

LABOR MARKET ANALYSIS

FOR PROGRAM RECOMMENDATION



C·O·E

CENTERS OF EXCELLENCE
FOR LABOR MARKET RESEARCH

RADIOLOGY/ULTRASONOGRAPHY TECHNICIAN

IN THE FAR NORTH

Far North
Center of Excellence

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SUMMARY

The Far North Center of Excellence for Labor Market Research prepared this report to provide a labor market analysis of educational supply and occupational demand for middle-skilled careers in the Far North subregion. This report aims to determine if demand in the local labor market is unmet by the supply from existing community college programs and other postsecondary training providers.

This report primarily focuses on training that leads to jobs in middle-skilled occupations - jobs that typically require education beyond a high school diploma but less than a Bachelor's degree. Lowered skilled occupations are rarely considered in this analysis due to the lessened barriers for entry-level work, such as no formal education and few on-the-job training requirements.

Key findings include:

- The Far North held 720 radiology/ultrasonography jobs in 2021. Radiology/Ultrasonography jobs are projected to increase by 8% over the next five years, adding 58 new jobs to the subregion by 2026.
- Over the next five years, radiology/ultrasonography jobs are projected to have 55 annual openings in the Far North subregion.
- Wage data shows that all three occupations have entry-level wages \$22 to \$28 above the subregion's living wage of \$12.74 per hour.
- No community colleges or other postsecondary training providers conferred awards in related programs in the Far North over the past three academic years.

Recommendations include:

- The Far North Center of Excellence recommends moving forward with developing a new program in radiology/ultrasonography.

INTRODUCTION

The Far North Center of Excellence (COE) was asked to provide labor market information for a proposed program at a regional community college. This report focuses on the following Standard Occupational Classification (SOC) occupations and codes:

These middle-skill occupations require more education and training beyond a high school diploma but less than a four-year degree:

- Diagnostic Medical Sonographers (29-2032)
- Radiologic Technologists and Technicians (29-2034)
- Magnetic Resonance Imaging Technologists (29-2035)

A review of related programs revealed the following Taxonomy of Programs (TOP) title(s) and code(s) are appropriate for inclusion in this report:

- Radiologic Technology (1225.00)

The corresponding Classification of Instructional Program (CIP) title(s) and code(s) are:

- Medical Radiologic Technology/Science – Radiation Therapist (51.0907)
- Radiologic Technology/Science – Radiographer (51.0911)

OCCUPATIONAL DEMAND

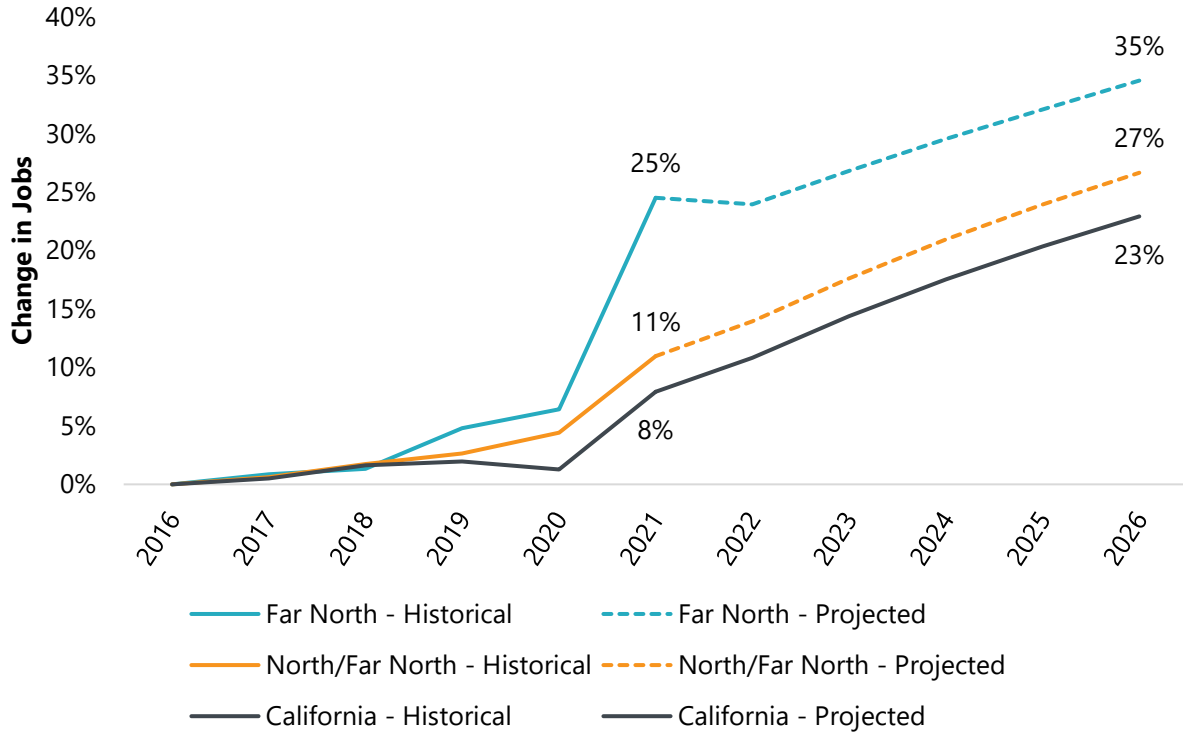
Exhibit 1 summarizes the five-year projected job growth for middle-skill occupations in the Far North, North/Far North, and California.

