



COE

**CENTERS OF EXCELLENCE
FOR LABOR MARKET RESEARCH**



Labor Market, Enrollment, Awards, and Outcomes Data

For the North Far North
2022–2024 Vision for Success
Strategic Plan

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Prepared by Center of Excellence
North/Far North Region

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INTRODUCTION AND METHODOLOGY



In this accompaniment to the Strong Workforce Program Strategic Plan, the Centers of Excellence for the North Far North region provide a comprehensive review of the region's labor market and Career Technical Education (CTE) programs, focusing on 11 priority industry sectors. The report includes an overview of the North Far North's baseline labor market information and a community profile.

The report reviews industrial employment and includes an occupational analysis. The report examines student data and compares awards to projected middle-skill openings to provide background on the scale of need for CTE program investment. Appendices provide a summary of key data points and highlight priority middle-skill occupations.

Finally, the report presents a demographic profile and other student information from the LaunchBoard and an analysis of employment and wage outcomes data. The outcomes data include a demographic assessment to highlight disproportionate impacts.

SUMMARY OF FINDINGS

The research and data analysis resulted in the following key findings:

On multiple labor market measures, the North Far North region outpaces California.

Since 2017, the population of the North Far North region has increased by 3%, while that of California has declined slightly. Both the region and the state significantly reduced unemployment after the shock of the pandemic, but the unemployment rate of the North Far North region has consistently been slightly below that of the state. The labor force levels of the region have nearly returned to pre-pandemic levels, whereas those of the state are barely at the levels of October 2017. The region has slightly higher poverty levels and slightly lower levels of educational attainment than those of the state.

The North Far North region possesses a wealth of employment across numerous key priority sectors, which proved resilient to the shock of the pandemic.

Of the 11 priority sectors, only 3 reduced employment between 2016 and 2021. Of these, only one, Information and Communication Technologies/Digital Media, reduced its employment by more than 2%. Energy, Construction, and Utilities grew by 24% (28,737 jobs). There were double-digit historical growth rates in Advanced Transportation and Logistics, Education and Human Development, and Life Sciences and Biotechnology.

The North Far North region, and its subregions, are notable for outsized shares of employment and projected growth in several key industry sectors.

The Far North subregion is notable for having larger shares of employment in Agriculture, Water, and Environmental Technology than the North. The Far North subregion has a higher share of employment in Advanced Manufacturing than the North. Both these sectors are projected to grow by 8% in the North and by 6% in the Far North through 2026. Life Sciences and Biotechnology merits additional attention in the North subregion due to its historical and projected growth. Energy, Construction, and Utilities grew by 24% between 2016 and 201, and it is projected to grow by 17% through 2026. For Education and Human Development, the figures are 14% historical growth and a 9% projected increase through 2026. Other sectors with historical and projected growth to note are Advanced Transportation and Health.

The pandemic hit a few sectors hard. The Far North subregion often did not experience the same level of growth as the North subregion in some priority sectors.

The pandemic hit Information and Communications Technology/Digital Media harder than any other sector except Retail, Hospitality, and Tourism. The Far North has 14% fewer jobs in the sector than it did in 2016. In the North, the sector lost 6% of its employment and is projected to grow only 1% over the next five years. Public Safety and Government is another concerning industry sector, especially in the Far North, where it lost 6% of its jobs between 2016 and 2021. In multiple sectors, historical growth indicates that the Far North had slower growth than the North and California. These sectors include Advanced Transportation and Logistics; Business and Entrepreneurship; Education and Human Development; Energy, Construction, and Utilities; Health; Public Safety; and Government.

More than 200,000 annual openings are projected by 2026 in the North Far North region—41% of these openings will be in middle-skill occupations.

By 2026, the analysis projects 201,822 annual openings in the 11 priority sectors. Middle-skill occupations will account for 41% of these projected openings. Every priority sector will have from hundreds to thousands of middle-skill openings annually. Business and Entrepreneurship is projected to have 23,799 middle-skill openings; Health, 23,602; Advanced Transportation, 6,950; Retail, Hospitality, and Tourism, 4,555; and Public Safety, 4,037. Even Life Sciences and Biotechnology, the sector with the fewest number of jobs, is projected to have 675 middle-skill openings annually.

