manufacturing	140
339995	Burial Casket Manufacturing	0
339999	All Other Miscellaneous Manufacturing	291

■ **Total** **69,844**



Attachment 2: Manufacturing Cluster Staffing Pattern

The top 77 occupations (e.g., all occupations with more than 200 Manufacturing employees) represent 82.1% of all employment in the Manufacturing Cluster. Altogether, employment spans 371 occupations for a total of 69,844 jobs.

Staffing Patterns for the Manufacturing Cluster, 2021

SOC	Occupation	Share of Cluster's Jobs	Jobs in Cluster (2021)	Median Hourly Earnings	Job Growth 2016 - 2021		Job Growth 2016 - 2019	
					Change	Rate	Change	Rate
51-2098	Miscellaneous Assemblers and Fabricators	6.0%	4,159	\$16.96	(108)	(3%)	340	8%
51-2028	Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	4.5%	3,132	\$18.33	61	2%	210	7%
51-9161	Computer Numerically Controlled Tool Operators	3.8%	2,639	\$21.43	(24)	(1%)	268	10%
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	3.5%	2,414	\$21.55	(78)	(3%)	195	8%
51-1011	First-Line Supervisors of Production and Operating Workers	3.2%	2,255	\$33.11	(69)	(3%)	51	2%
51-4041	Machinists	2.6%	1,823	\$23.68	(153)	(8%)	(49)	(2%)
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	2.2%	1,546	\$52.70	277	22%	400	32%
17-2112	Industrial Engineers	2.2%	1,537	\$43.31	325	27%	358	29%
17-2141	Mechanical Engineers	2.2%	1,525	\$43.68	189	14%	304	23%
11-1021	General and Operations Managers	2.1%	1,495	\$50.64	(163)	(10%)	(69)	(4%)
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	1.9%	1,349	\$31.48	113	9%	143	12%
43-5071	Shipping, Receiving, and Inventory Clerks	1.9%	1,348	\$17.95	347	35%	293	29%
49-9041	Industrial Machinery Mechanics	1.8%	1,256	\$27.28	(22)	(2%)	43	3%
53-7064	Packers and Packagers, Hand	1.5%	1,074	\$11.64	421	65%	389	60%
43-9061	Office Clerks, General	1.5%	1,064	\$19.12	12	1%	46	4%
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	1.5%	1,014	\$19.20	370	57%	329	51%
17-2071	Electrical Engineers	1.4%	964	\$48.53	(101)	(9%)	(20)	(2%)
51-9111	Packaging and Filling Machine Operators and Tenders	1.3%	917	\$15.14	123	15%	77	10%
11-3051	Industrial Production Managers	1.3%	885	\$63.09	(42)	(5%)	40	4%
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	1.1%	792	\$15.23	5	1%	32	4%
51-9198	Helpers--Production Workers	1.1%	785	\$16.16	(389)	(33%)	(298)	(25%)
51-4121	Welders, Cutters, Solderers, and Brazers	1.1%	782	\$22.67	81	12%	91	13%

Staffing Patterns for the Manufacturing Cluster, 2021 (continued)

SOC	Occupation	Share of Cluster's Jobs	Jobs in Cluster (2021)	Median Hourly Earnings	Job Growth 2016 - 2021		Job Growth 2016 - 2019	
					Change	Rate	Change	Rate
51-4023	Rolling Machine Setters, Operators, and Tenders, Metal and Plastic	1.1%	765	\$21.84	619	424%	314	215%
51-4072	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	1.1%	754	\$16.94	(394)	(34%)	(252)	(22%)
13-1028	Buyers and Purchasing Agents	1.1%	754	\$32.05	12	2%	60	8%
53-3032	Heavy and Tractor-Trailer Truck Drivers	1.1%	753	\$23.15	(14)	(2%)	22	3%
49-9071	Maintenance and Repair Workers, General	1.1%	739	\$21.42	(6)	(1%)	30	4%
43-4051	Customer Service Representatives	1.0%	722	\$18.39	(26)	(3%)	47	6%
11-9041	Architectural and Engineering Managers	1.0%	719	\$74.39	(43)	(6%)	11	1%
51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic	1.0%	668	\$18.17	(66)	(9%)	32	4%
51-5112	Printing Press Operators	0.9%	622	\$20.49	(95)	(13%)	(7)	(1%)
43-3031	Bookkeeping, Accounting, and Auditing Clerks	0.9%	618	\$20.67	(64)	(9%)	(1)	(0%)
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	0.8%	582	\$18.64	2	0%	10	2%
51-9199	Production Workers, All Other	0.8%	580	\$17.72	(109)	(16%)	(52)	(8%)
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	0.8%	564	\$18.80	(143)	(20%)	(49)	(7%)
11-9198	Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	0.8%	556	\$37.19	18	3%	(13)	(2%)
43-5061	Production, Planning, and Expediting Clerks	0.8%	543	\$25.70	(96)	(15%)	(17)	(3%)
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	0.8%	531	\$45.58	(82)	(13%)	20	3%
13-2011	Accountants and Auditors	0.7%	523	\$33.25	6	1%	37	7%
17-3026	Industrial Engineering Technologists and Technicians	0.7%	517	\$28.17	32	7%	74	15%
53-7065	Stockers and Order Fillers	0.7%	510	\$13.64	(98)	(16%)	(41)	(7%)
51-6031	Sewing Machine Operators	0.7%	456	\$15.08	(36)	(7%)	(13)	(3%)
17-3023	Electrical and Electronic Engineering Technologists and Technicians	0.6%	452	\$29.33	(212)	(32%)	(175)	(26%)
53-7051	Industrial Truck and Tractor Operators	0.6%	447	\$20.67	51	13%	27	7%
51-7042	Woodworking Machine Setters, Operators, and Tenders, Except Sawing	0.6%	423	\$15.76	(155)	(27%)	(87)	(15%)
17-3027	Mechanical Engineering Technologists and Technicians	0.6%	422	\$27.22	95	29%	125	38%
43-1011	First-Line Supervisors of Office and Administrative Support Workers	0.6%	418	\$28.94	(8)	(2%)	25	6%
45-4022	Logging Equipment Operators	0.6%	409	\$20.37	(11)	(3%)	21	5%
13-1198	Project Management Specialists and Business Operations Specialists, All Other	0.6%	388	\$36.37	160	70%	98	43%

Staffing Patterns for the Manufacturing Cluster, 2021 (continued)

SOC	Occupation	Share of Cluster's Jobs	Jobs in Cluster (2021)	Median Hourly Earnings	Job Growth 2016 - 2021		Job Growth 2016 - 2019	
					Change	Rate	Change	Rate
51-4023	Rolling Machine Setters, Operators, and Tenders, Metal and Plastic	1.1%	765	\$21.84	619	424%	314	215%
51-4072	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	1.1%	754	\$16.94	(394)	(34%)	(252)	(22%)
13-1028	Buyers and Purchasing Agents	1.1%	754	\$32.05	12	2%	60	8%
53-3032	Heavy and Tractor-Trailer Truck Drivers	1.1%	753	\$23.15	(14)	(2%)	22	3%
49-9071	Maintenance and Repair Workers, General	1.1%	739	\$21.42	(6)	(1%)	30	4%
43-4051	Customer Service Representatives	1.0%	722	\$18.39	(26)	(3%)	47	6%
53-7063	Machine Feeders and Offbearers	0.5%	383	\$15.45	94	32%	46	16%
11-3031	Financial Managers	0.5%	369	\$58.28	10	3%	25	7%
51-4199	Metal Workers and Plastic Workers, All Other	0.5%	350	\$17.13	66	23%	74	26%
51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	0.5%	324	\$20.28	(53)	(14%)	(30)	(8%)
51-9023	Mixing and Blending Machine Setters, Operators, and Tenders	0.5%	323	\$21.01	13	4%	21	7%
11-3021	Computer and Information Systems Managers	0.5%	315	\$68.13	31	11%	32	11%
13-1071	Human Resources Specialists	0.4%	297	\$29.65	48	19%	49	20%
13-1081	Logisticians	0.4%	294	\$34.75	67	30%	80	35%
51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	0.4%	286	\$18.12	10	4%	(5)	(2%)
51-4111	Tool and Die Makers	0.4%	273	\$28.80	16	6%	16	6%
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	0.4%	272	\$14.62	(60)	(18%)	(38)	(12%)
11-2022	Sales Managers	0.4%	258	\$71.13	9	4%	13	5%
51-9162	Computer Numerically Controlled Tool Programmers	0.4%	255	\$30.94	8	3%	2	1%
51-9081	Dental Laboratory Technicians	0.4%	248	\$20.04	35	17%	49	23%
13-1161	Market Research Analysts and Marketing Specialists	0.4%	246	\$30.45	15	7%	45	19%
51-7011	Cabinetmakers and Bench Carpenters	0.3%	243	\$21.69	(149)	(38%)	(134)	(34%)
51-3092	Food Batchmakers	0.3%	238	\$16.88	(61)	(21%)	(42)	(14%)
17-2072	Electronics Engineers, Except Computer	0.3%	237	\$53.46	(50)	(17%)	(2)	(1%)
15-1211	Computer Systems Analysts	0.3%	235	\$44.12	45	24%	29	15%
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	0.3%	228	\$34.61	(21)	(9%)	(9)	(4%)
51-9041	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	0.3%	226	\$17.21	(343)	(60%)	(261)	(46%)
15-1244	Network and Computer Systems Administrators	0.3%	222	\$41.54	8	4%	34	16%
27-1024	Graphic Designers	0.3%	219	\$22.25	(16)	(7%)	5	2%

Staffing Patterns for the Manufacturing Cluster, 2021 (continued)

SOC	Occupation	Share of Cluster's Jobs	Jobs in Cluster (2021)	Median Hourly Earnings	Job Growth 2016 - 2021		Job Growth 2016 - 2019	
					Change	Rate	Change	Rate
51-6063	Textile Knitting and Weaving Machine Setters, Operators, and Tenders	0.3%	217	\$18.27	7	3%	87	42%
51-9012	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	0.3%	208	\$32.23	(108)	(34%)	13	4%
47-2111	Electricians	0.3%	205	\$26.30	32	19%	38	22%
11-3061	Purchasing Managers	0.3%	204	\$60.80	14	7%	27	14%
51-4193	Plating Machine Setters, Operators, and Tenders, Metal and Plastic	0.3%	204	\$18.56	73	57%	79	60%

Source: Emsi, 2022.1



Appendix V: Hospitality Industry Cluster Analysis



Key Takeaways

The Hospitality industry cluster lags behind the other clusters on most indicators; however, its importance in terms of quality of life, population retention, and workforce attraction cannot be overstated. This cluster was hit particularly hard by the COVID-19 pandemic; however, there are signs of recovery. While most jobs within this cluster are not suitable for target attraction due to low wages, some of the top occupations are related to management, training, and human resources, which aligns with trends in the other clusters.

- The Hospitality industry cluster employs 60,953 workers, or 8% of the total workforce in New Hampshire. It is the third largest cluster in the state.
- With a growth rate of -8% from 2016–2026, the Hospitality cluster has experienced the slowest growth rates of all the clusters, primarily due to the COVID-19 pandemic (-12,375 for a growth rate of -12% between 2019 and 2021). However, the cluster was growing prior to the pandemic (4% from 2016–2019) and is projected to grow by 6% through 2026, though it is not expected to recover to pre-pandemic levels by then.
- The Hospitality cluster contributes the smallest share of the state’s gross regional product (only 3% of total GRP) and has the least productive workers (\$49,218 per job). As a labor-intensive, non-goods producing cluster, this is to be expected and aligns with national trends.
- The Hospitality cluster has relatively low industry concentration of 1.05; however, it is becoming more concentrated over time. The location quotient was 1.01 in 2016 and is expected to increase by 6% by 2026 to 1.07, growth that is second only to the Technology cluster.
- New Hampshire has a competitive advantage in Hospitality. Although the state’s Hospitality employment declined by 8% from 2016 to 2026 (due to the pandemic), it shrank by 26% less than expected than if it had followed national and industry trends.
- The Hospitality cluster has the lowest retirement risk of all the clusters; however, with 17% of the workforce aged 55 and over, that risk is still relatively high.
- The vast majority of jobs in this cluster are in the *Food Preparation and Serving* occupations (68%). Two of those occupations, *Fast Food and Counter Workers* (19%) and *Waiters and Waitresses* (14%), account for a third of cluster employment.

Top Industries

- Full-Service Restaurants
- Limited-Service Restaurants
- Snack and Nonalcoholic Beverage Bars
- Drinking Places
- Cafeterias, Grill Buffets, and Buffets
- Caterers
- Skiing Facilities
- Bed-and-Breakfast Inns
- Recreational and Vacation Camps
- Convention and Trade Show Organizers

Top Occupations

- General and Operations Managers
- Food Service Managers
- Maintenance and Repair Workers, General
- Training and Development Specialists
- Project Management Specialists and Business Operations Specialists, All Other
- Market Research Analysts and Marketing Specialists
- Sales Representatives of Services
- Human Resource Specialists
- Financial Managers
- Personal Service Managers
- Entertainment and Recreation Managers
- Managers, All Other



Overview

Hospitality is the third largest industry cluster in the State. This cluster includes 36 industries across the *Arts, Entertainment, and Recreation* (NAICS 71) and *Accommodation and Food Services* (NAICS 72) sectors plus portions of the *Scenic and Sightseeing Transportation* (NAICS 487) and *Administrative and Support Services* (NAICS 561) subsectors. See Appendix C for a full list of the industries included in this cluster.

Jobs

60,953

8% of the total workforce

Growth Rate

-8% (2016–2026)

2016–2019: 4% | 2021–2026: 6%

Average Earnings

\$30,509

\$31,720 national avg. for an area this size

Payroll Business Locations

4,435

8% of the State's total businesses

Total GRP

\$3.0 billion

3% of the State's gross regional product

Location Quotient

1.05

Increased 4.0% since 2016

Competitive Effect

2,052 jobs (2016–2026)

26% more jobs than expected due to local factors

Unemployment

3,415 unemployed as of Nov 2021

Down from a peak of 26,186 in April 2020

Retirement Risk

Moderately High

17% of workers retire soon

Top Industries (6-digit NAICS)

By Employment

1. Full-Service Restaurants (23,109)
2. Limited-Service Restaurants (13,285)
3. Snack & Nonalcoholic Beverage Bars (6,216)

By Location Quotient

1. Skiing Facilities (7.3)
2. Bed-and-Breakfast Inns (7.0)
3. Recreational & Vacation Camps (except Campgrounds) (6.0)

By Growth Rate (2016–2021)

1. Drinking Places (Alcoholic Beverages) (98%)
2. Cafeterias, Grill Buffets & Buffets (77%)
3. Convention and Trade Show Organizers (62%)

By Competitive Effect (Shift-Share)

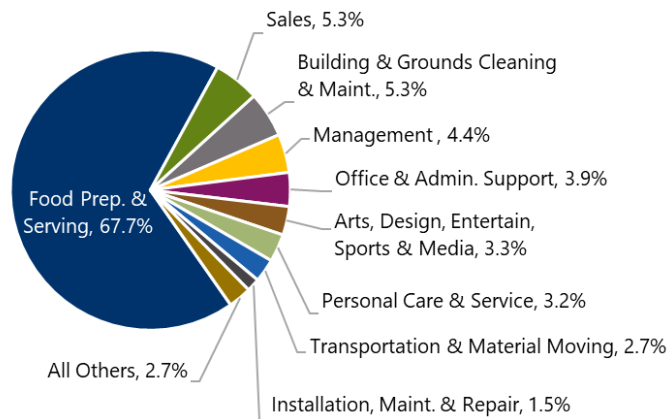
1. Full-Service Restaurants (1,572)
2. Snack & Nonalcoholic Beverage Bars (812)
3. Caterers (283)



Staffing Pattern

There are 60,953 jobs in the Hospitality industry cluster, spread across approximately 140 occupations. See Appendix D for the full staffing pattern. The top 30 occupations in terms of share of employment are shown to the right. Together, these 30 occupations account for 88% of the cluster's total employment. *Food Preparation and Serving Related* occupations account for 68% of the cluster's jobs, followed by *Sales* (5%), *Building and Grounds Cleaning and Maintenance* (5%), *Management* (4%), and *Office and Administrative Support* (4%).

Staffing for Hospitality Cluster by 2-Digit Occupation



Source: Emsi, 2022.1

Staffing Pattern for Hospitality Cluster: Top 30 Occupations, 5 digit SOC

Occupation	Share of Cluster's 2021 Jobs
Fast Food and Counter Workers	19.4%
Waiters and Waitresses	14.0%
Cooks, Restaurant	7.9%
First-Line Supervisors of Food Preparation and Serving Workers	4.8%
Bartenders	4.0%
Cashiers	3.9%
Cooks, Short Order	3.1%
Dishwashers	3.0%
Food Preparation Workers	2.6%
Maids and Housekeeping Cleaners	2.4%
Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	2.3%
Dining Room and Cafeteria Attendants and Bartender Helpers	2.2%
Cooks, Fast Food	2.1%
Driver/Sales Workers	1.9%
Food Service Managers	1.8%
General and Operations Managers	1.5%
Landscaping and Groundskeeping Workers	1.4%
Amusement and Recreation Attendants	1.3%
Hotel, Motel, and Resort Desk Clerks	1.2%
Maintenance and Repair Workers, General	1.1%
Chefs and Head Cooks	1.0%
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	0.9%
Office Clerks, General	0.7%
Retail Salespersons	0.6%
Recreation Workers	0.6%
Lodging Managers	0.6%
Musicians and Singers	0.6%
Writers and Authors	0.5%
Bookkeeping, Accounting, and Auditing Clerks	0.5%
Food Servers, Nonrestaurant	0.5%
Total	88.4%

Source: Emsi, 2022.1



Job Growth Trends by Occupation

Historical and projected job growth trends for the top 9 occupation sectors within Hospitality are shown below (note the *Food Preparation and Serving* sector plotted on the right y-axis). These 9 sectors account for 97% of jobs in the cluster in 2021.

2016–2026

Overall, the top Hospitality occupation sectors are declining over the 10-year period, projected to lose a total of 8% of jobs. These losses are primarily concentrated in *Building and Grounds Cleaning and Maintenance* (-31%) and *Office and Administrative Support* (-22%) occupations. *Transportation and Material Moving* occupations are growing the fastest, with 32% growth from 2016 to 2026, followed by *Management* (6%) and *Sales* (5%).

2016–2019

Prior to the COVID-19 pandemic, all but two occupation sectors were growing within the Hospitality cluster for an overall rate of 4%. Jobs in the *Transportation and Material Moving* (28%), *Installation, Maintenance, and Repair* (22%), and *Sales* (19%) occupations were growing fastest, while *Food Preparation and Serving* jobs were relatively stagnant at 2%. *Building and Grounds Cleaning and Maintenance* and *Arts, Design, Entertainment, Sports, and Media* occupations were declining slightly (-4% and -2%, respectively).