Exhibit 1. Employment and projected demand, 2021-2026

Occupation	2021 Jobs	2026 Jobs	2021-2026 Change	2021-2026 % Change	2021-2026 Annual Openings
Diagnostic Medical Sonographers	199	217	18	9%	16
Radiologic Technologists and Technicians	458	492	34	7%	34
Magnetic Resonance Imaging Technologists	63	69	6	10%	5
Far North	720	778	58	8%	55
Diagnostic Medical Sonographers	786	898	112	14%	70
Radiologic Technologists and Technicians	1,763	2,006	243	14%	153
Magnetic Resonance Imaging Technologists	219	256	36	17%	22
North/Far North	2,768	3,160	391	14%	246
Diagnostic Medical Sonographers	8,235	9,454	1,219	15%	726
Radiologic Technologists and Technicians	19,174	21,687	2,513	13%	1,613
Magnetic Resonance Imaging Technologists	2,796	3,263	467	17%	275
California	30,205	34,405	4,199	14%	2,614

Exhibit 2 compares the percent change in jobs between 2016 through 2021 and the projected changes through 2026. The rate of change is indexed to the total number of jobs in 2016.

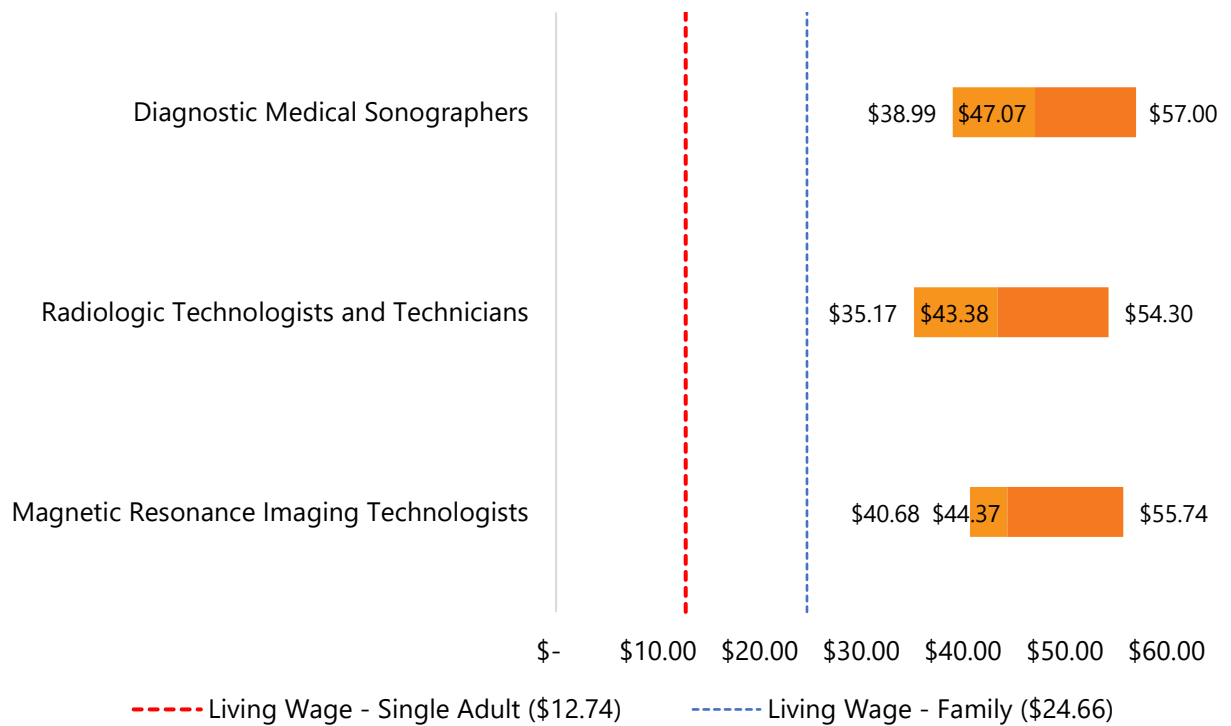
Exhibit 2. Changes in employment, 2016-2026