The North Far North region experienced precipitous declines in enrollment in priority sector programs between the 2019–2020 and the 2020–2021 academic years.

Enrollment in priority sectors declined by 15% (15,428 students) in the North Far North region between the 2019–2020 and the 2020–2021 academic years. In the 2019–2020 academic year, there were 105,899 enrollments in all CTE programs in the North Far North region. Enrollments declined to 87,767 in the 2020–2021 academic year. The reductions hit Energy, Construction, and Utilities; Advanced Transportation and Logistics; Advanced Manufacturing; and Retail, Hospitality, and Tourism particularly hard. Programs in these sectors saw 20% to 55% reductions in enrollments.



Awards trends indicate that programs proved more resilient to the shock of the pandemic than the enrollments data suggest.

In spite of significant reductions in enrollments, the North Far North region increased its award totals by 7% (699 awards) between 2019–2020 and 2021–2022. (Awards data reflect a more recent academic year than enrollments.) Of the 11 priority sectors, 7 increased awards over 2019–2020 academic year, including Education and Human Development; Health, Business and Entrepreneurship; and Public Safety. Several of these sectors—Business and Entrepreneurship, Health, Public Safety, and Education and Human Development—are among those that produce the most awards on average annually.

A comparison of projected middle-skill annual job openings and average awards indicates a gap of more than 70,000 awards in the 11 priority sectors in the North Far North region.

Together, Health and Business and Entrepreneurship account for a gap of more than 40,000 awards. Energy, Construction, and Utilities accounts for a gap of 8,335 awards. Several other sectors have large gaps: Advanced Transportation and Logistics (gap of 6,716 awards); Retail, Hospitality and Tourism (4,417 awards); Advanced Manufacturing (2,445 awards); and Education and Human Development (2,553 awards).



Two sectors have large shares of projected occupational openings and the smallest openings-to-awards gap: Information and Communications Technologies/Digital Media and Public Safety.

When measuring the share of projected annual openings covered by average annual awards, the gap is smallest for Information and Communications Technologies/Digital Media and for Public Safety. In the former, the number of awards is equivalent to 61% of the number of openings, leaving a gap of 693 awards, the smallest gap of all the sectors in terms of total numbers and share of annual openings. For public safety, the figure is 39% of annual openings, but the sector has a gap of 2,443 awards.

LaunchBoard Strong Workforce Program metrics also show a counterposing trend for decreasing enrollments and increasing awards in the North Far North region. Transfer rates also increased.

During the seven-year period measured, enrollments decreased by 18% in the community colleges in the North Far North region. The number of students earning nine or more career education units also decreased by 4%. On the other hand, students earning awards and attaining apprenticeship increased by 53%. The number of students transferring to a four-year institution also increased by 18%.

Students exiting Strong Workforce Program CTE programs make 28% more in annual earnings in the post-2013–2014 academic years than in the 2013–2014 academic year. Students are increasing their earnings, attaining a living wage, and getting jobs in their field of study at higher rates.

In the North Far North region, the number of students getting a job in their field of study increased by 11% during the academic years for which data were available. Median earnings for students exiting SWP CTE programs increased by 28%. The median change in earnings before and after exit increased by 11%. Finally, the number of students attaining a living wage increased by 12%.

The North Far North region's CTE students are majority female. Hispanic students make up nearly one-third of the region's CTE students.

LaunchBoard data indicate that a majority (54%) of CTE students are female. The largest race/ethnicity category is white (43% of CTE students). The largest nonwhite categories are Hispanic (27%), followed by Asian (9%) and African American (6%).

Student outcomes data on wage and employment outcomes for living wages reveal several demographic groups that merit further attention.

Students who identify as Black (54%) and American Indian/Native Alaskan (58%) attain the living wage less frequently than the average of 63% of students who exited CTE programs in the 2019–2020 academic year. Similarly, women, who attain the living wage at a 10% lower rate than men (57% of female students compared with 67% of male students), are also disproportionately impacted. The data on obtaining jobs in a related field also reveal disproportionate impacts for African Americans (69%). Latinos also have lower rates of job attainment in related fields of study: 69% of Latinos (Hispanics) get jobs in a related field of study compared with the average, 73%.

Student outcomes data on awards and transfers also reveal disproportionate impacts on some demographic groups.