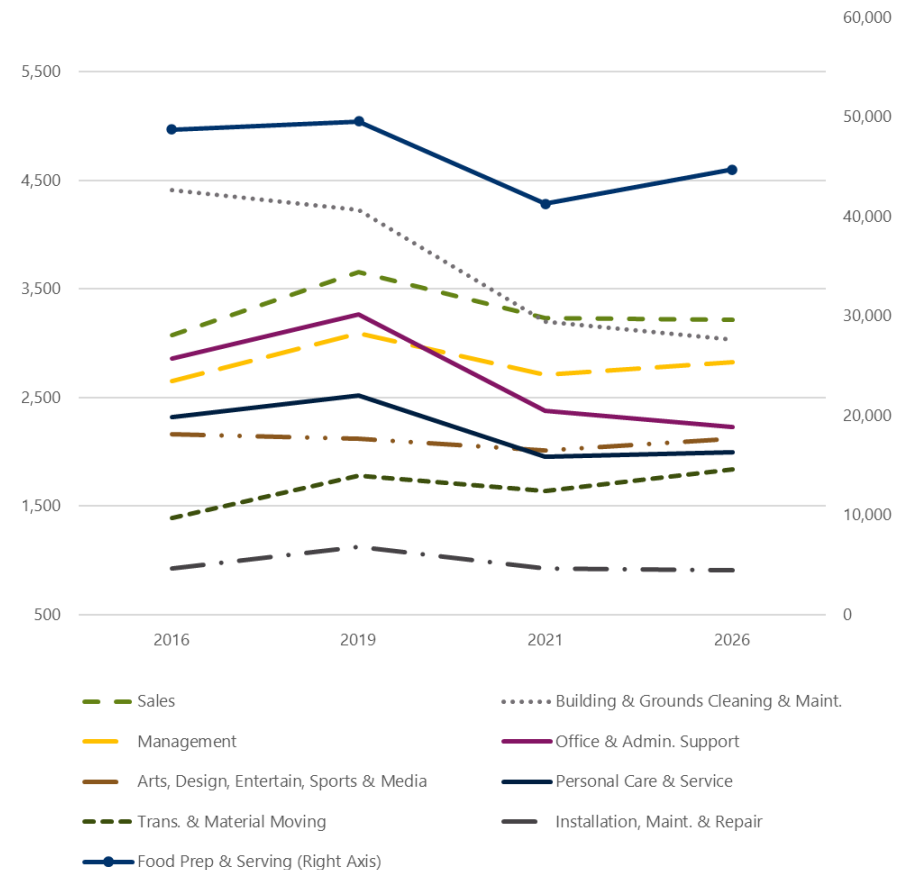
2019–2021

During the pandemic, New Hampshire lost 17% of its Hospitality jobs in these occupation sectors. All sectors experienced job losses, but *Office and Administrative Support* occupations were hit the hardest (-27%), followed by *Building and Grounds Cleaning and Maintenance* (-24%), and *Personal Care and Service* (-22%). *Arts, Design, Entertainment, Sports, and Media* occupations were the least affected by the pandemic, losing only 5% of jobs.

2021–2026

Going forward, the Hospitality cluster is projected to grow by 6%, but still not recover to pre-recession levels. *Transportation and Material Moving* jobs (12%) and *Food Preparation and Serving* (8%) are

Hospitality Cluster Job Growth by 2 Digit Occupation



Source: Emsi, 2022.1

expected to grow fastest, while *Office and Administrative Support* and *Building and Grounds Cleaning and Maintenance* are expected to continue their decline (-6% and -5% respectively).

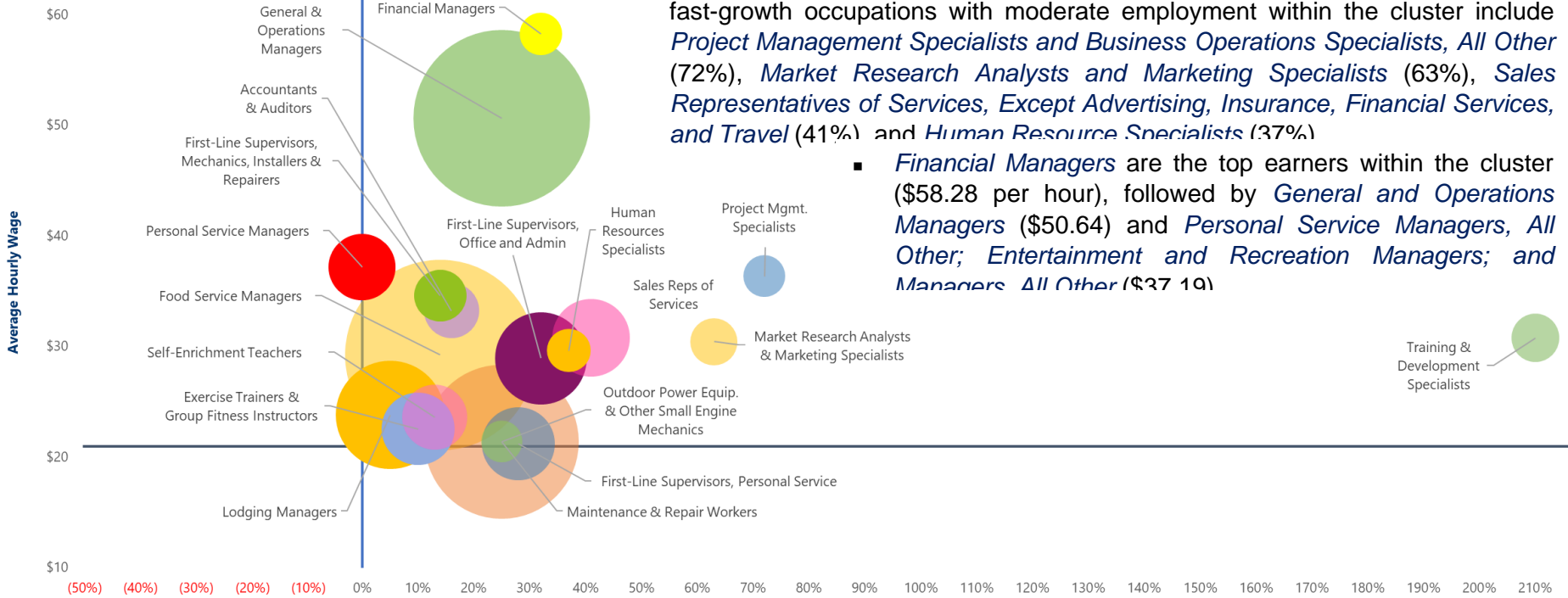


Top Occupations

The occupations below are the 18 top occupations in New Hampshire's Hospitality cluster, as determined by size (represented by bubble size), growth (plotted on the x-axis), and salary (plotted on the y-axis). For this analysis, occupations employing fewer than 50 Hospitality workers, with growth rates below 0.0% between 2016–2019 (pre-COVID data is assumed to be a better indicator of the occupation's overall trajectory), and earnings less than \$21.16 (the state's median hourly wage) were omitted.

Top Occupations in the Hospitality Cluster by 5-digit SOC

Bubble Size = 2021 Employment



- *General and Operations Managers* is a top Hospitality occupation by all three metrics: employment (916 jobs), growth (25%), and wages (\$50.64). *Food Service Managers* and *Maintenance and Repair Workers, General* are also a major source of cluster jobs (1,074 and 699, respectively) with high growth rates (14% and 25%), but relatively low wages (\$29.24 and \$21.42).

- *Training and Development Specialists* in the Hospitality industry grew rapidly from 2016 to 2019 (210%), and even picked up the pace during the pandemic. Other fast-growth occupations with moderate employment within the cluster include *Project Management Specialists and Business Operations Specialists, All Other* (72%), *Market Research Analysts and Marketing Specialists* (63%), *Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel* (41%) and *Human Resource Specialists* (37%)

- *Financial Managers* are the top earners within the cluster (\$58.28 per hour), followed by *General and Operations Managers* (\$50.64) and *Personal Service Managers, All Other; Entertainment and Recreation Managers; and Managers, All Other* (\$37.19)

Source: Emsi, 2022.1

Job Growth Rate, 2016 - 2019



Attachment 1: Hospitality Cluster Definition

This cluster spans 36 industries and employs 60,953 workers. It includes all industries in the *Accommodation and Food Services* sector (72) (except for Casino Hotels, which the State does not have or anticipate allowing), as well as most industries in the *Arts, Entertainment, and Recreation* sector (71), plus the *Scenic and Sightseeing Transportation* subsector (487), and selected industries from the *Administrative and Support Services* subsector (561).

NAICS	Industry	2021 Jobs
487110	Scenic and Sightseeing Transportation, Land	164
487210	Scenic and Sightseeing Transportation, Water	89
487990	Scenic and Sightseeing Transportation, Other	<10
561520	Tour Operators	71
561591	Convention and Visitors Bureaus	15
561920	Convention and Trade Show Organizers	92
711110	Theater Companies and Dinner Theaters	288
711130	Musical Groups and Artists	127
711190	Other Performing Arts Companies	25
711211	Sports Teams and Clubs	89
711212	Racetracks	287
711219	Other Spectator Sports	23
711310	Promoters of Performing Arts, Sports, and Similar Events with Facilities	140
711320	Promoters of Performing Arts, Sports, and Similar Events without Facilities	96
711510	Independent Artists, Writers, and Performers	1,252
712110	Museums	379
712120	Historical Sites	101
713110	Amusement and Theme Parks	496

NAICS	Industry	2021 Jobs
713120	Amusement Arcades	176
713910	Golf Courses and Country Clubs	2266
713920	Skiing Facilities	1,216
713930	Marinas	357
713950	Bowling Centers	172
713990	All Other Amusement and Recreation Industries	1,404
721110	Hotels (except Casino Hotels) and Motels	4,996
721191	Bed-and-Breakfast Inns	418
721199	All Other Traveler Accommodation	169
721211	RV (Recreational Vehicle) Parks and Campgrounds	489
721214	Recreational and Vacation Camps (except Campgrounds)	678
722310	Food Service Contractors	1,440
722320	Caterers	636
722410	Drinking Places (Alcoholic Beverages)	69
722511	Full-Service Restaurants	23,109
722513	Limited-Service Restaurants	13,285
722514	Cafeterias, Grill Buffets, and Buffets	115
722515	Snack and Nonalcoholic Beverage Bars	6,216

Total **60,953**

Source: Emsi, 2022.3



Attachment 2: Hospitality Cluster Staffing Pattern

The top 54 occupations (e.g., all occupations with more than 100 Hospitality employees) represent 95.0% of all employment in the Hospitality Cluster. Altogether, employment spans 290 occupations for a total of 60,953 jobs.

Staffing Patterns for the Hospitality Cluster, 2021

SOC	Occupation	Share of Cluster's Jobs	Jobs in Cluster (2021)	Median Hourly Earnings	Job Growth 2016 - 2021		Job Growth 2016 - 2019	
					Change	Rate	Change	Rate
35-3023	Fast Food and Counter Workers	19.4%	11,824	\$11.18	(736)	(6%)	130	1%
35-3031	Waiters and Waitresses	14.0%	8,512	\$9.80	(3,728)	(30%)	(776)	(6%)
35-2014	Cooks, Restaurant	7.9%	4,844	\$15.85	(808)	(14%)	263	5%
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	4.8%	2,953	\$18.47	(7)	0%	335	11%
35-3011	Bartenders	4.0%	2,438	\$9.48	(706)	(22%)	200	6%
41-2011	Cashiers	3.9%	2,349	\$11.53	142	6%	365	17%
35-2015	Cooks, Short Order	3.1%	1,919	\$12.61	(106)	(5%)	148	7%
35-9021	Dishwashers	3.0%	1,833	\$11.35	(460)	(20%)	84	4%
35-2021	Food Preparation Workers	2.6%	1,563	\$13.12	(68)	(4%)	74	5%
37-2012	Maids and Housekeeping Cleaners	2.4%	1,471	\$13.16	(900)	(38%)	(275)	(12%)
35-9031	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	2.3%	1,423	\$11.78	(313)	(18%)	132	8%
35-9011	Dining Room and Cafeteria Attendants and Bartender Helpers	2.2%	1,321	\$9.33	(15)	(1%)	315	24%
35-2011	Cooks, Fast Food	2.1%	1,281	\$11.65	(245)	(16%)	(66)	(4%)
53-3031	Driver/Sales Workers	1.9%	1,132	\$11.77	307	37%	306	37%
11-9051	Food Service Managers	1.8%	1,074	\$29.24	(2)	0%	154	14%
11-1021	General and Operations Managers	1.5%	916	\$50.64	106	13%	202	25%
37-3011	Landscaping and Groundskeeping Workers	1.4%	882	\$16.39	(161)	(15%)	43	4%
39-3091	Amusement and Recreation Attendants	1.3%	814	\$9.91	(155)	(16%)	143	15%
43-4081	Hotel, Motel, and Resort Desk Clerks	1.2%	738	\$12.96	(370)	(33%)	66	6%
49-9071	Maintenance and Repair Workers, General	1.1%	699	\$21.42	28	4%	165	25%
35-1011	Chefs and Head Cooks	1.0%	629	\$26.52	(185)	(23%)	(72)	(9%)
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	0.9%	520	\$14.62	(115)	(18%)	14	2%
43-9061	Office Clerks, General	0.7%	451	\$19.12	13	3%	117	27%
41-2031	Retail Salespersons	0.6%	364	\$13.21	25	7%	102	30%
39-9032	Recreation Workers	0.6%	349	\$13.60	(75)	(18%)	48	11%
11-9081	Lodging Managers	0.6%	347	\$23.83	(41)	(10%)	18	5%
27-2042	Musicians and Singers	0.6%	342	\$29.42	(13)	(4%)	(7)	(2%)

Staffing Patterns for the Hospitality Cluster, 2021 (continued)

SOC	Occupation	Share of Cluster's Jobs	Jobs in Cluster (2021)	Median Hourly Earnings	Job Growth 2016 - 2021		Job Growth 2016 - 2019	
					Change	Rate	Change	Rate
27-3043	Writers and Authors	0.5%	319	\$25.23	(11)	(3%)	(32)	(10%)
43-3031	Bookkeeping, Accounting, and Auditing Clerks	0.5%	311	\$20.67	(24)	(7%)	45	13%
35-3041	Food Servers, Nonrestaurant	0.5%	301	\$11.95	(112)	(27%)	(32)	(8%)
27-1013	Fine Artists, Including Painters, Sculptors, and Illustrators	0.4%	260	\$11.74	103	65%	58	37%
43-1011	First-Line Supervisors of Office and Administrative Support Workers	0.4%	248	\$28.94	11	5%	76	32%
27-2022	Coaches and Scouts	0.4%	237	\$14.65	(18)	(7%)	9	4%
35-2012	Cooks, Institution and Cafeteria	0.4%	231	\$16.93	(26)	(10%)	50	20%
51-3011	Bakers	0.4%	230	\$15.32	53	30%	21	12%
37-1011	First-Line Supervisors of Housekeeping and Janitorial Workers	0.3%	194	\$21.06	(11)	(5%)	34	17%
43-4051	Customer Service Representatives	0.3%	193	\$18.39	43	29%	72	48%
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	0.3%	188	\$18.80	(50)	(21%)	29	12%
33-9032	Security Guards	0.3%	187	\$15.79	(44)	(19%)	6	2%
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	0.3%	177	\$30.78	2	1%	71	41%
35-9099	Food Preparation and Serving Related Workers, All Other	0.3%	162	\$11.37	29	22%	32	24%
39-9031	Exercise Trainers and Group Fitness Instructors	0.3%	156	\$22.56	10	7%	14	10%
39-1098	First-Line Supervisors of Personal Service and Entertainment and Recreation Workers, Except Gambling Services	0.3%	156	\$21.21	13	9%	41	28%
39-7018	Tour and Travel Guides	0.2%	144	\$12.96	(37)	(21%)	2	1%
27-2099	Miscellaneous Entertainers and Performers, Sports and Related Workers	0.2%	133	\$17.35	56	73%	55	71%
11-9198	Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	0.2%	131	\$37.19	0	0%	0	0%
41-2021	Counter and Rental Clerks	0.2%	129	\$17.51	(6)	(4%)	17	13%
25-3021	Self-Enrichment Teachers	0.2%	124	\$23.63	(4)	(3%)	16	13%
53-3033	Light Truck Drivers	0.2%	119	\$16.60	(35)	(23%)	17	11%
51-6011	Laundry and Dry-Cleaning Workers	0.2%	118	\$12.53	(34)	(22%)	21	14%
37-1012	First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers	0.2%	110	\$23.20	(22)	(17%)	(2)	(1%)
13-1121	Meeting, Convention, and Event Planners	0.2%	107	\$24.11	(29)	(21%)	1	1%
27-2011	Actors	0.2%	105	\$23.81	(20)	(16%)	(6)	(5%)
27-1012	Craft Artists	0.2%	100	\$6.99	(7)	(7%)	(12)	(12%)

Source: Emsi, 2022.1



Appendix VI: Construction Industry Cluster Analysis



Key Takeaways

The Construction cluster is experiencing strong growth, even through the pandemic. It accounts for a fairly large share of the State's businesses, and its employees are productive. The State does not have industry concentration or a competitive advantage in this cluster. In keeping with trends among the other clusters, some of the top occupations are in

management positions.

- The Construction industry cluster employs 42,040 workers, or 6% of the total workforce in New Hampshire. It is the fourth largest cluster in the state.
- With a growth rate of 10% from 2016–2026, the Construction cluster is the second fastest growing cluster in the State (behind Technology at 33%). This cluster did not experience any job losses during the pandemic, though growth has been slowing a bit since 2019. It is projected to grow an additional 2% by 2026.
- This cluster accounts for the largest share of the State's payroll business locations (9%). Construction companies tend to be rather small, with an average of 8 employees.

Top Industries

- All Other Specialty Trade Contractors
- Drywall and Insulation Contractors
- Electrical Contractors and Other Wiring Installation Contractors
- New Multifamily Housing Construction (except For-Sale Builders)
- Oil and Gas Pipeline and Related Structures Construction
- Plumbing, Heating, and Air-Conditioning Contractors
- Residential Remodelers
- Siding Contractors
- Site Preparation Contractors
- Structural Steel and Precast Concrete Contractors

- The Construction cluster is one of the smaller contributors to the State's gross regional product (only 5% of total GRP), but its employees are relatively productive (\$107,041 per job).
- The State of New Hampshire does not have any industry concentration in the Construction cluster (LQ = 1.00), and that has been consistent over time. Since Construction is typically not export-oriented, a neutral industry concentration is to be expected.
- New Hampshire does not have a competitive advantage in Construction. Between 2016 and 2026, this cluster will have 970 fewer jobs than expected if it had followed national and industry trends.
- The Construction cluster has a high retirement risk, with 29% of the workforce aged 55 and over.
- Over 62% of jobs in this cluster are within the *Construction and Extraction* occupation sector. At the 5-digit level, *Construction Laborers* (12%) and *Carpenters* (12%) account for 24% of cluster employment.