WAGES

Exhibit 3 compares the entry-level, median, and experienced wages for the selected occupations to the Far North living wage for a single adult (\$12.74 per hour) and a small family (\$24.66 per hour).^{1,2}

Exhibit 3. Comparison of wages by occupation, 2021



¹ Living wage is defined as the level of income a single adult with no children must earn to meet basic needs, including food, housing, transportation, healthcare, taxes, and other miscellaneous basic needs. Please note that the 25th-percentile and 75th-percentile hourly wages are used as proxy for entry-level and experienced-level wages.

² A small family is defined as a single adult and one school aged child (between the ages of 5 and 12 years).

JOB POSTINGS

This section analyzes recent data from online job postings (real-time LMI). Online job postings may provide additional insight into recent changes in the labor market that are not captured by historical trends.

The Far North COE identified 736 online job postings for the selected occupations in the 15-county Far North subregion. Job posting data comes from Lightcast (formerly EMSI Burning Glass Labor Insights) and represents unique listings posted online within the last year, from June 1, 2022, to May 31, 2023.

Occupations and Job Titles

Exhibit 4 details the number of online job postings for the selected occupations.

Exhibit 4. Number of job postings by occupation

Occupation	Job Postings	Share of Job Postings
Radiologic Technologists and Technicians	361	49%
Magnetic Resonance Imaging Technologists	266	36%
Diagnostic Medical Sonographers	109	15%
Total Job Postings	736	100%

Exhibit 5 shows the top 10 relevant job titles with the most job postings.

Exhibit 5. Top jobs titles

Job Title	Job Postings	Share of Job Postings
Radiology/Radiologic Technologists	109	15%
Lead CT Technologists	78	11%
Computed Tomography Technologists	69	9%
Travel Interventional Radiology Technologists	48	7%
Ultrasound Technologists	32	4%
Travel Technicians	32	4%
Travel X-Ray Techs	28	4%

Job Title	Job Postings	Share of Job Postings
Radiology Technicians	27	4%
MRI Technologists	26	4%
Travel Ultrasound Technologists	26	4%

Employers

Exhibit 6 shows the top 10 relevant employers with the most job postings for the selected occupations. Of the 736 postings, only 468 listed an employer.

Exhibit 6. Employers with the most job postings

Employer	Job Postings	Share of Job Postings
Asante	67	14%
Providence	60	13%
Adventist Health	52	11%
Sutter Health	45	10%
Oroville Hospital	27	6%
Enloe Medical Center	24	5%
MedUS Healthcare	22	5%
Prime Healthcare Services	17	4%
Magnet Medical	12	3%
Banner Health	11	2%

Certifications, Skills, and Experience

Exhibit 7 shows the most relevant certifications requested by employers for the selected occupations.

Exhibit 7. Most in-demand certifications

Certification	Job Postings
Basic Life Support (BLS)	257
American Registry of Radiologic Technologists (ARRT)	197
Certified Radiologic Technologist/Technician	91
Cardiopulmonary Resuscitation (CPR)	76
American Registry for Diagnostic Medical Sonography (ARDMS)	62

Exhibit 8 shows the top skills across three categories for the studied occupations: specialized, essential, and software skills.³

Exhibit 8. Most in-demand skills

Top Specialized Skills	Top Essential Skills	Top Software Skills
Radiology/Radiography	Communications	Epic EMR
X-Ray Computed Tomography	Prioritization	Microsoft Office
Medical Ultrasonography	Scheduling	Software Systems
Fluoroscopy	Customer Service	
Medical Imaging	Quality Control	
Medical Records	Critical Thinking	
Pathology	Problem Solving	
Anatomy	Organizational Skills	

³ Specialized skills are those primarily required to perform specific tasks in an occupation. Essential skills are typically related to employability. These are skills that are prevalent across many occupations, and include both interpersonal attributes and learned skills (aka "soft skills"). Software skills are specific to any software tool or programming component used to support a job.