When comparing student rates of awards attainment, the data show that just 6% of African American students earned an award in the 2020–2021 academic year, compared with the average of 9% for all student demographic groups. Transfer rates indicate that African American and American Indian/Native Alaskan students had 13% transfer rates in the 2019–2020 academic year, compared with 17% for all groups of students. Just 15% of male students transferred, compared with an average of 22% of females.



The research includes the following data analysis:

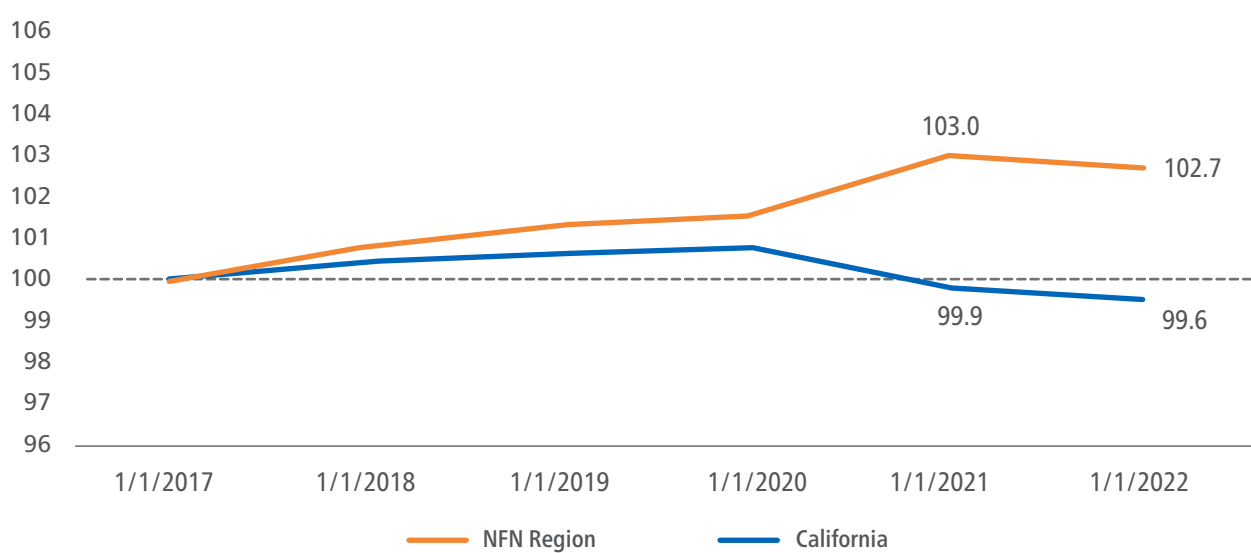
Report section	Data analysis
Regional Overview	<ul style="list-style-type: none"> • Population trends, North Far North region and California • Unemployment rate trends, North Far North region and California • Labor force trends, North Far North region and California • Poverty rate, North Far North region and California • Educational attainment, North Far North region and California
Industry Sector Analysis	<ul style="list-style-type: none"> • Industry sector employment and projections, North Far North region • Industry sector historical and projected change, North Far North region • Industry sector historical and projected change, North Far North region and California • Current industry sector employment, North and Far North subregions • Industry sector historical change, North and Far North subregions and California • Industry sector projected change, North and Far North subregions and California
Occupational Analysis	<ul style="list-style-type: none"> • Occupational employment, projected change, and projected annual openings • Current occupational employment by industry sector and skill level • Projected occupation annual openings by industry sector and skill level
Enrollments and Awards	<ul style="list-style-type: none"> • Current and historical enrollments change by industry sector • Three-year trends and average annual awards by industry sector
Comparison of Occupations with Awards and Enrollments	<ul style="list-style-type: none"> • Enrollments, middle-skill openings, average annual awards, and planned investment by industry sector, North Far North region • Gap analysis, projected annual openings and average annual awards, by industry sector
Strong Workforce Program Student Outcomes	<ul style="list-style-type: none"> • Strong Workforce Program student outcomes historical change, Northern Inland, Northern Coastal, and North
CTE Student Demographics	<ul style="list-style-type: none"> • CTE students by gender, North Far North region • CTE students by race/ethnicity, North Far North region
Student Outcomes by Gender and Race/Ethnicity	<ul style="list-style-type: none"> • Attained a living wage, by gender and race/ethnicity, North Far North region • Employed in related field of study, by gender and race/ethnicity, North Far North region • Earned awards, by gender and race/ethnicity, North Far North region • Transfer to university, by gender and race/ethnicity, North Far North region
Appendix A: Priority Sector Summary and Priority Middle-Skill Occupations	<ul style="list-style-type: none"> • Summary data on employment, openings, enrollments, awards • Priority middle-skill occupations
Appendix B	<ul style="list-style-type: none"> • Sources