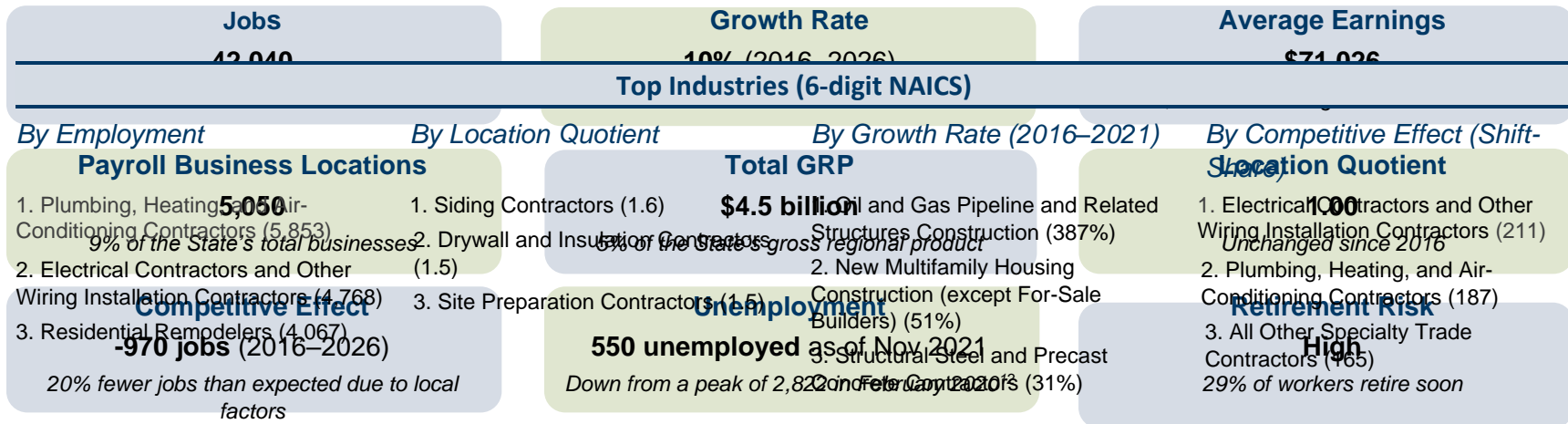
Top Occupations

- Construction Managers
- Earth Drillers and Explosives Workers, Ordnance Handling Experts, and Blasters
- Electrical Power-Line Installers and Repairers
- Electricians
- Floor Layers, Except Carpet, Wood, and Hard Tiles
- General and Operations Managers
- Operating Engineers
- Other Construction Equipment Operators
- Pile Driver Operators
- Project Management Specialists and Business Operations Specialists⁸



Overview

Construction is the fourth largest industry cluster in the State. This cluster includes all industries in the *Construction* sector (NAICS 23). See Appendix C for a full list of the industries included in this cluster.



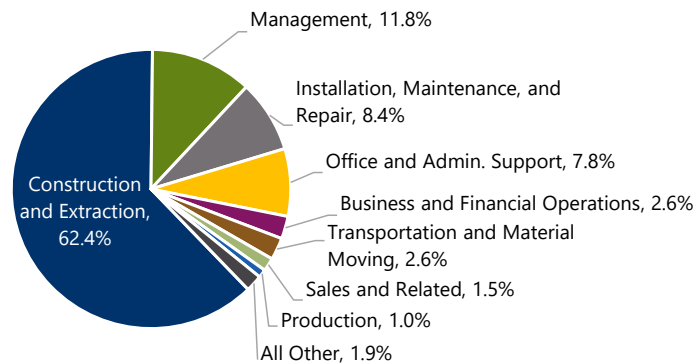
¹² Construction is a seasonal industry and the unemployment rate in Feb 2020 was lower than the January or February peaks in 2017, 2018, and 2019.



Staffing Pattern

There are 42,040 jobs in the Construction industry cluster, spread across approximately 282 occupations. See Appendix D for the full staffing pattern. The top 30 occupations in terms of share of employment are shown to the right. Together, these 30 occupations account for 83% of the cluster's total employment. *Construction Laborers* and *Carpenters* each account for 12% of the cluster's jobs, followed by *Electricians* (7%), *First-Line Supervisors* (6%), *Construction Managers* (6%), and *Plumbers, Pipefitters, and Steamfitters* (5%).

Staffing for Construction Cluster by 2-Digit Occupation



Source: Emsi, 2022.1

Staffing Pattern for Construction Cluster: Top 30 Occupations, 5 digit SOC

Occupation	Share of Cluster's 2021 Jobs
Construction Laborers	12.3%
Carpenters	12.3%
Electricians	6.6%
First-Line Supervisors of Construction Trades and Extraction Workers	5.9%
Construction Managers	5.8%
Plumbers, Pipefitters, and Steamfitters	4.7%
Painters, Construction and Maintenance	4.6%
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	4.2%
Office Clerks, General	3.4%
Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	3.2%
Operating Engineers and Other Construction Equipment Operators	2.4%
General and Operations Managers	2.0%
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	1.6%
Heavy and Tractor-Trailer Truck Drivers	1.5%
Bookkeeping, Accounting, and Auditing Clerks	1.3%
Drywall and Ceiling Tile Installers	1.3%
Cost Estimators	1.1%
Roofers	1.0%
Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	1.0%
Sheet Metal Workers	0.9%
Brickmasons and Blockmasons	0.9%
Electrical Power-Line Installers and Repairers	0.8%
Cement Masons and Concrete Finishers	0.7%
Project Management Specialists and Business Operations Specialists, All Other	0.7%
Insulation Workers, Floor, Ceiling, and Wall	0.5%
Paving, Surfacing, and Tamping Equipment Operators	0.5%
Plasterers and Stucco Masons	0.5%
First-Line Supervisors of Mechanics, Installers, and Repairers	0.5%
Glaziers	0.5%
Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	0.5%
Total	83.2%

Source: Emsi, 2022.1



Job Growth Trends by Occupation

Historical and projected job growth trends for the top 8 occupation sectors within the Construction cluster are shown below (note the Construction and Extraction sector plotted on the right y-axis). These 8 sectors account for 98% of the cluster's jobs in 2021.

2016–2026

All the top Construction occupation sectors are growing over the 10-year period, projected to increase employment by 10%. Four of the top 8 are expected to grow by 30% or more: *Production* (35%), *Sales and Related* (32%), *Management* (31%), and *Business and Financial Operations* (30%). *Construction and Extraction* occupations have the slowest expected growth at 3% from 2016 to 2026, but as the largest occupational group by far, even slow growth represents a significant number of new jobs.

2016–2019

Prior to the COVID-19 pandemic, nearly all Construction occupation sectors were growing, for an overall rate of 5%. *Production* (23%), *Sales and Related* (20%), and *Transportation and Material Moving* (18%) were the fastest-growing major occupational groups. *Installation, Maintenance, and Repair* and *Construction and Extraction* were the slowest, at 5% and 2%, respectively.

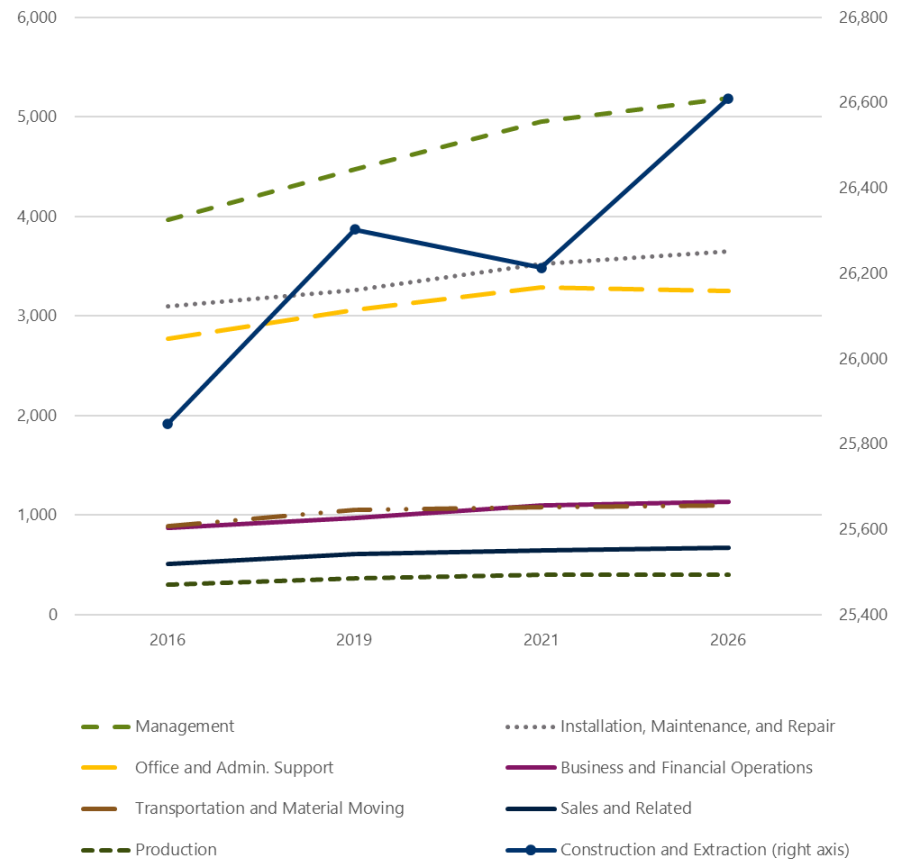
2019–2021

Overall, New Hampshire's Construction cluster grew by 3% during the pandemic. Only *Construction and Extraction* occupations shrank, but by just 0.3%, shedding fewer than 100 jobs. The fastest growth was in *Business and Financial Operations* (13%), *Management* (11%), and *Production* jobs (9%). The other major occupation sectors increased by 2% (*Transportation and Material Moving*) to 8% (*Installation, Maintenance, and Repair*).

2021–2026

Looking forward, all occupational sectors are projected to grow except *Office and Administrative Support* (-1%). *Management* occupations are expected to grow the fastest, at 5% over the next few years, followed by *Sales and Related* occupations and

Construction Cluster Job Growth by 2 Digit Occupation



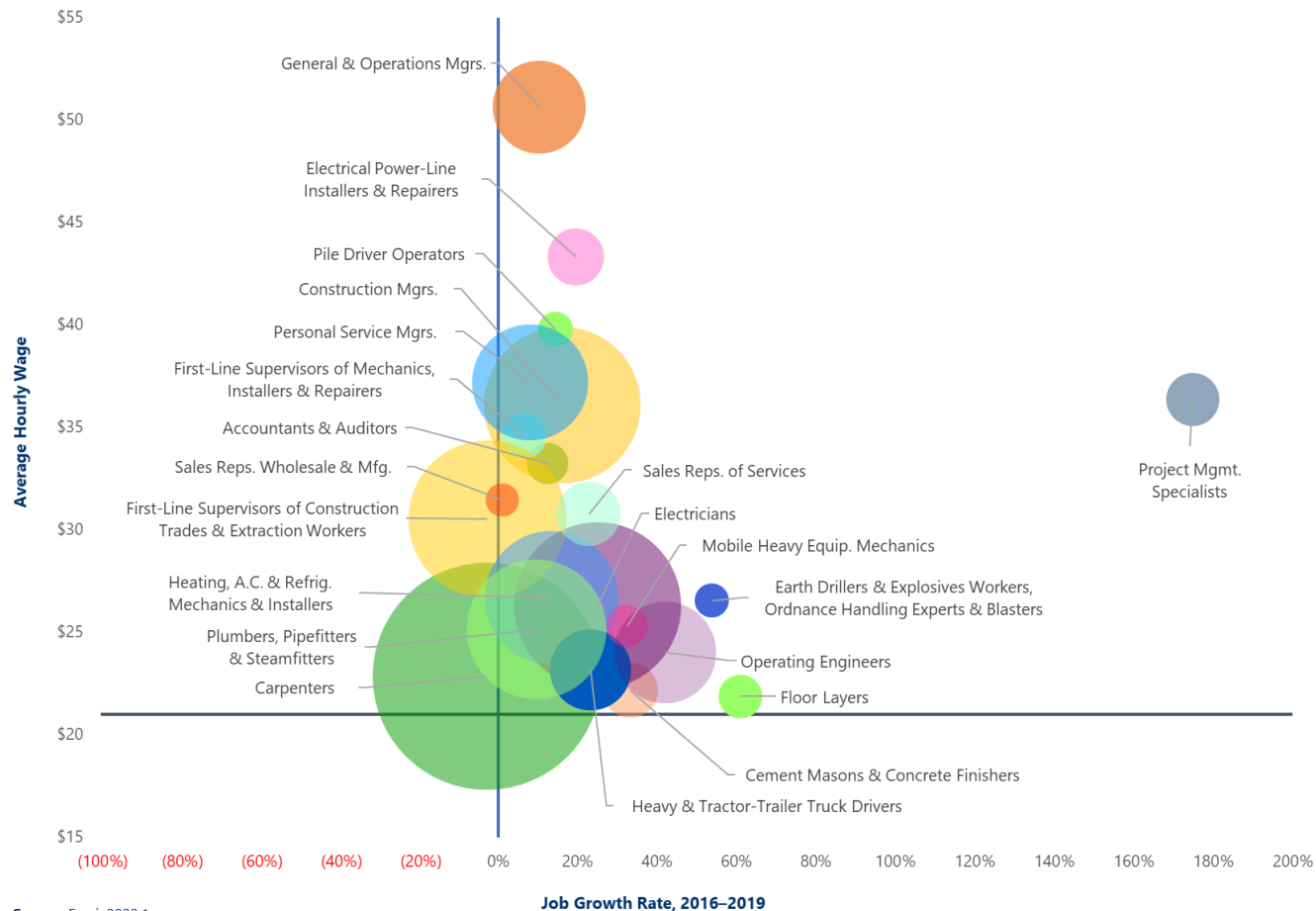
Source: Emsi, 2022.1

Installation, Maintenance, and Repair, both at 4%. *Production* jobs are expected to increase by just 1% by 2026.



Top Occupations

The occupations below are the 21 top occupations in New Hampshire's Construction cluster, as determined by size (represented by bubble size), growth (plotted on the x-axis), and salary (plotted on the y-axis). For this analysis, occupations employing fewer than 100 Construction workers, with 2016–2019 growth rates below -5.0% (pre-COVID data is assumed to be a better indicator of the occupation's overall trajectory), and earnings less than \$21.16 (the state's median hourly wage) were omitted.



Source: Emsi, 2022.1

Top Occupations in the Construction Cluster by 5-digit SOC

Bubble Size = 2021 Employment

- No occupation ranks in the top for all three metrics (size, growth, and salary), but 8 are among the top 10 on two measures. *Electricians* and *Construction Managers* are the largest of these, with 2,777 and 2,430 jobs, respectively, in 2021. *Electrician* jobs grew by 25% from 2016 to 2019 and pay \$26.30, in about the middle of the group. *Construction Manager* jobs pay well, with median hourly earnings of \$36.10, and grew 16% pre-pandemic.
 - *Project Management Specialists and Business Operations Specialists* are the fastest growing occupation, increasing by 175% from 2016 to 2019. Other fast-growth occupations include *Floor Layers, Except Carpet, Wood, and Hard Tiles* (61%), *Earth Drillers and Explosives Workers, Ordnance Handling Experts, and Blasters* (54%), and *Operating Engineers and Other Construction Equipment Operators* (42%).
 - *General and Operations Managers* are the top earners within the cluster at \$50.64 per hour, followed by *Electrical Power-Line Installers and Repairers* (\$43.34) and *Pile Driver*



Attachment 1: Construction Cluster Definition

This cluster spans 31 industries and employs 42,040 workers. It includes all industries in the *Construction* sector (23).

NAICS	Industry	2021 Jobs
236115	New Single-Family Housing Construction (except For-Sale Builders)	3,113
236116	New Multifamily Housing Construction (except For-Sale Builders)	106
236117	New Housing For-Sale Builders	325
236118	Residential Remodelers	4067
236210	Industrial Building Construction	406
236220	Commercial and Institutional Building Construction	2072
237110	Water and Sewer Line and Related Structures Construction	756
237120	Oil and Gas Pipeline and Related Structures Construction	98
237130	Power and Communication Line and Related Structures Construction	783
237210	Land Subdivision	78
237310	Highway, Street, and Bridge Construction	1,540
237990	Other Heavy and Civil Engineering Construction	309
238110	Poured Concrete Foundation and Structure Contractors	1039
238120	Structural Steel and Precast Concrete Contractors	332
238130	Framing Contractors	609
238140	Masonry Contractors	892

NAICS	Industry	2021 Jobs
238150	Glass and Glazing Contractors	195
238160	Roofing Contractors	635
238170	Siding Contractors	429
238190	Other Foundation, Structure, and Building Exterior Contractors	176
238210	Electrical Contractors and Other Wiring Installation Contractors	4,768
238220	Plumbing, Heating, and Air-Conditioning Contractors	5,853
238290	Other Building Equipment Contractors	597
238310	Drywall and Insulation Contractors	2,176
238320	Painting and Wall Covering Contractors	2,066
238330	Flooring Contractors	888
238340	Tile and Terrazzo Contractors	277
238350	Finish Carpentry Contractors	1,372
238390	Other Building Finishing Contractors	445
238910	Site Preparation Contractors	3,683
238990	All Other Specialty Trade Contractors	1,956

Total **42,040**

Source: Emsi, 2022.3



Attachment 2: Construction Cluster Staffing Pattern

The top 52 occupations (e.g. all occupations with more than 100 Construction employees) represent 90.9% of all employment in the Construction Cluster. Altogether, employment spans 251 occupations for a total of 42,040 jobs.