Top Specialized Skills	Top Essential Skills	Top Software Skills
Magnetic Resonance Imaging	Detail Oriented	
Radiation Protection	Cooperation	

Exhibit 9 shows the minimum level of education requirements for related job postings in the Far North subregion.⁴

Exhibit 9. Employer-preferred job candidate education levels

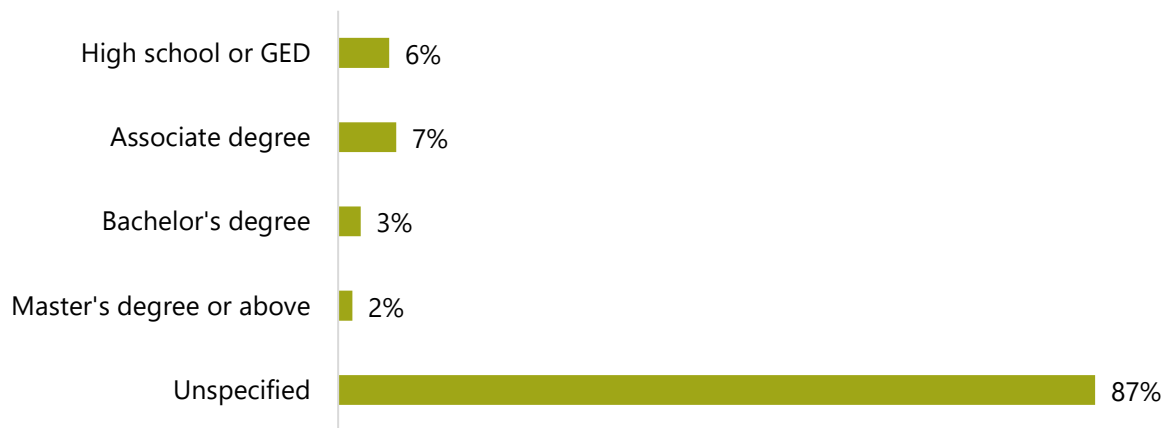
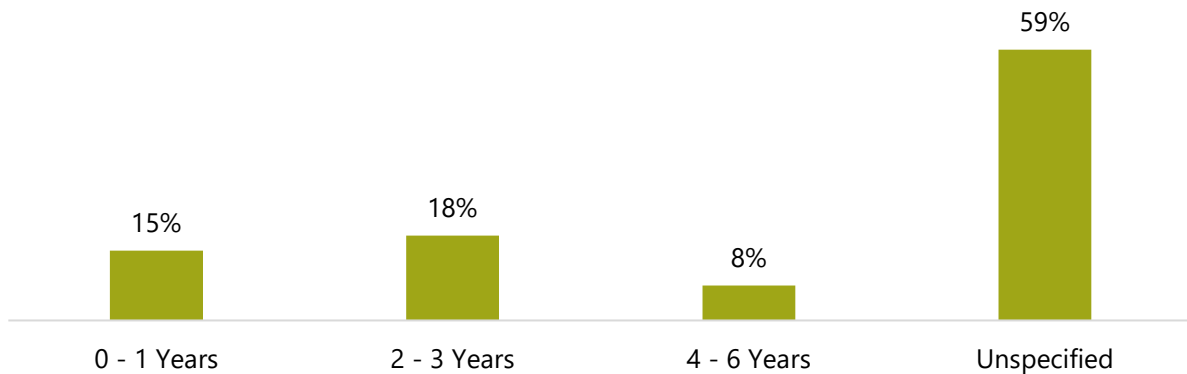


Exhibit 10 shows the experience levels required by employers for job postings for the selected occupations.⁵