The research includes an overview of the North Far North region, including trend data on population, unemployment, labor force, poverty rates, and educational attainment.

Population

Between January 2017 and January 2022, the population of the North Far North region increased by 96,794 (2.7%) (Exhibit 1 and Exhibit 2). The population of the North Far North region increased during 2020, but declined slightly during 2021. California’s population declined during the five-year period by 166,793 (0.4%).

Exhibit 1. Population trend, North Far North region and California, January 2017–January 2022 (indexed to January 2017)



Source: California Department of Finance, Demographic Research Unit, <https://dof.ca.gov/forecasting/demographics/>

Exhibit 2. Five-year population trend, North Far North region and California, January 2017–January 2022

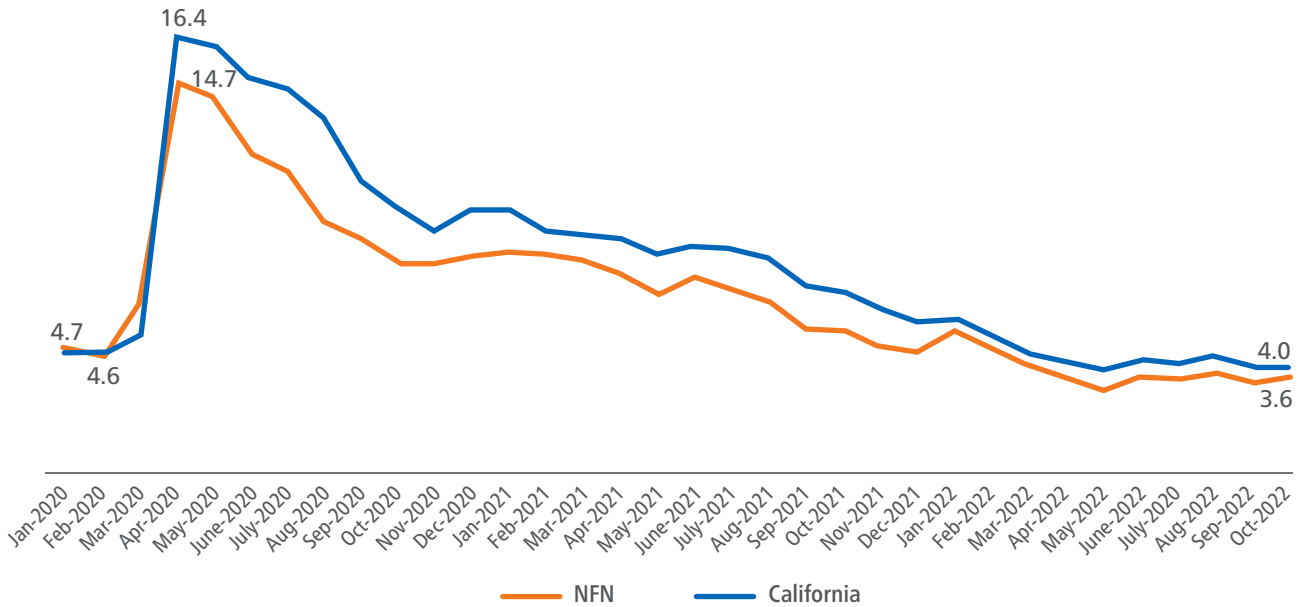
	2017	2018	2019	2020	2021	2022
NFN region	3,521,669	3,549,827	3,566,496	3,577,283	3,627,826	3,618,463
California	39,352,398	39,519,535	39,605,361	39,648,938	39,303,157	39,185,605

Source: California Department of Finance, Demographic Research Unit, <https://dof.ca.gov/forecasting/demographics/>