Staffing Patterns for the Construction Cluster, 2021

SOC	Occupation	Share of Cluster's Jobs	Jobs in Cluster (2021)	Median Hourly Earnings	Job Growth 2016–2021		Job Growth 2016–2019	
					Change	Rate	Change	Rate
47-2061	Construction Laborers	12.3%	5,176	\$18.62	(284)	(5%)	(196)	(4%)
47-2031	Carpenters	12.3%	5,159	\$22.86	(237)	(4%)	(156)	(3%)
47-2111	Electricians	6.6%	2,777	\$26.30	613	28%	543	25%
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	5.9%	2,500	\$30.52	(79)	(3%)	(68)	(3%)
11-9021	Construction Managers	5.8%	2,430	\$36.10	503	26%	313	16%
47-2152	Plumbers, Pipefitters, and Steamfitters	4.7%	1,956	\$25.14	205	12%	170	10%
47-2141	Painters, Construction and Maintenance	4.6%	1,925	\$18.56	(60)	(3%)	(14)	(1%)
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	4.2%	1,773	\$26.70	318	22%	197	14%
43-9061	Office Clerks, General	3.4%	1,430	\$19.12	469	49%	294	31%
11-9198	Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	3.2%	1,335	\$37.19	252	23%	87	8%
47-2073	Operating Engineers and Other Construction Equipment Operators	2.4%	1,023	\$24.03	343	50%	286	42%
11-1021	General and Operations Managers	2.0%	854	\$50.64	150	21%	74	10%
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	1.6%	666	\$18.80	(72)	(10%)	(54)	(7%)
53-3032	Heavy and Tractor-Trailer Truck Drivers	1.5%	651	\$23.15	139	27%	119	23%
43-3031	Bookkeeping, Accounting, and Auditing Clerks	1.3%	556	\$20.67	39	7%	10	2%
47-2081	Drywall and Ceiling Tile Installers	1.3%	548	\$21.20	(98)	(15%)	(147)	(23%)
13-1051	Cost Estimators	1.1%	462	\$31.88	(79)	(15%)	(66)	(12%)
47-2181	Roofers	1.0%	431	\$20.09	(54)	(11%)	(9)	(2%)
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	1.0%	413	\$30.78	102	33%	71	23%
47-2211	Sheet Metal Workers	0.9%	384	\$23.28	16	4%	7	2%
47-2021	Brickmasons and Blockmasons	0.9%	362	\$25.20	(80)	(18%)	(79)	(18%)
49-9051	Electrical Power-Line Installers and Repairers	0.8%	321	\$43.34	98	44%	44	20%
47-2051	Cement Masons and Concrete Finishers	0.7%	304	\$22.18	77	34%	75	33%
13-1198	Project Management Specialists and Business Operations Specialists, All Other	0.7%	285	\$36.37	220	338%	114	175%

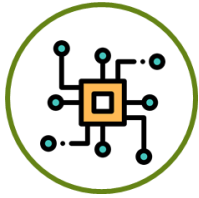
Staffing Patterns for the Construction Cluster, 2021 (continued)

SOC	Occupation	Share of Cluster's Jobs	Jobs in Cluster (2021)	Median Hourly Earnings	Job Growth 2016–2021		Job Growth 2016–2019	
					Change	Rate	Change	Rate
47-2131	Insulation Workers, Floor, Ceiling, and Wall	0.5%	221	\$17.92	(30)	(12%)	23	9%
47-2071	Paving, Surfacing, and Tamping Equipment Operators	0.5%	219	\$22.52	42	24%	8	4%
47-2161	Plasterers and Stucco Masons	0.5%	209	\$21.09	51	32%	11	7%
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	0.5%	206	\$34.61	33	19%	11	7%
47-2121	Glaziers	0.5%	204	\$22.74	27	16%	23	13%
47-3015	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	0.5%	201	\$16.90	62	44%	56	40%
47-2042	Floor Layers, Except Carpet, Wood, and Hard Tiles	0.5%	189	\$21.88	84	80%	64	61%
43-1011	First-Line Supervisors of Office and Administrative Support Workers	0.4%	187	\$28.94	32	20%	13	8%
47-2044	Tile and Stone Setters	0.4%	187	\$22.59	(93)	(33%)	(72)	(26%)
47-2221	Structural Iron and Steel Workers	0.4%	180	\$20.77	(30)	(14%)	(0)	(0%)
49-9098	Helpers--Installation, Maintenance, and Repair Workers	0.4%	176	\$15.17	64	56%	47	42%
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	0.4%	173	\$25.31	48	38%	41	32%
13-2011	Accountants and Auditors	0.4%	168	\$33.25	31	23%	17	13%
47-2171	Reinforcing Iron and Rebar Workers	0.4%	164	\$20.35	(19)	(10%)	(15)	(8%)
47-3013	Helpers--Electricians	0.4%	163	\$13.45	64	64%	39	39%
47-3012	Helpers--Carpenters	0.4%	153	\$13.93	60	64%	46	49%
51-4121	Welders, Cutters, Solderers, and Brazers	0.3%	145	\$22.67	24	20%	11	9%
47-5022	Excavating and Loading Machine and Dragline Operators, Surface Mining	0.3%	142	\$18.77	(91)	(39%)	(45)	(19%)
47-3011	Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	0.3%	141	\$19.66	47	51%	31	33%
49-9071	Maintenance and Repair Workers, General	0.3%	137	\$21.42	7	5%	(5)	(4%)
17-2051	Civil Engineers	0.3%	131	\$40.40	1	1%	(7)	(5%)
47-2072	Pile Driver Operators	0.3%	121	\$39.80	5	4%	17	14%
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	0.3%	119	\$15.23	10	9%	8	7%
47-5097	Earth Drillers, Except Oil and Gas; and Explosives Workers, Ordnance Handling Experts, and Blasters	0.3%	117	\$26.55	45	62%	39	54%
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	0.3%	110	\$31.48	2	2%	1	1%
47-2022	Stonemasons	0.3%	110	\$23.72	(20)	(15%)	(4)	(3%)
43-4051	Customer Service Representatives	0.3%	106	\$18.39	47	80%	40	68%
37-3011	Landscaping and Groundskeeping Workers	0.2%	103	\$16.39	(3)	(3%)	(10)	(9%)

Source: Emsi, 2022.1



Appendix VII: Technology Industry Cluster Analysis



Key Takeaways

Although the Technology industry cluster is relatively small, it is driving job growth in the State. Not only is the cluster rapidly growing, it has the highest wages and the most productive workers of any of the clusters and a significant competitive advantage. In addition to the top occupations in the *Computer and Mathematical* sector, this cluster follows trends across the other cluster in terms of demand for management.

- New Hampshire's Technology cluster employs 22,373 workers, accounting for just 3% of jobs.
- The Technology cluster is the State's fastest-growing cluster, with 33% growth between 2016 and 2026 (more than triple the rate of the next fastest growth cluster, Construction at 10%). Unlike many of the other clusters, Technology job growth remained steady during the height of the COVID-19 pandemic, growing 5% between 2019 and 2021. It is projected to grow an additional 12% by 2026 for a total of 6,167 jobs added over the ten-year time period.
- The Technology cluster has the smallest businesses among the clusters with an average of 6 jobs per location.
- The Technology cluster accounts for 6% of the State's GRP, and it has the most productive workforce. Its workers produce \$259,000 of GRP per job compared to the next highest cluster, Manufacturing at \$175,000 per job.
- This cluster has the highest paying jobs at \$151,810 on average. However, Technology workers in New Hampshire earn less than the national average of \$157,121 for an area this size.
- This cluster has the highest industry concentration relative to the nation (LQ = 1.25). Overall, the LQ is projected to increase by 11% to 1.29 from 2016 to 2026.
- New Hampshire has a competitive advantage in Technology, adding 1,907 more jobs than expected from 2016 to 2026 due to local factors. This means 45% of the jobs created cannot be explained by national or industry growth.
- Over 48% of jobs within the cluster fall within the *Computer and Mathematical* occupation sector, which is projected to increase by 43% from 2016 through 2026. The Technology cluster has the highest concentration of employment in a single occupation,

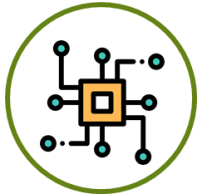
Top Industries

- Computer Systems Design Services
- Custom Computer Programming Services
- Other Computer-Related Services
- Software Publishers
- Wired Telecommunications Carriers

Top Occupations

- Computer and Information Systems Analysts
- Computer and Information Systems Managers
- Computer Network Architects
- Computer Occupations, All Other
- Computer Systems Analysts
- Computer User Support Specialists
- Marketing Managers
- Project Management Specialists and Business Operations Specialists
- Sales Managers
- Software Developers & Software Quality Assurance Analysts

with *Software Developers and Software Quality Assurance Analysts and Testers* accounting for 21% of the cluster's total employment.



Overview

Technology is the smallest industry cluster in the State. This cluster consists of a selection of *Information* sectors (NAICS 5112 *Software Publishers*, NAICS 517 *Telecommunications*, and NAICS 518 *Data Processing, Hosting, and Related Services*) and *Technical Services* (NAICS 5415 *Computer Systems Design and Related Services*). See Appendix C for a full list of the industries included in this cluster.

Jobs

22,373

3% of the total workforce

Growth Rate

33% (2016–2026)

2016–2019: 13% | 2021–2026: 12%

Average Earnings

\$151,818

\$157,121 national avg. for an area this size

Payroll Business Locations

3,848

7% of the State's total businesses

Total GRP

\$5.8 billion

6% of the State's gross regional product

Location Quotient

1.25

Up 7.3% since 2016

Competitive Effect

1,907 jobs (2016–2026)

45% more jobs than expected due to local factors

Unemployment

1,330 unemployed as of Nov 2021

Down from a peak of 5,176 in April 2020

Retirement Risk

High

25% of workers retire soon

Top Industries (6-digit NAICS)

By Employment

1. Computer Systems Design Services (8,254)
2. Custom Computer Programming Services (4,378)
3. Software Publishers (3,886)

By Location Quotient

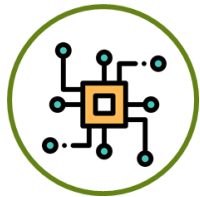
1. Software Publishers (1.6)
2. Computer Systems Design Services (1.6)
3. Wired Telecommunications Carriers (1.5)

By Growth Rate (2016–2021)

1. Computer Systems Design Services (65%)
2. Other Computer-Related Services (65%)
3. Software Publishers (20%)

By Competitive Effect (Shift-Share)

1. Computer Systems Design Services (2,640)
2. Wired Telecommunications Carriers (382)
3. Other Computer-Related Services (180)



Staffing Pattern

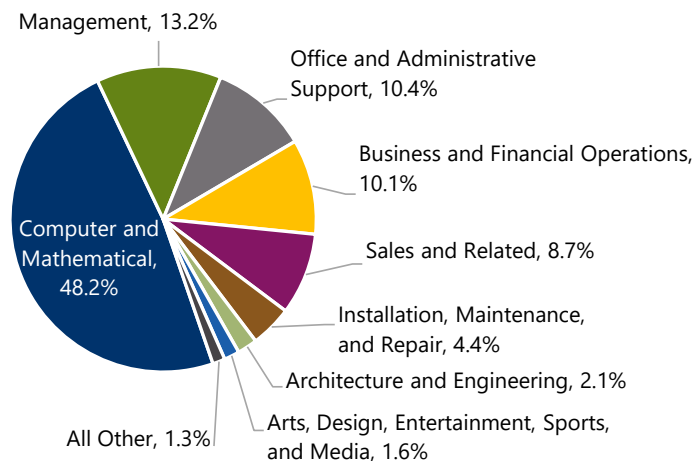
There are 22,068 jobs in the Technology industry cluster, spread across approximately 213 occupations. See Appendix D for the full staffing pattern. The top 30 occupations in terms of share of employment are shown to the right. Together, these 30 occupations account for 82% of the cluster's total employment. *Software Developers and Software Quality Assurance Analysts and Testers* account for 21% of the cluster's jobs, followed by *Computer User Support Specialists* (6%), *Computer Systems Analysts* (5%), *Computer and Information Systems Managers* (5%), and *Sales Representatives of Services* (4%).

Staffing Pattern for Technology Cluster: Top 30 Occupations, 5 digit SOC

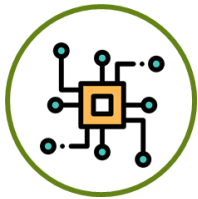
Occupation	Share of Cluster's 2021 Jobs
Software Developers and Software Quality Assurance Analysts and Testers	20.5%
Computer User Support Specialists	5.8%
Computer Systems Analysts	5.3%
Computer and Information Systems Managers	5.1%
Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	4.3%
Network and Computer Systems Administrators	3.4%
Computer Programmers	3.3%
Customer Service Representatives	3.2%
General and Operations Managers	2.7%
Computer Occupations, All Other	2.4%
Project Management Specialists and Business Operations Specialists, All Other	2.3%
Telecommunications Equipment Installers and Repairers, Except Line Installers	2.3%
Web Developers and Digital Interface Designers	1.9%
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	1.8%
Computer Network Support Specialists	1.7%
Management Analysts	1.7%
Market Research Analysts and Marketing Specialists	1.6%
Office Clerks, General	1.4%
Information Security Analysts	1.1%
Computer Network Architects	1.1%
Accountants and Auditors	1.1%
Human Resources Specialists	1.0%
First-Line Supervisors of Office and Administrative Support Workers	1.0%
Sales Managers	0.9%
Marketing Managers	0.9%
Financial Managers	0.9%
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	0.9%
Telecommunications Line Installers and Repairers	0.9%
Bookkeeping, Accounting, and Auditing Clerks	0.8%
Database Administrators and Architects	0.8%
Total	82.2%

Source: Emsi, 2022.1

Staffing for Technology Cluster by 2-Digit Occupation



Source: Emsi, 2022.1



Job Growth Trends by Occupation

Historical and projected job growth trends for the top 8 occupation sectors within the Technology cluster are shown below (note the Computer and Mathematical sector plotted on the right y-axis). These 8 sectors account for 99% of jobs in the cluster in 2021.

2016–2026

Overall, the top Technology occupation sectors are growing rapidly over the 10-year period, projected to increase employment by 32%. These gains are primarily concentrated in the *Business and Financial Operations* (66%), *Management* (57%), and *Computer and Mathematical* (43%) occupations. *Installation, Maintenance, and Repair* occupations are shrinking, losing 19% of jobs from 2016 to 2026, while *Office and Administrative Support* occupations are stagnant, shedding less than 1% of jobs.

2016–2019

Prior to the COVID-19 pandemic, occupational growth was mixed across the Technology cluster. Although total cluster employment increased 13%, half of the top 8 occupation sectors shrank. Jobs in the *Business and Financial Operations* (30%), *Management* (29%), and *Computer and Mathematical* (19%) occupations grew fastest, while *Installation, Maintenance, and Repair* (-23%), *Arts, Design, Entertainment, Sports, and Media* (-8%), and *Office and Administrative Support* (-4%) jobs declined.

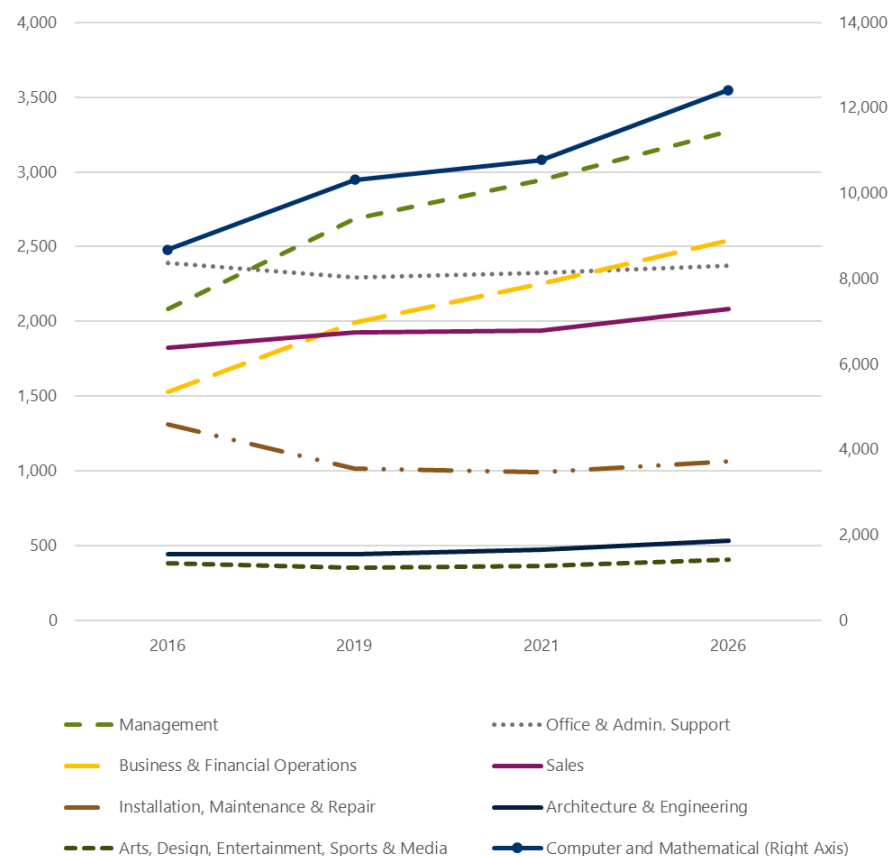
2019–2021

During the pandemic, New Hampshire’s Technology cluster continued to grow, expanding by 5%. Only one of the top 8 occupation sectors experienced job losses, with *Installation, Maintenance, and Repair* contracting by 2%. *Business and Financial Operations* and *Management* occupations were the most resilient, growing by 13% and 10%, respectively.

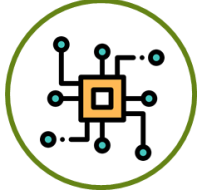
2021–2026

Looking forward, all sectors are projected to grow over the next few years. The fastest-growing top occupations are expected to be *Computer and Mathematical* (15%), *Architecture and Engineering* (13%), *Business and Financial Operations* (13%), *Arts, Design, Entertainment, Sports, and Media* (11%), and *Management* (11%).