Exhibit 10. Employer-preferred job candidate experience levels



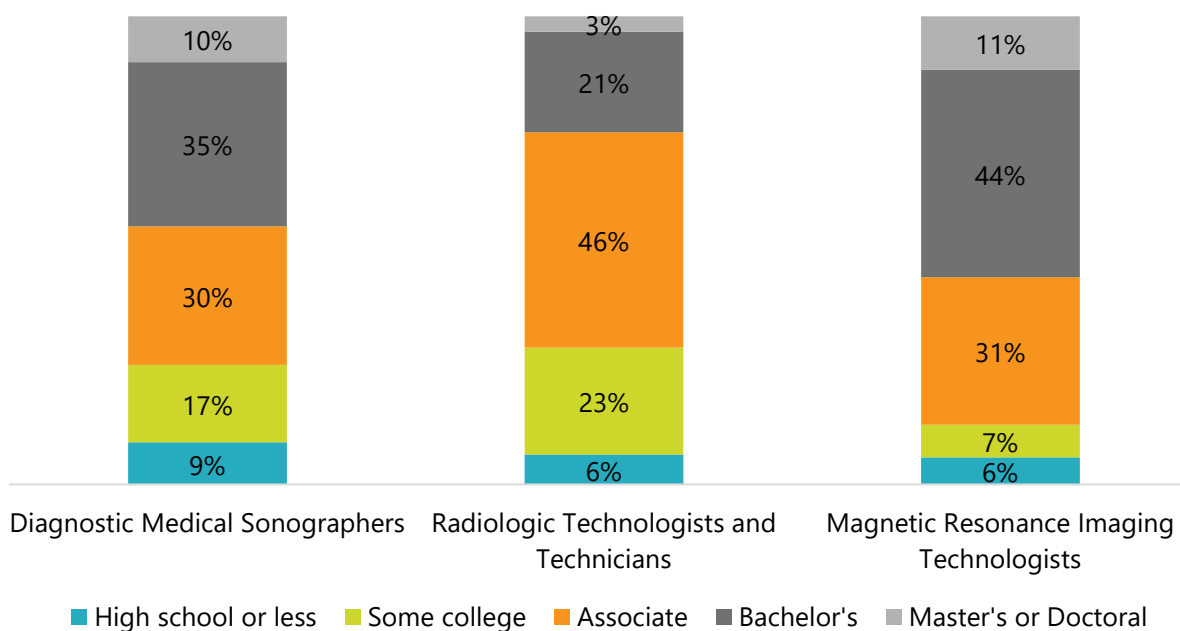
⁴ Employers may include more than one level of education as a hiring requirement in a job posting. As a result, the values in exhibit 9 may sum to greater than 100%.

⁵ Employers may include more than one level of experience as a hiring requirement in a job posting. As a result, the values in exhibit 10 may sum to greater than 100%.

EDUCATION AND TRAINING

The U.S. Census Bureau collects data on the highest level of education achieved by workers employed across all occupations. Exhibit 11 shows California's educational attainment of the current workforce in the selected occupations.

Exhibit 11. California's educational attainment for selected occupations, 2019



The U.S. Bureau of Labor Statistics (BLS) uses a categorical system to assign typical entry-level education and job requirements to each occupation for which the BLS publishes projection data. These categories include entry-level education, work experience in a related occupation, and on-the-job training. Exhibit 12 shows the selected occupations' typical entry-level education and job requirements.

Exhibit 12. Typical entry-level education and job requirements

Occupation	Typical Entry-level Education	Work Experience Required	On-the-job Training Required
Diagnostic Medical Sonographers	Associate Degree	None	None
Radiologic Technologists and Technicians	Associate Degree	None	None
Magnetic Resonance Imaging Technologists	Associate Degree	Less than 5 years	None

EDUCATIONAL SUPPLY

Educational supply for an occupation can be estimated by analyzing the number of awards issued in related Taxonomy of Programs (TOP) or Classification of Instructional Programs (CIP) codes. Exhibit 13 shows the TOP and CIP codes for educational programs related to the selected occupations.

Exhibit 13. TOP and CIP codes for training programs related to the selected occupations

TOP Programs and Codes	Aligned CIP Programs and Codes
Radiologic Technology (1225.00)	Medical Radiologic Technology/Science – Radiation Therapist (51.0907)
	Radiologic Technology/Science – Radiographer (51.0911)

Community College Supply

Over the past three academic years, no community college in the Far North subregion has conferred any awards in Radiologic Technology (1225.00).

Other Postsecondary Supply

No other postsecondary training providers conferred awards in related programs in the Far North over the past three academic years. Please note that non-community college data typically lags by one year.