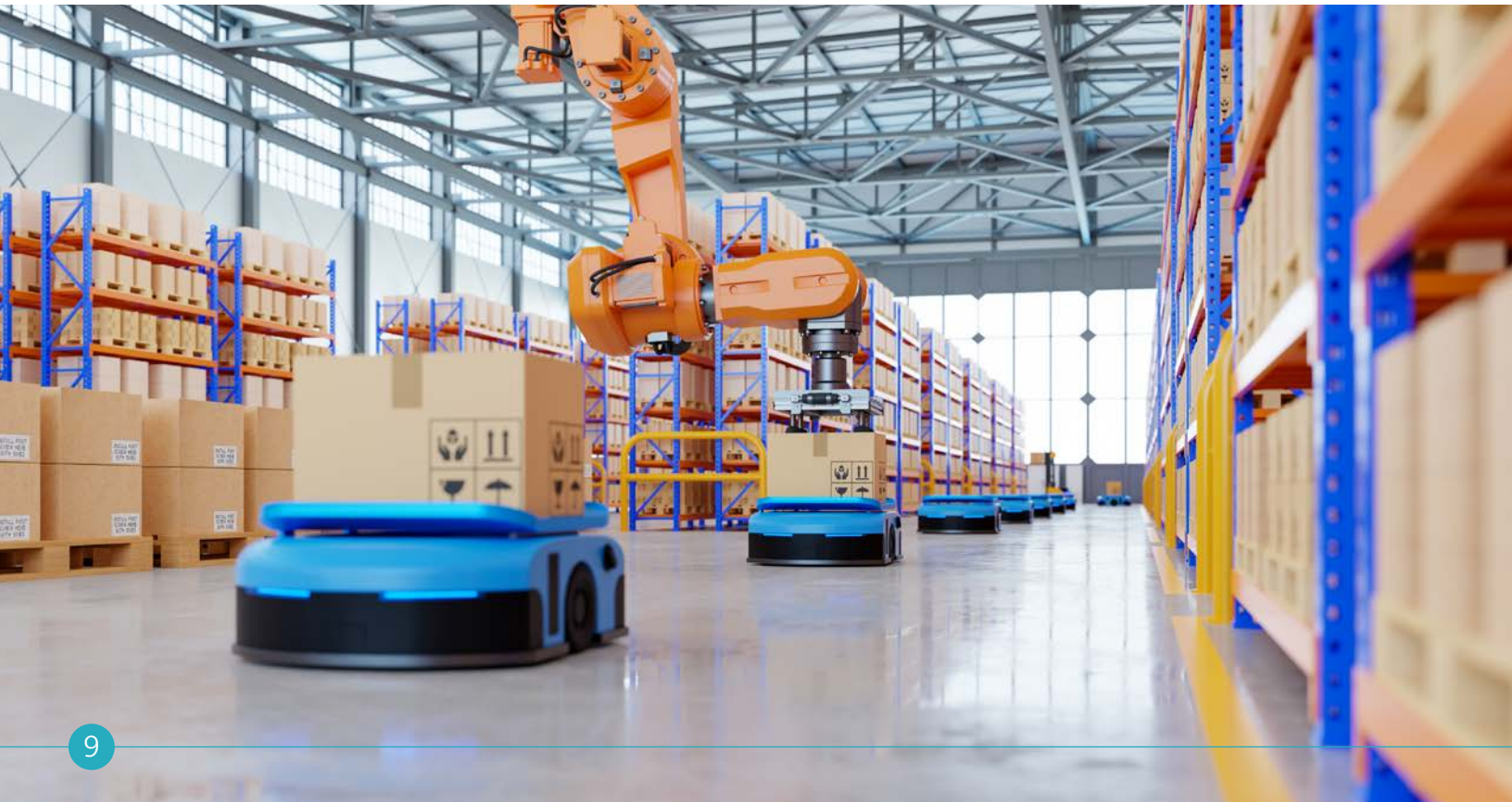
Unemployment

With the onset of the pandemic, unemployment rates sharply spiked, reaching double-digit levels. Throughout the remainder of 2020, and continuing to October 2022, unemployment rates steadily decreased (Exhibit 3). In October 2022, the average unemployment rate was 3.6% in the counties of the North Far North region. The unemployment rate was 4.0% in California. These unemployment rates are below pre-pandemic levels.