Technology Cluster Job Growth by 2 Digit Occupation



Source: Emsi, 2022.1

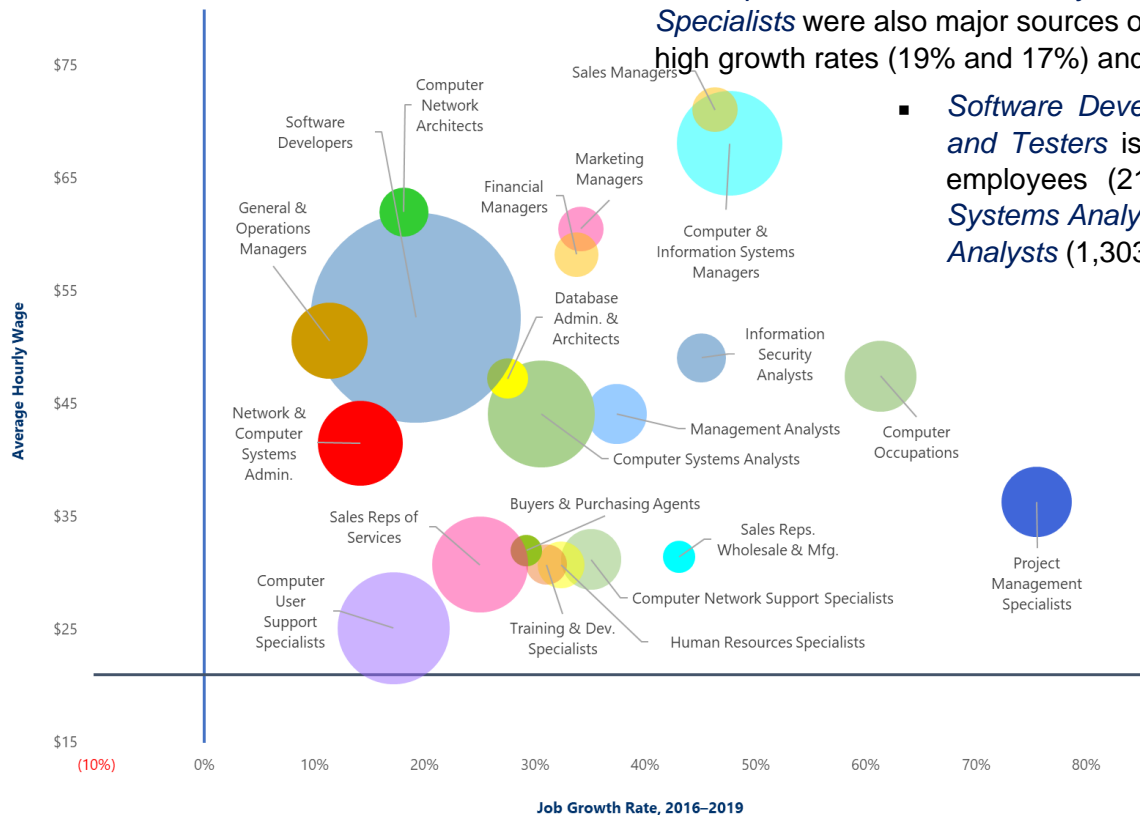


Top Occupations

The occupations below are the 21 top occupations in New Hampshire's Technology cluster, as determined by size (represented by bubble size), growth (plotted on the x-axis), and salary (plotted on the y-axis). For this analysis, occupations employing fewer than 100 Technology workers, with growth rates below 0.0% between 2016–2019 (pre-COVID data is assumed to be a better indicator of the occupation's overall trajectory), and earnings less than \$21.16 (the state's median hourly wage) were omitted.

Top Occupations in the Technology Cluster by 5-digit SOC

Bubble Size = 2021 Employment



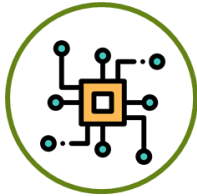
Source: Emsi, 2022.1

- *Computer and Information Systems Managers* and *Computer Occupations, All Other* are the top two Technology occupations by all three metrics: employment (1,144 and 531, respectively), growth (48% and 61%), and wages (\$68.13 and \$47.49). *Software Developers & Software Quality Assurance Analysts* and *Computer User Support Specialists* were also major sources of jobs (4,589 and 1,303, respectively) with relatively high growth rates (19% and 17%) and good wages (\$52.70 and \$25.15).

- *Software Developers and Software Quality Assurance Analysts and Testers* is the largest occupation in this cluster with 4,589 employees (21% of total employment, followed by *Computer Systems Analysts* (1,189) and *Computer and Information Systems Analysts* (1,303).

cluster experienced strong growth between 2016 and 2019 and even picked up the pace during the pandemic. *Project Management Specialists and Business Operations Specialists* was the fastest growing occupation (76%), followed by *Computer Occupations, All Other* (60%), and *Computer and Information Systems Managers* (48%).

- *Sales Managers* are the top earners within the cluster (\$71.13 per hour), followed by *Computer and Information Systems Managers* (\$68.13), *Computer Network Architects* (\$62.04), and *Marketing Managers* (\$60.55).

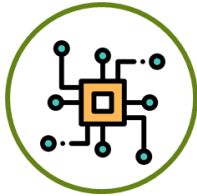


Attachment 1: Technology Cluster Definition

This cluster spans 10 industries and employs 22,373 workers. It includes selected industries from the *Information* sector (51) and the *Professional, Scientific, and Technical Services* sector (54).

NAICS	Industry	2021 Jobs
511210	Software Publishers	3,886
517311	Wired Telecommunications Carriers	3,336
517312	Wireless Telecommunications Carriers (except Satellite)	151
517410	Satellite Telecommunications	<10
517919	All Other Telecommunications	32
518210	Data Processing, Hosting, and Related Services	1,314
541511	Custom Computer Programming Services	4,378
541512	Computer Systems Design Services	8,254
541513	Computer Facilities Management Services	479
541519	Other Computer Related Services	533
Total		22,373

Source: Emsi, 2022.3



Attachment 2: Technology Cluster Staffing Pattern

The top 44 occupations (e.g. all occupations with more than 75 Technology employees) represent 89% of all employment in the Technology Cluster. Altogether, employment spans 211 occupations for a total of 22,373 jobs.

Staffing Patterns for the Technology Cluster, 2021

SOC	Occupation	Share of Cluster's Jobs	Jobs in Cluster (2021)	Median Hourly Earnings	Job Growth 2016–2021		Job Growth 2016–2019	
					Change	Rate	Change	Rate
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	20.5%	4,589	\$52.70	931	25%	702	19%
15-1232	Computer User Support Specialists	5.8%	1,303	\$25.15	252	24%	181	17%
15-1211	Computer Systems Analysts	5.3%	1,189	\$44.12	260	28%	284	31%
11-3021	Computer and Information Systems Managers	5.1%	1,144	\$68.13	446	64%	332	48%
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	4.3%	955	\$30.78	231	32%	181	25%
15-1244	Network and Computer Systems Administrators	3.4%	754	\$41.54	120	19%	90	14%
15-1251	Computer Programmers	3.3%	746	\$37.33	(103)	(12%)	(40)	(5%)
43-4051	Customer Service Representatives	3.2%	724	\$18.39	21	3%	23	3%
11-1021	General and Operations Managers	2.7%	603	\$50.64	83	16%	59	11%
15-1299	Computer Occupations, All Other	2.4%	531	\$47.49	200	60%	203	61%
13-1198	Project Management Specialists and Business Operations Specialists, All Other	2.3%	512	\$36.37	286	126%	171	76%
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	2.3%	507	\$33.82	(303)	(37%)	(254)	(31%)
15-1257	Web Developers and Digital Interface Designers	1.9%	432	\$28.42	47	12%	(14)	(4%)
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	1.8%	410	\$45.58	(141)	(26%)	(111)	(20%)
15-1231	Computer Network Support Specialists	1.7%	380	\$31.24	151	66%	80	35%
13-1111	Management Analysts	1.7%	379	\$44.14	122	47%	96	37%
13-1161	Market Research Analysts and Marketing Specialists	1.6%	358	\$30.45	104	41%	68	27%
43-9061	Office Clerks, General	1.4%	318	\$19.12	28	10%	25	9%
15-1212	Information Security Analysts	1.1%	248	\$49.13	106	75%	64	45%
15-1241	Computer Network Architects	1.1%	247	\$62.04	58	31%	34	18%
13-2011	Accountants and Auditors	1.1%	244	\$33.25	26	12%	20	9%
13-1071	Human Resources Specialists	1.0%	229	\$29.65	77	51%	49	32%

Staffing Patterns for the Technology Cluster, 2021 (continued)

SOC	Occupation	Share of Cluster's Jobs	Jobs in Cluster (2021)	Median Hourly Earnings	Job Growth 2016–2021		Job Growth 2016–2019	
					Change	Rate	Change	Rate
43-1011	First-Line Supervisors of Office and Administrative Support Workers	1.0%	218	\$28.94	12	6%	1	1%
11-2022	Sales Managers	0.9%	212	\$71.13	85	67%	59	46%
11-2021	Marketing Managers	0.9%	212	\$60.55	69	49%	49	34%
11-3031	Financial Managers	0.9%	204	\$58.28	69	51%	46	34%
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	0.9%	203	\$18.80	(7)	(3%)	(4)	(2%)
49-9052	Telecommunications Line Installers and Repairers	0.9%	191	\$26.19	(66)	(26%)	(60)	(23%)
43-3031	Bookkeeping, Accounting, and Auditing Clerks	0.8%	183	\$20.67	(3)	(1%)	(1)	(1%)
15-1245	Database Administrators and Architects	0.8%	174	\$47.29	52	43%	34	28%
13-1151	Training and Development Specialists	0.8%	173	\$30.79	57	49%	36	31%
11-9198	Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	0.7%	164	\$37.19	5	3%	(17)	(11%)
41-1012	First-Line Supervisors of Non-Retail Sales Workers	0.7%	155	\$39.94	(1)	(1%)	(5)	(3%)
41-9031	Sales Engineers	0.6%	134	\$58.55	(12)	(8%)	(2)	(1%)
43-9021	Data Entry Keyers	0.5%	118	\$16.58	(93)	(44%)	(86)	(41%)
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	0.5%	105	\$31.48	33	45%	31	43%
13-1028	Buyers and Purchasing Agents	0.5%	104	\$32.05	36	54%	20	29%
17-2072	Electronics Engineers, Except Computer	0.4%	98	\$53.46	(15)	(13%)	(12)	(10%)
11-1011	Chief Executives	0.4%	90	\$65.13	18	26%	4	6%
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	0.4%	87	\$34.61	4	5%	(1)	(1%)
15-2031	Operations Research Analysts	0.4%	87	\$44.65	(1)	(1%)	3	3%
17-2071	Electrical Engineers	0.4%	86	\$48.53	(3)	(4%)	(8)	(9%)
43-3021	Billing and Posting Clerks	0.4%	83	\$19.58	32	63%	17	33%
49-2011	Computer, Automated Teller, and Office Machine Repairers	0.4%	82	\$23.39	6	8%	(6)	(8%)

Source: Emsi, 2022.1



Appendix VIII: Job Postings Analytics for Top Occupations

Key Takeaways

Analysis of job postings data provides real-time insight into the occupations, the intensity of demand, and the skills and qualifications that employers are seeking based on job vacancy advertisements scraped from over 45,000 websites. This data is limited to the jobs advertisements posted on an online platform, but there is likely a great deal of variation in terms of online job advertisements among industries and occupations. This means that while this analysis can provide intelligence into the overall demand for a particular occupation, it is not indicative of the actual total demand for the Top Occupations in the State. Key takeaways from the job postings analytics include:

- **The 80 Top Occupations account for a significant portion of the job postings within the State.** On average, there were 4,822 unique job postings per month for the Top Occupations across the State, which accounts for 40% of the 12,067 unique job postings across all occupations.
- **Demand for the top occupations varies widely by region.** The Central-Southern CEDR is the leader in unique job postings within the State, accounting for 50% of the average monthly unique job postings for the Top Occupations. The Seacoast CEDR accounted for the second largest proportion of postings (28%), followed by the Northern CEDR (15%), then the South-Western CEDR (6%).
- **Unique job postings per month have increased slightly since the beginning of the COVID-19 Pandemic, but overall, the average number of monthly postings has remained consistent over the past 5 years.** On average, there are 4,777 job postings per month for the Top Occupations across the State. The Top Occupation within the State in terms of total number of unique postings is *Registered Nurses*, which accounted for 19% of the total job postings.
- **As a group, employers are putting average effort toward hiring the Top Occupations; however, posting intensity varied by occupation.** The State's average posting intensity of 2:1 for the Top Occupations, which is similar to the posting intensity for all other occupations in the State. *Rolling Machine Setters, Operators, and Tenders, Metal and Plastic* had the highest posting intensity of the Top Occupations, with 10 additional postings per 1 unique posting. Other occupations with relatively high posting intensities include *Industrial Machinery Mechanics* (6:1), *Electrical Engineers* (5:1), and *Industrial Engineers* (5:1).
- **There were 3 unique postings for every 1 job opening in the Top Occupations over the past 5 years. A disproportionate number of job advertisements every month relative to the number of open positions that are available is an indication that employers may be having trouble meeting their talent needs.** About half of the Top Occupations that had the highest ratios of postings per openings were in the Healthcare Practitioners and Technical Occupations sector, including *General Internal Medicine Physicians* (21.5 postings per opening), *Physical Therapists* (16.7), *Registered Nurses* (15.1), and *Nurse Practitioners* (11.4).
- **There was a gap of \$5,913 between the median annual earnings and the median advertised salary for the Top Occupations, which may indicate that employers are not having a hard time filling these positions. However, at the**

occupation-level, there are many postings that are paying a premium over the median earnings for the occupation, which may be an indication that employers are having a hard time filling these positions. The occupations with the largest premiums include *Magnetic Resonance Imaging Technicians* (job postings offered \$23,240 more per year than the median earnings for this occupation), *Computer Network Support Specialists* (\$15,235 more), *Database Administrators and Architects* (\$14,819), *Physicians, All Other; and Ophthalmologists, Except Pediatric* (\$14,442), and *Heavy and Tractor-Trailer Truck Drivers* (\$14,1630).

- The industries with the highest number of unique postings include **Administrative and Support and Waste Management and Remediation Services (16% of postings)**, **Health Care and Social Assistance (14%)**, **Manufacturing (10%)**, and **Retail (8%)**.
- Top Occupations that are in-demand based on meeting at least two of the jobs postings metrics are shown below:

In-Demand Top Occupations based on Job Postings Analytics, 5-digit SOC

Occupations that span multiple clusters shaded in grey

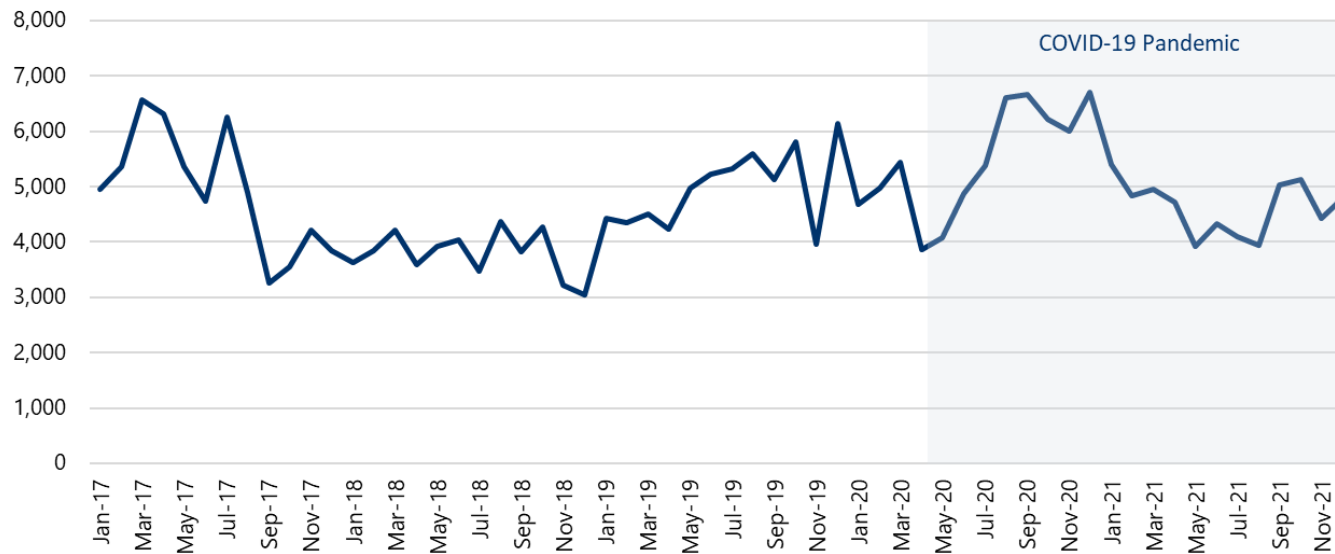
SOC	Occupation	Average Unique Postings	Posting Intensity	Postings per Job Opening	Salary Premium
11-1021	General and Operations Managers	x	x		
11-2022	Sales Managers	x		x	
11-3031	Financial Managers	x	x		
11-9051	Food Service Managers	x	x	x	
11-9111	Medical and Health Services Managers	x		x	
13-1081	Logisticians		x		
15-1231	Computer Network Support Specialists		x		x
15-1232	Computer User Support Specialists	x	x		
15-1241	Computer Network Architects		x	x	
15-1245	Database Administrators and Architects	x		x	x
15-1299	Computer Occupations, All Other	x		x	
29-1021	Dentists, General	x		x	
29-1051	Pharmacists		x	x	
29-1123	Physical Therapists	x		x	
29-1141	Registered Nurses		x	x	x
29-1171	Nurse Practitioners		x	x	
29-1216	General Internal Medicine Physicians		x	x	
29-1228	Physicians, All Other; and Ophthalmologists, Except Pediatric	x		x	x
29-2035	Magnetic Resonance Imaging Technologists			x	x
29-2061	Licensed Practical and Licensed Vocational Nurses	x	x	x	
41-1011	First-Line Supervisors of Retail Sales Workers	x		x	
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	x	x		
47-2111	Electricians		x		x
47-2152	Plumbers, Pipefitters, and Steamfitters		x		x
53-3032	Heavy and Tractor-Trailer Truck Drivers	x	x		x

Unique Postings

There were 4,789 unique job postings for the Top Occupations in the month of December 2021 across the State of New Hampshire, which is in line with the monthly average of 4,777 over the past 5 years. The average number of monthly postings has increased slightly since the beginning of the COVID-19 Pandemic, averaging 5,047 per month since April 2020. A drop or spike in posting behavior across industries indicates broad economic trends or talent issues that affect the labor market as a whole.

Unique Job Postings is the number of deduplicated job vacancy advertisements scraped from over 45,000 websites. Deduplication is the process of identifying duplicate job postings and only counting one of the duplicates. The unique posting count is the count of postings after the deduplication process has taken place.

Unique Job Postings by Month for Top Occupations

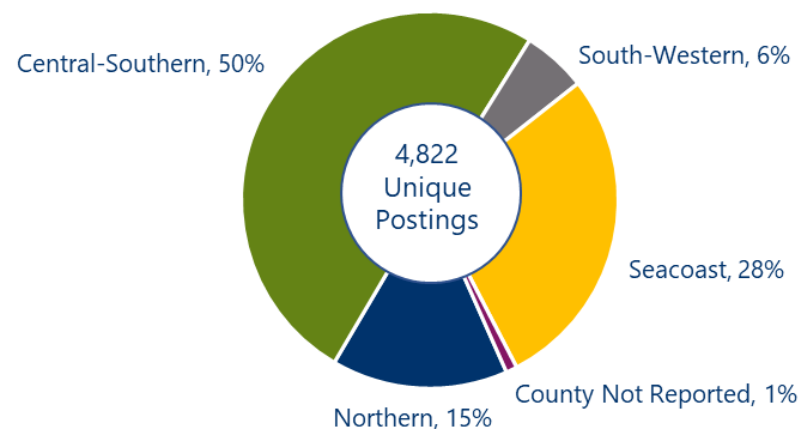


Source: Emsi

The 80 Top Occupations account for a significant portion of the job postings within the State. On average, there were 4,822 unique job postings per month for the Top Occupations across the State, which accounts for 40% of the 12,067 unique job postings across all occupations.