FINDINGS

- This report focuses on three radiology/ultrasonography occupations: Diagnostic Medical Sonographers (29-2032); Radiologic Technologists and Technicians (29-2034); and Magnetic Resonance Imaging Technologists (29-2035).
- The Far North subregion held 720 radiology/ultrasonography jobs in 2021. These jobs are projected to increase by 8% over the next five years, adding 58 new jobs to the subregion by 2026.
- Jobs for radiology/ultrasonography are projected to grow slower in the Far North subregion than in California (8% in the subregion vs 14% in the State).
- Over the next five years, radiology/ultrasonography jobs are projected to have 55 annual openings across the Far North.
- Wage data shows that all three occupations have wages \$22 to \$28 above the subregion's living wage of \$12.74 per hour.
- According to real-time labor market information, there were 736 online job postings related to the three radiology/ultrasonography occupations studied in this report. Data represents unique listings posted online within the last year, from June 1, 2022, to May 31, 2023.
- Between 38% and 69% of incumbent workers in the studied occupations have educational attainment levels consistent with community college offerings (some college or associate degrees). Another 21% to 44% of workers in these occupations hold a bachelor's degree.

RECOMMENDATIONS

- Based on projected yearly openings and zero conferred awards in the Far North subregion, there seems to be an undersupply between educational supply and occupational demand.
 - Neither community colleges or other postsecondary training providers issued awards over the past three years.
 - There are 55 projected annual openings for radiology/ultrasonography jobs.
- The Far North Center of Excellence recommends moving forward with developing a new program in radiology/ultrasonography.

New Program Recommendation		
Move forward with the new program	Proceed with caution	A new program is not recommended
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

APPENDIX A. METHODOLOGY AND SOURCES

This report identified Occupations using the Center of Excellence TOP-to-CIP-to-SOC crosswalk and O*Net OnLine. This report's findings were determined using labor market data from the Bureau of Labor Statistics (BLS), U.S. Census Bureau data from Emsi, and jobs posting data from Burning Glass.

Lightcast (Formerly EMSI/Burning Glass) 2022.3; QCEW Employees, Non-QCEW Employees, and Self-Employed. <https://www.economicmodeling.com/>. *Note: EMSI occupational employment data are based on final EMSI industry data and final EMSI staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors).*

Integrated Postsecondary Education Data System (IPEDS). National Center for Education Statistics. U.S. Department of Education. <https://nces.ed.gov/ipeds/>.

Labor Market Information Division. California Employment Development Department. <https://labormarketinfo.edd.ca.gov/>.

Management Information Systems (MIS) Data Mart. California Community Colleges Chancellor's Office. <https://datamart.cccco.edu/>.

O*NET OnLine. U.S. Department of Labor/Employment and Training Administration (DOL ETA). <https://www.onetonline.org/>.

Public Use Microdata Sample (PUMS). U.S. Census Bureau American Community Survey (ACS). <https://www.census.gov/programs-surveys/acs/microdata.html>

Self-Sufficiency Standard Tool for California. The University of Washington. <http://www.selfsufficiencystandard.org/>

"Taxonomy of Programs." California Community Colleges Chancellor's Office. June 2012, 6th Edition. <https://www.cccco.edu/-/media/CCCCO-Website/About-Us/Divisions/Educational-Services-and-Support/Academic-Affairs/What-we-do/Curriculum-and-Instruction-Unit/Files/TOPmanual6200909corrected12513pdf.ashx>

"TOP-CIP-SOC Crosswalk." Centers of Excellence for Labor Market Research. June 2021 Edition. <http://coecc.net/>

COVID-19 Statement: This report includes employment projection data produced by Lightcast (formerly EMSI). Employment projections are developed using models based on historical data, which in this set of projections covers the period through 2021. Most input data, therefore, precedes the pandemic. Employment projections are long-term projections intended to capture structural changes in the economy, not cyclical fluctuations. As such, projections data are not intended to capture the impacts of the recession that began in February 2020. Cyclical fluctuations, like recessions, impact projects when they become part of the historical data set.

Important Disclaimer: All representations included in this report have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. Efforts have been made to qualify and validate the accuracy of the data and the reported findings; however, neither the Centers of Excellence, COE host District, nor California Community Colleges Chancellor's Office are responsible for applications or decisions made by recipient community colleges or their representatives based upon components or recommendations contained in this study.

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