Registered Nurses is the top occupation within the State in terms of total number of unique postings, with an average of 933 postings per month. This occupation accounted for 19% of the job postings on average. Demand for this occupation was driven by the Central-Southern CEDR, which accounts for 39% of the postings for Registered Nurses. Overall, this region produced half of all unique job postings for the Top Occupations. Other than *Registered Nurses*, unique postings are well-dispersed among the other Top Occupations.

Average Monthly Unique Postings per Month for Top Occupations by Region, 2017 - 2021



Source: Emsi

Top Occupations by Average Unique Postings per Month, 2017 - 2021

SOC	Occupation	Average Unique Postings by Region					New Hampshire Total	Share of Total
		Northern	South Western	Central Southern	Seacoast	County Not Reported		
29-1141	Registered Nurses	242	53	364	272	2	933	19%
41-1011	First-Line Supervisors of Retail Sales Workers	51	22	139	97	2	311	6%
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	17	11	191	82	4	306	6%
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	22	10	155	72	3	262	5%
53-3032	Heavy and Tractor-Trailer Truck Drivers	30	15	106	77	2	230	5%
11-9111	Medical and Health Services Managers	27	9	74	39	2	150	3%
11-9198	Personal Service Managers, All Other; Entmnt. and Rec. Managers; and Managers, All Other	13	5	85	34	2	140	3%
15-1299	Computer Occupations, All Other	5	3	80	33	2	124	3%
29-2061	Licensed Practical and Licensed Vocational Nurses	24	10	47	27	1	108	2%
49-9071	Maintenance and Repair Workers, General	14	6	50	28	1	97	2%
11-1021	General and Operations Managers	12	4	52	26	1	96	2%
29-1123	Physical Therapists	21	12	34	21	0	88	2%
13-2011	Accountants and Auditors	8	5	50	22	1	86	2%
11-2022	Sales Managers	6	2	53	18	2	82	2%
29-1228	Physicians, All Other; and Ophthalmologists, Except Pediatric	22	4	36	18	0	82	2%
15-1232	Computer User Support Specialists	7	3	44	24	1	79	2%
11-9051	Food Service Managers	12	4	34	24	0	76	2%
13-1071	Human Resources Specialists	6	5	42	21	1	75	2%

Source: Emsi

Posting Intensity

There were 11,070 total job postings per month for the Top Occupations (average for January 2017 to December 2021). Of those postings, 4,822 were unique, which means that for every 2 job postings, 1 is unique. The State's resulting average posting intensity of 2:1 for the Top Occupations is similar to the posting intensity for all other occupations in the State, which indicates employers are putting average effort toward hiring for these positions. The Top Occupations with higher than average posting intensity (higher than 2:1) are shown on the following page, with darker colors indicating higher posting intensities.

- *Rolling Machine Setters, Operators, and Tenders, Metal and Plastic* had the highest posting intensity of the Top Occupations, with 10 postings per 1 unique posting in the Northern CEDR. The Northern CEDR also had high average intensities among engineering occupations – with a 5:1 posting intensity for *Electrical Engineers* and *Industrial Engineers* and a 4:1 intensity for *Mechanical Engineers* and *Mechanical Engineering Technologists and Technicians* – and *Inspectors, Testers, Sorters, Samplers, and Weighers* (4:1).
- The highest posting intensity in the Seacoast CEDR was for *Computer Network Support Specialists* (4:1).
- *Industrial Machinery Mechanics* had the highest posting intensity in the South-Western CEDR (6:1), and the second highest posting intensity in the State. Other occupations with relatively high demand include *Electrical Engineers* (5:1), *Financial Managers* (4:1), *Purchasing Managers* (4:1), and *Pediatricians, General* (4:1). This region had the most Top Occupations with above average posting intensity (17).
- The Central-Southern CEDR's highest demand was for *Operating Engineers and Other Construction Equipment Operators* (4:1). This region had the least number of Top Occupations with above average posting intensity (11).
- Although *Registered Nurses* accounts for the largest share of unique postings, it does not have a significant posting intensity across the regions, with a slightly above average ratio in the Northern and Seacoast CEDRs (3:1).

Total Job Postings are the count of postings before deduplication. For example, if there are 12 total job postings and 2 unique job postings, this means that the 12 postings contained 10 duplicates and only 2 unique job advertisements.

Posting Intensity is the ratio of total to unique (deduplicated) job postings. A higher-than-average posting intensity can mean that employers are putting more effort than normal into hiring that position.

Top Occupations by Average Posting Intensity, 2017 - 2021

SOC	Occupation	Average Posting Intensity by Region				New Hampshire Total
		Northern	South Western	Central Southern	Seacoast	
51-4023	Rolling Machine Setters, Operators, and Tenders, Metal and Plastic	10 : 1	2 : 1	3 : 1	0	7 : 1
13-1081	Logisticians	2 : 1	2 : 1	3 : 1	3 : 1	3 : 1
15-1231	Computer Network Support Specialists	2 : 1	3 : 1	3 : 1	4 : 1	3 : 1
15-1241	Computer Network Architects	2 : 1	3 : 1	3 : 1	3 : 1	3 : 1
17-2071	Electrical Engineers	5 : 1	2 : 1	3 : 1	2 : 1	3 : 1
17-2112	Industrial Engineers	5 : 1	5 : 1	2 : 1	2 : 1	3 : 1
17-2141	Mechanical Engineers	4 : 1	3 : 1	2 : 1	3 : 1	3 : 1
29-1141	Registered Nurses	3 : 1	2 : 1	2 : 1	3 : 1	3 : 1
29-2061	Licensed Practical and Licensed Vocational Nurses	2 : 1	3 : 1	3 : 1	3 : 1	3 : 1
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	2 : 1	2 : 1	3 : 1	2 : 1	3 : 1
47-2073	Operating Engineers and Other Construction Equipment Operators	2 : 1	1 : 1	4 : 1	3 : 1	3 : 1
47-2152	Plumbers, Pipefitters, and Steamfitters	2 : 1	2 : 1	3 : 1	3 : 1	3 : 1
49-9041	Industrial Machinery Mechanics	2 : 1	6 : 1	3 : 1	2 : 1	3 : 1
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	4 : 1	3 : 1	2 : 1	2 : 1	3 : 1
11-1021	General and Operations Managers	2 : 1	3 : 1	2 : 1	2 : 1	2 : 1
11-3021	Computer and Information Systems Managers	2 : 1	3 : 1	2 : 1	2 : 1	2 : 1
11-3031	Financial Managers	2 : 1	4 : 1	2 : 1	2 : 1	2 : 1
11-3061	Purchasing Managers	2 : 1	4 : 1	2 : 1	2 : 1	2 : 1
11-9051	Food Service Managers	3 : 1	2 : 1	2 : 1	2 : 1	2 : 1
15-1211	Computer Systems Analysts	3 : 1	3 : 1	2 : 1	2 : 1	2 : 1
15-1232	Computer User Support Specialists	3 : 1	2 : 1	2 : 1	2 : 1	2 : 1
15-1244	Network and Computer Systems Administrators	2 : 1	3 : 1	2 : 1	2 : 1	2 : 1
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	3 : 1	2 : 1	2 : 1	2 : 1	2 : 1
17-3027	Mechanical Engineering Technologists and Technicians	4 : 1	2 : 1	2 : 1	2 : 1	2 : 1
29-1051	Pharmacists	3 : 1	2 : 1	2 : 1	2 : 1	2 : 1
29-1171	Nurse Practitioners	2 : 1	3 : 1	2 : 1	2 : 1	2 : 1
29-1216	General Internal Medicine Physicians	2 : 1	2 : 1	2 : 1	3 : 1	2 : 1
29-1221	Pediatricians, General	2 : 1	4 : 1	1 : 1	2 : 1	2 : 1
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	3 : 1	2 : 1	2 : 1	2 : 1	2 : 1
47-2051	Cement Masons and Concrete Finishers	3 : 1	1 : 1	1 : 1	1 : 1	2 : 1
47-2111	Electricians	2 : 1	2 : 1	2 : 1	3 : 1	2 : 1
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	2 : 1	2 : 1	2 : 1	3 : 1	2 : 1
49-3053	Outdoor Power Equipment and Other Small Engine Mechanics	2 : 1	3 : 1	1 : 1	2 : 1	2 : 1
51-1011	First-Line Supervisors of Production and Operating Workers	2 : 1	3 : 1	2 : 1	2 : 1	2 : 1
51-9161	Computer Numerically Controlled Tool Operators	2 : 1	2 : 1	3 : 1	2 : 1	2 : 1
53-3032	Heavy and Tractor-Trailer Truck Drivers	2 : 1	2 : 1	2 : 1	3 : 1	2 : 1
Total Across All Top Occupations		2 : 1	2 : 1	2 : 1	2 : 1	2 : 1

Source: Emsi



Postings per Opening

There were 3 unique postings for every 1 job opening in the Top Occupations over the past 5 years. A disproportionate number of job advertisements every month relative to the number of open positions that are available is an indication that employers may be having trouble meeting their talent needs. The Top Occupations included on the following page are ones that had over 100 job postings per year over the past five years with over a 5 postings per opening.

About half of the Top Occupations that had the highest ratios of postings per openings were in the **Healthcare Practitioners and Technical Occupations** sector.

- *General Internal Medicine Physicians* had the most unique postings per job openings during this time period, with 21.5 postings per opening. Demand was driven by the Central Southern (28.0 postings per opening) and Northern (23.5) CEDRs.
- *Physical Therapists* were in high demand, particularly in the South-Western CEDR, where there were 55.2 posting for every job opening (the highest proportion of postings per opening among the 80 Top Occupations).
- *Registered Nurses* had consistently high demand across the CEDRs.
- Demand for *Nurse Practitioners* was driven by the South-Western CEDR, with 21.3 postings per opening.

Openings are the projected number of new jobs created plus replacement jobs resulting from workers retiring or otherwise permanently leaving an occupation.

Top Occupations by Unique Postings per Job Opening, 2017 - 2021

SOC	Description	New Hampshire Total			Postings per Job Opening by Region			
		Unique Postings	÷ Openings	= Postings per Job Opening	Northern	South Western	Central Southern	Seacoast
29-1216	General Internal Medicine Physicians	1,943	90	21.5	23.5	.	28.0	12.0
29-1123	Physical Therapists	5,285	317	16.7	18.5	55.2	17.7	13.8
29-1141	Registered Nurses	55,974	3,711	15.1	14.2	17.3	14.3	18.4
29-1171	Nurse Practitioners	4,154	363	11.4	11.7	21.3	11.8	9.7
15-1299	Computer Occupations, All Other	7,432	734	10.1	4.3	7.3	15.5	10.0
11-9111	Medical and Health Services Managers	9,020	907	9.9	8.2	12.6	11.0	10.1
15-1245	Database Administrators and Architects	3,031	310	9.8	3.5	12.4	14.6	10.2
29-1127	Speech-Language Pathologists	4,099	440	9.3	10.6	18.1	10.2	6.7
29-2061	Licensed Practical and Licensed Vocational Nurses	6,503	769	8.5	9.8	11.3	8.0	8.3
29-1228	Physicians, All Other; and Ophthalmologists, Except Pediatric	4,892	616	7.9	8.2	8.9	8.9	6.4
15-1241	Computer Network Architects	1,341	212	6.3	4.4	.	7.3	11.9
29-2035	Magnetic Resonance Imaging Technologists	715	116	6.1	2.4	.	5.4	11.3
17-2072	Electronics Engineers, Except Computer	970	169	5.7	2.9	.	7.4	3.4
11-2022	Sales Managers	4,928	873	5.6	3.8	2.7	9.5	4.6
11-9051	Food Service Managers	4,530	804	5.6	4.2	5.4	7.2	5.1
11-2021	Marketing Managers	3,648	681	5.4	2.9	3.4	8.3	5.4
41-1011	First-Line Supervisors of Retail Sales Workers	18,673	3,675	5.1	4.5	4.4	6.0	4.6
29-1051	Pharmacists	1,818	361	5.0	7.0	6.1	4.7	4.6
29-1021	Dentists, General	633	127	5.0	4.7	.	6.5	3.3

Source: Emsi

Advertised Salary vs. Median Earnings

The median advertised salary across the 80 Top Occupations was \$64,960; however, the median annual earnings for this occupation within the State was \$70,873, resulting in a gap of \$5,913. This indicates that employers may not be having a hard time filling these positions as a whole group. However, at the occupation-level, there are many postings that are paying a premium over the median earnings for the occupation, which may be an indication that employers are having a hard time filling these positions. However, the advertised salary data is based on 36,924 advertised salary observations, which is only 13% of the 290,632 postings that occurred for the Top Occupations over the past 5 years. This means the advertised salary can provide an indication of employer's demand for a given occupation but is not necessarily representative of the salaries being offered across all job postings.

- *Magnetic Resonance Imaging Technicians* had the largest gap between the average earnings and the advertised salary, with job postings offering \$23,240 more per year than the median earnings for this occupation. This may indicate that employers are paying a premium to attract qualified candidates. By this metric, each of the CEDRs had high demand for this occupation.
- While all of the occupations listed below are in-demand at the State-level, that demand varies widely by region. For example, postings for *Computer Network Support Specialists* at the State-level offered \$15,235 above the median annual earnings; however, the regions vary widely with a premium of \$35,284 in the Seacoast CEDR but \$43,280 below the median in the Northern CEDR.
- Occupations in demand across all regions include *Magnetic Resonance Imaging Technicians*, *Heavy and Tractor-Trailer Truck Drivers*, *Electricians*, and *Registered Nurses*.

Top Occupations by Salary Premium Offered in Job Postings, 2017 - 2021

SOC	Occupation	New Hampshire Total			Premium / (Discount) by Region			
		Advertised Salary	Average Earnings	Premium / (Discount)	Northern	South Western	Central Southern	Seacoast
29-2035	Magnetic Resonance Imaging Technologists	\$100,096	\$76,856	\$23,240	\$13,623	\$14,580	\$27,823	\$27,460
15-1231	Computer Network Support Specialists	\$80,256	\$65,021	\$15,235	(\$14,930)	(\$6,733)	\$10,029	\$35,284
15-1245	Database Administrators and Architects	\$113,536	\$98,717	\$14,819	(\$43,280)	(\$16,395)	\$17,319	\$19,628
29-1228	Physicians, All Other; and Ophthalmologists, Except Pediatric	\$240,512	\$226,070	\$14,442	\$28,025	(\$120,817)	(\$5,438)	(\$3,935)
53-3032	Heavy and Tractor-Trailer Truck Drivers	\$62,336	\$48,173	\$14,163	\$16,508	\$16,654	\$13,723	\$13,171
47-2042	Floor Layers, Except Carpet, Wood, and Hard Tiles	\$59,264	\$45,510	\$13,754	.	.	\$41,813	(\$9,893)
47-2111	Electricians	\$66,816	\$55,266	\$11,550	\$18,492	\$7,349	\$5,774	\$16,323
47-2152	Plumbers, Pipefitters, and Steamfitters	\$63,360	\$52,728	\$10,632	\$6,554	(\$10,993)	\$8,905	\$18,273
15-1212	Information Security Analysts	\$112,384	\$102,190	\$10,194	(\$10,398)	\$21,132	\$10,049	\$20,853
29-1141	Registered Nurses	\$84,224	\$74,838	\$9,386	\$3,440	\$10,684	\$12,282	\$12,733

Source: Emsi

Top Employers Posting

The industries with the highest number of unique postings include **Administrative and Support and Waste Management and Remediation Services** (16% of postings), **Health Care and Social Assistance** (14%), **Manufacturing** (10%), and **Retail** (8%).

Over the past 5 years, 933 New Hampshire companies have posted jobs on an online platform, resulting in an average of 62 unique job postings per employer per year. The employers shown to the right had more than 100 hires per year for the past 5 years with above average posting intensity. These are the employers that are doing the most online hiring but having the hardest time filling their positions.

- Overall, unique postings were well-dispersed among the employers, with no one company accounting for more than a 3% share of postings.
- BAE Systems had 8,545 job postings for Top Occupations over the past 5 years. It accounted for 3% of all postings.
- The Dartmouth-Hitchcock Medical Center had the second highest number of postings in the State, with 7,097 between 2017 and 2021.
- Comcast had the highest average posting intensity in the State, at 15 total postings per 1 unique job posting.
- Other employers with relatively high posting intensities include Aureus Group (6:1), C&A Industries (6:1), CompHealth (5:1), CyberCoders (5:1), and Walmart (5:1).

Top Companies by Unique Postings for Top Occupations, 2017 - 2021

Company	Unique Postings	Share of Postings	Average Intensity
BAE Systems	8,545	3%	3 : 1
Dartmouth-Hitchcock Medical Center	7,097	2%	3 : 1
Robert Half	4,432	2%	3 : 1
Genesis Healthcare	3,961	1%	3 : 1
Randstad	2,870	1%	3 : 1
HCA Healthcare	2,640	1%	4 : 1
Liberty Mutual	1,939	1%	3 : 1
CyberCoders	1,596	1%	5 : 1
Fidelity Investments	1,488	1%	3 : 1
The Home Depot	1,227	0%	3 : 1
Elliot Health System	1,202	0%	3 : 1
CVS Health	1,065	0%	3 : 1
Portsmouth Regional Hospital	973	0%	3 : 1
Dartmouth College	941	0%	4 : 1
CompHealth	923	0%	5 : 1
K.A. Recruiting	922	0%	3 : 1
Dollar Tree	805	0%	3 : 1
Acca	805	0%	3 : 1
Comcast	766	0%	15 : 1
Sig Sauer	765	0%	3 : 1
Walmart	762	0%	5 : 1
Walgreens Boots Alliance	733	0%	3 : 1
Parkland Medical Center	700	0%	3 : 1
Lonza	664	0%	3 : 1
Aureus Group	615	0%	6 : 1
Kforce	595	0%	3 : 1
United States Department of Veterans Affairs	582	0%	3 : 1
C&A Industries	578	0%	6 : 1
Cross Country Healthcare	530	0%	3 : 1
UPS	517	0%	3 : 1
Best Buy	512	0%	3 : 1
Interim HealthCare	510	0%	3 : 1

Source: Emsi



Appendix IX: Gap Analysis

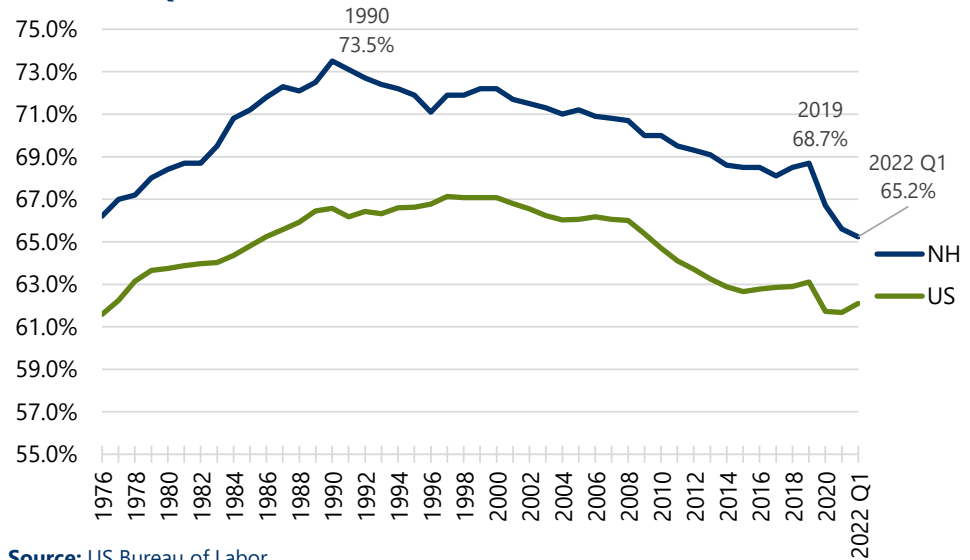
Labor Force Projections

Camoin Associates analyzed New Hampshire and US labor force data to estimate the projected change in the State's labor force from 2022 to 2032. Emsi provides population projections by age group, so we looked at national labor force participation rates for the same five-year age groups (age-based participation rates are not available at the state level). Emsi forecasts a 3% increase in the population aged 16 and older, with declines of less than 1% to as much as 27% across the younger age groups from 15 through 34 years old and the older age groups from 50 through 69 years old.

Overall labor force participation has been declining since 1990 in New Hampshire and since 2000 in the US, with a relatively stable period from 1989 to 2008. National participation rates for all five-year age groups from 16–19 to 45–49 also exhibit distinct downward trends since 1990. However, participation rates for ages 50–54 and 55–59 have generally fluctuated around their 20- or 30-year averages, while participation rates for all five-year groups age 60 and older have increased since 1990.

Camoin projected each age group's long-term trends out to 2032, then scaled them up by the percentage difference between New Hampshire's total labor force participation rate and the US's. Applying these adjusted age-based labor force participation rates to New Hampshire's population by age in 2022 and 2032 yields an effective total participation rate of 63.3% and a labor force increase of 21,008. This age-based approach has the advantage of capturing changes in both the age structure of the state's population and labor force participation by age. This leaves a workforce gap of 77,114 in 2032.

Labor Force Participation Rate, New Hampshire vs. US, 1976–2022 Q1



Source: US Bureau of Labor

Projected Openings (Demand)

Statewide Openings

There are projected to be almost 197,000 job openings for the Top Occupations in New Hampshire between 2022 and 2032. The table to the right shows those with at least 2,000 openings. The most in-demand occupations include:

- *General and Operations Managers*, with 12,301 projected openings
- *Software Developers and Software Quality Assurance Analysts and Testers* (9,706 openings)
- *Heavy and Tractor-Trailer Truck Drivers* (9,468)
- *Registered Nurses* (8,358)
- *Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products* (8,293)

Top Occupations by Projected Openings, 2022–2032

SOC	Description	2022–2032 Openings
11-1021	General and Operations Managers	12,301
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	9,706
53-3032	Heavy and Tractor-Trailer Truck Drivers	9,468
29-1141	Registered Nurses	8,358
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	8,293
41-1011	First-Line Supervisors of Retail Sales Workers	7,716
43-1011	First-Line Supervisors of Office and Administrative Support Workers	7,451
13-2011	Accountants and Auditors	5,921
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	5,690
47-2031	Carpenters	5,274
49-9071	Maintenance and Repair Workers, General	5,234
13-1111	Management Analysts	4,349
13-1198	Project Management Specialists and Business Operations Specialists, All Other	4,249
39-9031	Exercise Trainers and Group Fitness Instructors	4,556
47-2111	Electricians	4,051
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	3,772
11-3031	Financial Managers	3,678
11-9198	Personal Service Managers, All Other; Entmt. and Rec. Managers; and Managers, All Other	3,686
13-1161	Market Research Analysts and Marketing Specialists	3,617
13-1071	Human Resources Specialists	3,348
51-1011	First-Line Supervisors of Production and Operating Workers	3,024
51-9161	Computer Numerically Controlled Tool Operators	2,985
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	2,945
15-1232	Computer User Support Specialists	2,878
11-3021	Computer and Information Systems Managers	2,707
15-1211	Computer Systems Analysts	2,530
25-3021	Self-Enrichment Teachers	2,666
47-2152	Plumbers, Pipefitters, and Steamfitters	2,498
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	2,490
13-1028	Buyers and Purchasing Agents	2,319
11-9111	Medical and Health Services Managers	2,324
49-9041	Industrial Machinery Mechanics	2,276
11-9021	Construction Managers	2,266
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	2,112
Total		196,971

Source: Emsi

Openings by Region

Top Occupations by Projected Openings, 2022–2032, Northern CEDR

SOC	Description	2022–2032 Openings
29-1141	Registered Nurses	2,413
11-1021	General and Operations Managers	1,676
53-3032	Heavy and Tractor-Trailer Truck Drivers	1,416
41-1011	First-Line Supervisors of Retail Sales Workers	1,415
43-1011	First-Line Supervisors of Office and Administrative Support Workers	1,186
49-9071	Maintenance and Repair Workers, General	1,099
47-2031	Carpenters	1,058
11-9198	Personal Service Managers, All Other; Entmt. and Rec. Managers; and Managers, All Other	725
13-2011	Accountants and Auditors	720
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	706
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	700
47-2111	Electricians	683
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	602
39-9031	Exercise Trainers and Group Fitness Instructors	562
13-1198	Project Management Specialists and Business Operations Specialists, All Other	556
11-9111	Medical and Health Services Managers	533
13-1111	Management Analysts	507
51-9161	Computer Numerically Controlled Tool Operators	505
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	503
25-3021	Self-Enrichment Teachers	492
11-9021	Construction Managers	475
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	417
11-3031	Financial Managers	411
13-1071	Human Resources Specialists	402
51-1011	First-Line Supervisors of Production and Operating Workers	400
13-1161	Market Research Analysts and Marketing Specialists	395
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	381
47-2152	Plumbers, Pipefitters, and Steamfitters	378
11-9051	Food Service Managers	356
29-2061	Licensed Practical and Licensed Vocational Nurses	343
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	342
47-2073	Operating Engineers and Other Construction Equipment Operators	323
29-1171	Nurse Practitioners	308
Total		29,177

Source: Emsi

Top Occupations by Projected Openings, 2022–2032, Central-Southern CEDR

SOC	Description	2022–2032 Openings
11-1021	General and Operations Managers	4,809
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	3,836
53-3032	Heavy and Tractor-Trailer Truck Drivers	3,451
29-1141	Registered Nurses	3,370
43-1011	First-Line Supervisors of Office and Administrative Support Workers	3,012
41-1011	First-Line Supervisors of Retail Sales Workers	2,871
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	2,519
13-2011	Accountants and Auditors	2,412
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	2,138
39-9031	Exercise Trainers and Group Fitness Instructors	1,987
49-9071	Maintenance and Repair Workers, General	1,953
47-2031	Carpenters	1,944
13-1198	Project Management Specialists and Business Operations Specialists, All Other	1,769
13-1111	Management Analysts	1,767
47-2111	Electricians	1,760
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	1,610
11-3031	Financial Managers	1,527
13-1161	Market Research Analysts and Marketing Specialists	1,414
11-9198	Personal Service Managers, All Other; Entmt. and Rec. Managers; and Managers, All Other	1,408
13-1071	Human Resources Specialists	1,270
51-1011	First-Line Supervisors of Production and Operating Workers	1,185
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	1,154
47-2152	Plumbers, Pipefitters, and Steamfitters	1,074
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	1,063
51-9161	Computer Numerically Controlled Tool Operators	1,042
11-3021	Computer and Information Systems Managers	1,028
15-1232	Computer User Support Specialists	1,024
25-3021	Self-Enrichment Teachers	1,004
13-1028	Buyers and Purchasing Agents	999
11-9111	Medical and Health Services Managers	990
15-1211	Computer Systems Analysts	930
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	893
49-9041	Industrial Machinery Mechanics	857
11-9021	Construction Managers	841
31-9091	Dental Assistants	804
29-2061	Licensed Practical and Licensed Vocational Nurses	794
Total		77,450

Source: Emsi

Top Occupations by Projected Openings, 2022–2032, South-Western CEDR

SOC	Description	2022–2032 Openings
11-1021	General and Operations Managers	739
41-1011	First-Line Supervisors of Retail Sales Workers	658
53-3032	Heavy and Tractor-Trailer Truck Drivers	611
47-2031	Carpenters	505
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	482
43-1011	First-Line Supervisors of Office and Administrative Support Workers	452
51-9161	Computer Numerically Controlled Tool Operators	450
29-1141	Registered Nurses	389
49-9071	Maintenance and Repair Workers, General	375
13-2011	Accountants and Auditors	341
51-1011	First-Line Supervisors of Production and Operating Workers	315
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	308
11-9198	Personal Service Managers, All Other; Entmt. and Rec. Managers; and Managers, All Other	293
47-2111	Electricians	248
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	241
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	234
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	220
49-9041	Industrial Machinery Mechanics	208
13-1198	Project Management Specialists and Business Operations Specialists, All Other	205
39-9031	Exercise Trainers and Group Fitness Instructors	191
11-9021	Construction Managers	188
11-3031	Financial Managers	183
13-1071	Human Resources Specialists	181
13-1111	Management Analysts	178
13-1161	Market Research Analysts and Marketing Specialists	172
25-3021	Self-Enrichment Teachers	171
17-2141	Mechanical Engineers	170
13-1028	Buyers and Purchasing Agents	167
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	151
47-2152	Plumbers, Pipefitters, and Steamfitters	138
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	133
31-9091	Dental Assistants	133
29-2061	Licensed Practical and Licensed Vocational Nurses	126
11-9111	Medical and Health Services Managers	122
17-2112	Industrial Engineers	114
47-2073	Operating Engineers and Other Construction Equipment Operators	105
15-1232	Computer User Support Specialists	100
11-2022	Sales Managers	100
Total		12,078

Source: Emsi

Top Occupations by Projected Openings, 2022–2032, Seacoast CEDR

SOC	Description	2022–2032 Openings
11-1021	General and Operations Managers	3,678
53-3032	Heavy and Tractor-Trailer Truck Drivers	3,326
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	2,736
41-1011	First-Line Supervisors of Retail Sales Workers	2,664
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	2,255
43-1011	First-Line Supervisors of Office and Administrative Support Workers	2,159
29-1141	Registered Nurses	2,008
39-9031	Exercise Trainers and Group Fitness Instructors	1,781
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	1,775
13-2011	Accountants and Auditors	1,749
49-9071	Maintenance and Repair Workers, General	1,565
47-2031	Carpenters	1,563
13-1111	Management Analysts	1,264
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	1,241
13-1198	Project Management Specialists and Business Operations Specialists, All Other	1,135
11-9198	Personal Service Managers, All Other; Entmt. and Rec. Managers; and Managers, All Other	1,131
47-2111	Electricians	1,118
11-3031	Financial Managers	1,043
51-1011	First-Line Supervisors of Production and Operating Workers	1,041
13-1161	Market Research Analysts and Marketing Specialists	997
51-9161	Computer Numerically Controlled Tool Operators	946
25-3021	Self-Enrichment Teachers	920
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	915
13-1071	Human Resources Specialists	872
47-2152	Plumbers, Pipefitters, and Steamfitters	842
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	833
15-1232	Computer User Support Specialists	821
49-9041	Industrial Machinery Mechanics	782
11-3021	Computer and Information Systems Managers	766
15-1211	Computer Systems Analysts	745
11-9021	Construction Managers	679
31-9091	Dental Assistants	625
13-1028	Buyers and Purchasing Agents	618
11-9051	Food Service Managers	617
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	604
11-9111	Medical and Health Services Managers	601
47-2073	Operating Engineers and Other Construction Equipment Operators	541
Total		58,754

Source: Emsi

Gaps By Region

Top Occupations with the Largest Projected Employment Gaps in the Northern CEDR, 2022–2032

SOC	Description	2022 Employment	2022–2032 Openings	2022–2032 Labor Force	Projected Gap
29-1141	Registered Nurses	3,902	2,413	1.63	(2,412)
11-1021	General and Operations Managers	1,916	1,676	0.78	(1,675)
53-3032	Heavy and Tractor-Trailer Truck Drivers	1,248	1,416	0.49	(1,415)
41-1011	First-Line Supervisors of Retail Sales Workers	1,389	1,415	0.51	(1,415)
43-1011	First-Line Supervisors of Office and Administrative Support Workers	1,237	1,186	0.47	(1,185)
49-9071	Maintenance and Repair Workers, General	1,101	1,099	0.45	(1,098)
47-2031	Carpenters	1,155	1,058	0.44	(1,057)
11-9198	Personal Service Managers, All Other; Entmt. and Rec. Managers; and Managers, All Other	855	725	0.37	(724)
13-2011	Accountants and Auditors	796	720	0.32	(719)
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	781	706	0.35	(706)
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	672	700	0.28	(700)
47-2111	Electricians	579	683	0.25	(683)
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	493	602	0.20	(602)
39-9031	Exercise Trainers and Group Fitness Instructors	292	562	0.14	(562)
13-1198	Project Management Specialists and Business Operations Specialists, All Other	703	556	0.29	(555)
11-9111	Medical and Health Services Managers	512	533	0.24	(533)
13-1111	Management Analysts	534	507	0.22	(507)
51-9161	Computer Numerically Controlled Tool Operators	472	505	0.18	(505)
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	533	503	0.20	(503)
25-3021	Self-Enrichment Teachers	336	492	0.16	(492)
11-9021	Construction Managers	572	475	0.24	(475)
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	371	417	0.13	(417)
11-3031	Financial Managers	518	411	0.22	(411)
13-1071	Human Resources Specialists	409	402	0.17	(402)
51-1011	First-Line Supervisors of Production and Operating Workers	396	400	0.16	(400)
13-1161	Market Research Analysts and Marketing Specialists	344	395	0.15	(395)
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	379	381	0.15	(380)
47-2152	Plumbers, Pipefitters, and Steamfitters	340	378	0.14	(378)
11-9051	Food Service Managers	265	356	0.12	(356)
29-2061	Licensed Practical and Licensed Vocational Nurses	412	343	0.17	(342)
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	365	342	0.15	(342)
47-2073	Operating Engineers and Other Construction Equipment Operators	293	323	0.12	(323)
29-1171	Nurse Practitioners	310	308	0.17	(308)
13-1028	Buyers and Purchasing Agents	317	294	0.12	(293)
15-1232	Computer User Support Specialists	378	279	0.15	(279)
31-9091	Dental Assistants	219	279	0.09	(279)
49-9041	Industrial Machinery Mechanics	245	258	0.11	(258)
Total		32,257	29,177	13	(29,164)

Source: Emsi and Camoin Associates



BLA

State of New Hampshire Workforce Assessment

Top Occupations with the Largest Projected Employment Gaps in the Central-Southern CEDR, 2022–2032

SOC	Description	2022 Employment	2022–2032 Openings	2022–2032 Labor Force	Projected Gap
11-1021	General and Operations Managers	5,593	4,809	245	(4,563)
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	4,288	3,836	206	(3,631)
53-3032	Heavy and Tractor-Trailer Truck Drivers	3,027	3,451	132	(3,319)
29-1141	Registered Nurses	6,244	3,370	266	(3,105)
43-1011	First-Line Supervisors of Office and Administrative Support Workers	3,157	3,012	128	(2,885)
41-1011	First-Line Supervisors of Retail Sales Workers	2,869	2,871	111	(2,759)
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	2,644	2,519	108	(2,410)
13-2011	Accountants and Auditors	2,758	2,412	117	(2,295)
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	1,841	2,138	80	(2,058)
39-9031	Exercise Trainers and Group Fitness Instructors	826	1,987	54	(1,933)
49-9071	Maintenance and Repair Workers, General	2,042	1,953	88	(1,865)
47-2031	Carpenters	2,129	1,944	88	(1,856)
47-2111	Electricians	1,461	1,760	70	(1,690)
13-1111	Management Analysts	1,841	1,767	82	(1,685)
13-1198	Project Management Specialists and Business Operations Specialists, All Other	2,243	1,769	100	(1,668)
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	1,453	1,610	54	(1,556)
11-3031	Financial Managers	1,953	1,527	88	(1,440)
13-1161	Market Research Analysts and Marketing Specialists	1,228	1,414	59	(1,355)
11-9198	Personal Service Managers, All Other; Entmt. and Rec. Managers; and Managers, All Other	1,706	1,408	78	(1,330)
13-1071	Human Resources Specialists	1,300	1,270	57	(1,214)
51-1011	First-Line Supervisors of Production and Operating Workers	1,231	1,185	51	(1,134)
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	1,186	1,154	50	(1,104)
47-2152	Plumbers, Pipefitters, and Steamfitters	1,002	1,074	44	(1,030)
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	1,089	1,063	47	(1,016)
51-9161	Computer Numerically Controlled Tool Operators	1,001	1,042	40	(1,003)
11-3021	Computer and Information Systems Managers	1,360	1,028	59	(969)
25-3021	Self-Enrichment Teachers	740	1,004	36	(968)
15-1232	Computer User Support Specialists	1,350	1,024	59	(965)
13-1028	Buyers and Purchasing Agents	1,086	999	43	(956)
11-9111	Medical and Health Services Managers	1,012	990	50	(940)
15-1211	Computer Systems Analysts	1,299	930	56	(875)
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	976	893	43	(851)
49-9041	Industrial Machinery Mechanics	859	857	40	(817)
11-9021	Construction Managers	1,011	841	47	(794)
31-9091	Dental Assistants	622	804	29	(775)
29-2061	Licensed Practical and Licensed Vocational Nurses	1,008	794	44	(750)
Total		86,609	77,450	3,801	(73,649)

Source: Emsi and Camoin Associates

Top Occupations with the Largest Projected Employment Gaps in the South-Western CEDR, 2022–2032

SOC	Description	2022 Employment	2022–2032 Openings	2022–2032 Labor Force	Projected Gap
11-1021	General and Operations Managers	862	739	(22)	(761)
41-1011	First-Line Supervisors of Retail Sales Workers	633	658	(15)	(673)
53-3032	Heavy and Tractor-Trailer Truck Drivers	538	611	(14)	(625)
47-2031	Carpenters	533	505	(13)	(518)
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	472	482	(12)	(494)
43-1011	First-Line Supervisors of Office and Administrative Support Workers	480	452	(11)	(464)
51-9161	Computer Numerically Controlled Tool Operators	435	450	(10)	(460)
29-1141	Registered Nurses	705	389	(18)	(407)
49-9071	Maintenance and Repair Workers, General	379	375	(10)	(385)
13-2011	Accountants and Auditors	382	341	(10)	(351)
51-1011	First-Line Supervisors of Production and Operating Workers	324	315	(8)	(323)
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	279	308	(6)	(314)
11-9198	Personal Service Managers, All Other; Entmt. and Rec. Managers; and Managers, All Other	355	293	(10)	(303)
47-2111	Electricians	229	248	(6)	(254)
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	199	241	(5)	(247)
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	249	234	(6)	(240)
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	261	220	(7)	(228)
49-9041	Industrial Machinery Mechanics	204	208	(6)	(213)
13-1198	Project Management Specialists and Business Operations Specialists, All Other	265	205	(7)	(212)
39-9031	Exercise Trainers and Group Fitness Instructors	86	191	(3)	(194)
11-9021	Construction Managers	231	188	(6)	(194)
11-3031	Financial Managers	252	183	(6)	(190)
13-1071	Human Resources Specialists	184	181	(5)	(186)
13-1111	Management Analysts	196	178	(5)	(183)
17-2141	Mechanical Engineers	241	170	(7)	(177)
13-1161	Market Research Analysts and Marketing Specialists	152	172	(4)	(176)
25-3021	Self-Enrichment Teachers	132	171	(4)	(174)
13-1028	Buyers and Purchasing Agents	181	167	(4)	(172)
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	161	151	(4)	(155)
47-2152	Plumbers, Pipefitters, and Steamfitters	137	138	(3)	(142)
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	143	133	(3)	(137)
31-9091	Dental Assistants	96	133	(3)	(136)
29-2061	Licensed Practical and Licensed Vocational Nurses	141	126	(4)	(130)
11-9111	Medical and Health Services Managers	119	122	(4)	(125)
17-2112	Industrial Engineers	158	114	(4)	(118)
47-2073	Operating Engineers and Other Construction Equipment Operators	102	105	(2)	(108)
15-1232	Computer User Support Specialists	135	100	(3)	(104)
11-2022	Sales Managers	115	100	(3)	(103)
Total		13,168	12,098	(335)	(12,433)

Source: Emsi and Camoin Associates

Top Occupations with the Largest Projected Employment Gaps in the Seacoast CEDR, 2022–2032

SOC	Description	2022 Employment	2022–2032 Openings	2022–2032 Labor Force	Projected Gap
11-1021	General and Operations Managers	4,015	3,678	171	(3,507)
53-3032	Heavy and Tractor-Trailer Truck Drivers	2,849	3,326	119	(3,208)
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	2,787	2,736	132	(2,604)
41-1011	First-Line Supervisors of Retail Sales Workers	2,622	2,664	97	(2,567)
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	2,119	2,255	90	(2,165)
43-1011	First-Line Supervisors of Office and Administrative Support Workers	2,238	2,159	86	(2,073)
29-1141	Registered Nurses	3,388	2,008	142	(1,865)
39-9031	Exercise Trainers and Group Fitness Instructors	687	1,781	45	(1,736)
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	1,435	1,775	61	(1,714)
13-2011	Accountants and Auditors	1,817	1,749	77	(1,672)
49-9071	Maintenance and Repair Workers, General	1,537	1,565	64	(1,501)
47-2031	Carpenters	1,668	1,563	65	(1,498)
13-1111	Management Analysts	1,252	1,264	53	(1,210)
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	1,090	1,241	39	(1,201)
13-1198	Project Management Specialists and Business Operations Specialists, All Other	1,349	1,135	58	(1,077)
47-2111	Electricians	1,010	1,118	42	(1,076)
11-9198	Personal Service Managers, All Other; Entmt. and Rec. Managers; and Managers, All Other	1,321	1,131	58	(1,073)
51-1011	First-Line Supervisors of Production and Operating Workers	1,002	1,041	42	(999)
11-3031	Financial Managers	1,215	1,043	54	(989)
13-1161	Market Research Analysts and Marketing Specialists	829	997	38	(959)
51-9161	Computer Numerically Controlled Tool Operators	799	946	34	(912)
25-3021	Self-Enrichment Teachers	608	920	30	(890)
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	908	915	37	(879)
13-1071	Human Resources Specialists	856	872	36	(837)
47-2152	Plumbers, Pipefitters, and Steamfitters	756	842	32	(810)
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	827	833	34	(798)
15-1232	Computer User Support Specialists	984	821	42	(778)
49-9041	Industrial Machinery Mechanics	719	782	33	(748)
11-3021	Computer and Information Systems Managers	930	766	39	(726)
15-1211	Computer Systems Analysts	940	745	40	(705)
11-9021	Construction Managers	792	679	35	(644)
31-9091	Dental Assistants	463	625	21	(604)
11-9051	Food Service Managers	422	617	21	(596)
13-1028	Buyers and Purchasing Agents	660	618	25	(593)
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	673	604	27	(577)
11-9111	Medical and Health Services Managers	568	601	27	(574)
47-2073	Operating Engineers and Other Construction Equipment Operators	495	541	20	(520)
Total		60,729	58,754	2,586	(56,168)

Source: Emsi and Camoin Associates



Appendix X: Data Sources and Terminology

Economic Modeling Specialists International (EMSI)

To analyze the industrial makeup of a study area, industry data organized by the North American Industrial Classification System (NAICS) is assessed. Camoin Associates subscribes to Economic Modeling Specialists Intl. (EMSI), a proprietary data provider that aggregates economic data from approximately 90 sources. EMSI industry data, in our experience, is more complete than most or perhaps all local data sources (for more information on EMSI, please see www.economicmodeling.com). This is because local data sources typically miss significant employment counts by industry because data on sole proprietorships and contractual employment (i.e. 1099 contractor positions) is not included and because certain employment counts are suppressed from BLS/BEA figures for confidentiality reasons when too few establishments exist within a single NAICS code.

WHY EMSI?



Comprehensive focus on long term impacts, while other tools focus on short term impacts only.



Uses data from a number of sources; unsuppresses data to allow for analytics on smaller regions.



Other tools allow you to make additional assumptions (such as where jobs or sales are coming from), but this only valuable if you know all of the details about a project.



Emsi uses detailed data and methodology documentation for those interested, but has a user friendly interface and results output.

OnTheMap, U.S. Census

OnTheMap is a tool developed through the U.S. Census Longitudinal Employer-Household Dynamics (LEHD) program that helps to visualize Local Employment Dynamics (LED) data about where workers are employed and where they live. There are also visual mapping capabilities for data on age, earnings, industry distributions, race, ethnicity, educational attainment, and sex. The OnTheMap tool can be found here, along with links to documentation: onthemap.ces.census.gov

American Community Survey (ACS), U.S. Census

The American Community Survey (ACS) is an ongoing statistical survey by the U.S. Census Bureau that gathers demographic and socioeconomic information on age, sex, race, family and relationships, income and benefits, health insurance, education, veteran status, disabilities, commute patterns, and other topics. The survey is mandatory to fill out, but the survey is only sent to a small sample of the population on a rotating basis. The survey is crucial to major planning decisions, like vital services and infrastructure investments, made by municipalities and cities. The questions on the ACS are different than those asked on the decennial census and provide ongoing demographic updates of the nation down to the block group level. For more information on the ACS, visit www.census.gov/programs-surveys/acs

Local Area Unemployment Statistics (LAUS), U.S. Bureau of Labor Statistics (BLS)

The Local Area Unemployment Statistics (LAUS) program estimates total employment and unemployment for approximately 7,500 geographic areas on a monthly basis, from the national level down to the city and town level. LAUS data is developed through U.S. Bureau of Labor Statistics (BLS) by combining data from the Current Population Survey (CPS), Current Employment Statistics (CES) survey, and state unemployment (UI) systems. More information on LAUS can be found here: www.bls.gov/lau/lauov.htm

Annual Replacement Rate

The percent of the occupation estimated to be retiring or otherwise permanently leaving an occupation

Cohort

A specific age group (which may also include gender or race/ethnicity) in demographic data, e.g., “male African Americans born between 1980 and 1984.” Over time, this cohort will move through various standard Census age categories such as “25 to 29 year olds” and “30 to 34 year olds.”

Compatibility Index

This number is intended to score the compatibility of two occupations in terms of the knowledge, skills, and abilities they require: a score of 100 means complete compatibility, while a score of 0 means no compatibility. The compatibility index is a synthetic number generated by a proprietary algorithm that uses O*NET’s data on the required [Levels](#) and [Importance](#) of competencies.

Competitive Effect

Competitive effect indicates how much of the job change within a given region is the result of some unique competitive advantage of the region. This is because the competitive effect, by definition, measures the job change that occurs within a regional industry that cannot be explained by broader trends (i.e. the [National Growth Effect](#) and the [Industrial Mix Effect](#)). To measure competitive effect, we subtract [Expected Change](#) from the actual regional job change in the industry of interest. $Actual\ Change - Expected\ Change = Competitive\ Effect$. It’s important to note that this effect can be positive even if regional employment is declining. This would indicate that regional employment is declining *less* than national employment. See [this article](#) for more.

Completions

The number of degrees or certificates conferred for a specific course of study in a given year. Includes all award levels. May be greater than the actual number of students who graduated, as Emsi includes both primary and secondary majors. Both primary and secondary majors are included because a graduate with a dual major in mathematics and electrical engineering should be considered part of the potential supply for occupations that map to both majors. The reference period for a completion year is July 1 of the prior year through June 30 of the current year. For example, the 2017 Completions metric is a count of completions from 7/1/2016–6/30/2017.

Cost of Living (CoL)

The cost of living is an indication of the amount of money needed to live in a given region, including the price of food, taxes, housing, etc., and is linked to the wage level in that region.

Cost-of-Living-Adjusted Earnings

Emsi's industry or occupation earnings, adjusted by the C2ER [Cost of Living Index](#). The Cost of Living index is 100-based, with an index above 100 indicating that the cost of living is higher than average in the region of study. Likewise, an index below 100 indicates that the cost of living is lower than average in the region of study. To create COL-adjusted earnings, we divide earnings by the index, then multiply the result by 100. For more information about how Cost of Living is calculated, [click here](#).

Educational Attainment (SOC)

SOC Educational Attainment is a breakdown of the education levels attained by the occupation's workforce. The Educational Attainment breakout is only provided for the nation as a whole. Source: The Bureau of Labor Statistics' (BLS) [Educational Attainment for workers 25 years and older by detailed occupation](#)

Establishments (Payrolled Business Location)

Also referred to as a "Payrolled Business Location", an establishment is a single physical location of some type of economic activity (a business), used for reporting purposes in government data sources. A single company may have multiple establishments. Source: QCEW.

Gross Regional Product (GRP)

Gross Regional Product (GRP) is simply GDP for the region of study. More commonly, GRP is GDP for any region smaller than the United States, such as a state or metro. GRP measures the final market value of all goods and services produced in the region of study. GRP is the sum of total industry earnings, taxes on production & imports, and profits, less subsidies (GRP = [earnings](#) + [TPI](#) + [profits](#) – subsidies). Source: Emsi data based primarily on data from the [Bureau of Economic Analysis \(BEA\)](#) and the [Quarterly Census of Employment and Wages \(QCEW\)](#) from the Bureau of Labor Statistics (BLS).

Hires

The number of hires for the selected timeframe. When compared with Unique Postings, Hires shows how much actual hiring activity there is relative to the amount of posting activity. A hire is reported by the Quarterly Workforce Indicators when an individual's Social Security Number appears on a company's payroll and was not there the quarter before. The QWI program produces a comprehensive tabulation of employment and wage information for workers covered by State unemployment insurance (UI) laws, similar to the QCEW program. For more information from the Census Bureau on how hires data is collected, see [this publication](#). For more information on how Emsi calculates hires for occupations, see the [methodology article](#).

Location Quotient (LQ)

Location quotient (LQ) is a way of quantifying how concentrated a particular industry, cluster, occupation, or demographic group is in a region as compared to the nation. It can reveal what makes a particular region “unique.” For example, if the leather products manufacturing industry accounts for 10% of jobs in your area but 1% of jobs nationally, then the area’s leather-producing industry has an LQ of 10. So, in your area, leather manufacturing accounts for a larger than average “share” of total jobs—the share is ten times larger than normal. For a long-form explanation of Location Quotient, see Emsi’s [blog post](#) on the subject. Source: Emsi’s proprietary employment data.

Median Household Income (MHI)

Median household income (MHI) refers to the distribution of household income into two equal groups, one having incomes above the median, and other having incomes below the median. A household is defined as persons classified as members of a married-couple family, other family type, or as an unrelated individual. Their monthly family income, therefore, represents the sum of all cash income received by the individual and/or other family members. It may represent income from employment, assets (such as CD’s, rental property, savings accounts), and other sources (such as Social Security, Aid to Families with Dependent Children, pensions, State unemployment compensation, and so on). Emsi’s Median Household Income comes from the five-year ACS data and includes data for individual ZIP codes, Census Tracts, counties, MSAs, States, and the nation. Emsi does not provide MHI when aggregating regions, since one cannot create a new median by averaging the medians of those individual regions. ACS five-year data has a two-year lag between when the data is collected and when it is released (i.e. a late 2017 Emsi data run would include 2011-2015 ACS data). Source: The Census’s [Median Household Income](#)

Net Commuters

The minimum number of workers who commute in or out of the region to satisfy the regional numbers of jobs held. A positive number describes commuters entering a region, while a negative number describes commuters leaving a region. Source: Emsi calculates this number by subtracting the Resident Workers from Jobs performed in the selected region.

Openings

A combination of both new jobs and [replacement jobs](#) constitutes total openings. The annual openings figure is derived by dividing total openings by the number of years in the user’s selected timeframe. For example, an occupation showing 130 openings between 2016 and 2026 would result in an annual openings figure of 13. For more information on how Openings is calculated, see [this article](#).

Posting Intensity

Posting Intensity is the ratio of total to unique (deduplicated) job postings. A higher-than-average posting intensity can mean that employers are putting more effort than normal into hiring that position. Posting intensity is available by occupation, by job title, by company, and by region.

Replacement Jobs

Estimate of opening resulting from workers retiring or otherwise permanently leaving an occupation

Resident Workers

Individuals that live in the region and hold the occupation but may work outside of the region.

Separations

A separation is indicated when a job is present in one quarter but is not present in the following quarter. A separation is reported by the Quarterly Workforce Indicators when an individual's Social Security Number that appeared on a company's payroll in the previous quarter is no longer present. Separations data is published at the industry level and modeled to occupation via [staffing patterns](#). The QWI program produces a comprehensive tabulation of employment and wage information for workers covered by State unemployment insurance (UI) laws, similar to the QCEW program. For more information, see [this publication](#).

Staffing Pattern

Staffing patterns show the occupational makeup of an industry in percentages. For example, a (simplified) staffing pattern for the industry "Hospitals" might show that 10% of jobs in the hospitals industry are occupied by surgeons, 15% by general practitioners, 20% by nurses, 5% by information technology support staff, 5% by janitors, 1% by chief executives, and so on. See also [Inverse Staffing Pattern](#). Source: Primarily the national OES staffing pattern, combined with projections from the [National Industry-Occupation Employment Matrix](#) and Emsi's proprietary employment data.

Unique Job Postings

Unique Job Postings is the number of deduplicated job vacancy advertisements scraped from over 45,000 websites. [Deduplication](#) is the process of identifying duplicate job postings and only counting one of the duplicates. The unique posting count is the count of postings after the deduplication process has taken place. The [total posting count](#) is the count of postings before deduplication. For example, if a user runs a report that returns 12 total job postings and 2 unique job postings, this means that the 12 postings contained 10 duplicates and only 2 unique job advertisements.

About Camoin Associates

Camoin Associates has provided economic development consulting services to municipalities, economic development agencies, and private enterprises since 1999. Through the services offered, Camoin Associates has had the opportunity to serve EDOs and local and state governments from Maine to California; corporations and organizations that include Lowes Home Improvement, FedEx, Amazon, Volvo (Nova Bus) and the New York Islanders; as well as private developers proposing projects in excess of \$6 billion. We have completed over 1,500 projects in 45 states plus the Virgin Islands. Our reputation for detailed, place-specific, and accurate analysis has garnered attention from national media outlets including *Marketplace* (NPR), *Forbes* magazine, *The New York Times* and *The Wall Street Journal*. Additionally, our marketing strategies have helped our clients gain both national and local media coverage for their projects in order to build public support and leverage additional funding. To learn more about our experience and projects in all of our service lines, please visit our website at www.camoinassociates.com. You can also find us on Twitter [@camoinassociate](https://twitter.com/camoinassociate) and on [Facebook](https://www.facebook.com/camoinassociates).

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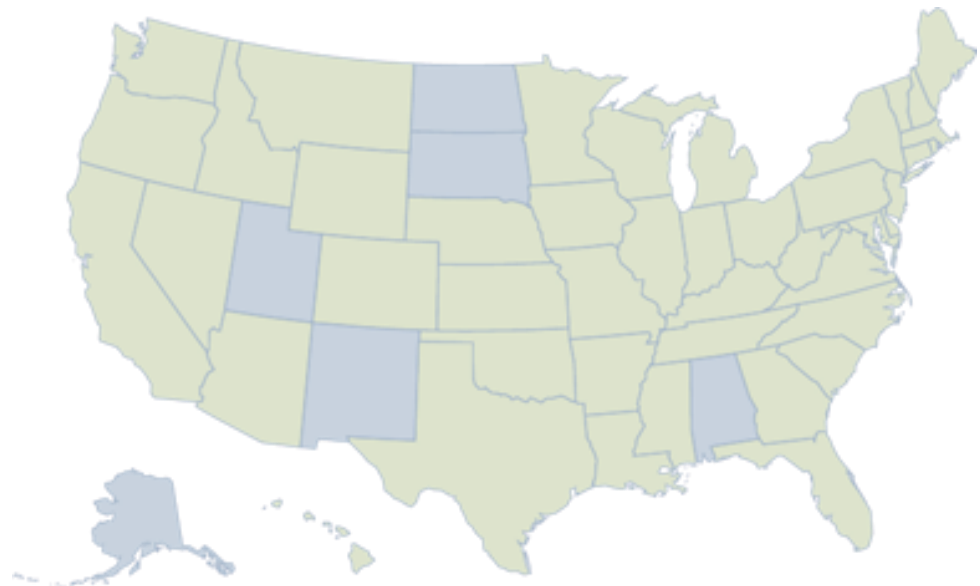
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