Exhibit 3. Unemployment rates (%), North Far North region and California, January 2020–October 2022



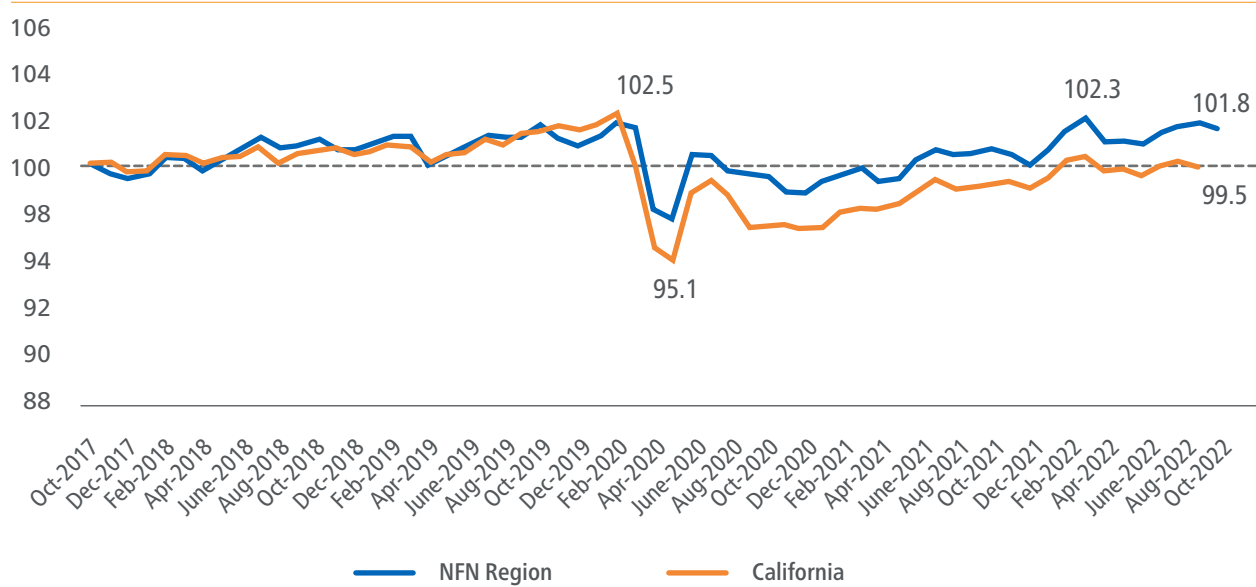
Source: California Employment Development Department, Labor Market Information Division (LMID), Labor Force and Unemployment, <https://www.labormarketinfo.edd.ca.gov/data/unemployment-and-labor-force.html>
 Note: Unemployment rates are averaged across the counties of the North Far North region.



Labor Force

The labor force experienced a sharp contraction in the North Far North region and the state following the onset of the pandemic. Between October 2017 and in May 2020, the labor force in California decreased by 7.4%; in the North Far North region, it decreased by 4.6% (Exhibit 4). Though the labor force in neither geography has returned to the levels of late 2019, that of the North Far North has experienced a more robust recovery compared with that of the state. In October 2022, the North Far North region’s labor force was 1.8% bigger than in October 2017, and California’s labor force was 0.5% smaller.

Exhibit 4. Civilian labor force, North Far North region and California, October 2017–October 2022 (indexed to October 2017)



Source: California Employment Development Department, Labor Market Information Division (LMID), Labor Force and Unemployment, <https://www.labormarketinfo.edd.ca.gov/data/unemployment-and-labor-force.html>

Poverty Rates

Poverty rates are set according to federal poverty guidelines based on household size and income. The income threshold does not vary by geography nationally. The levels are updated for inflation.¹ The North Far North region has a 1.2% higher share of population under the poverty threshold than the state (Exhibit 5). Census data show that in 2020, 13.8% of the population in the North Far North region was under the poverty threshold. The figure was 12.6% for the state. The data include the range of poverty rates for the counties in the North Far North region and California.

Exhibit 5. Poverty rates in the North Far North region and California

	2020 Average Poverty Rate	Range of County Poverty Rate
NFN	13.8%	7.1% to 23.2%
California	12.6%	6.2% to 23.2%

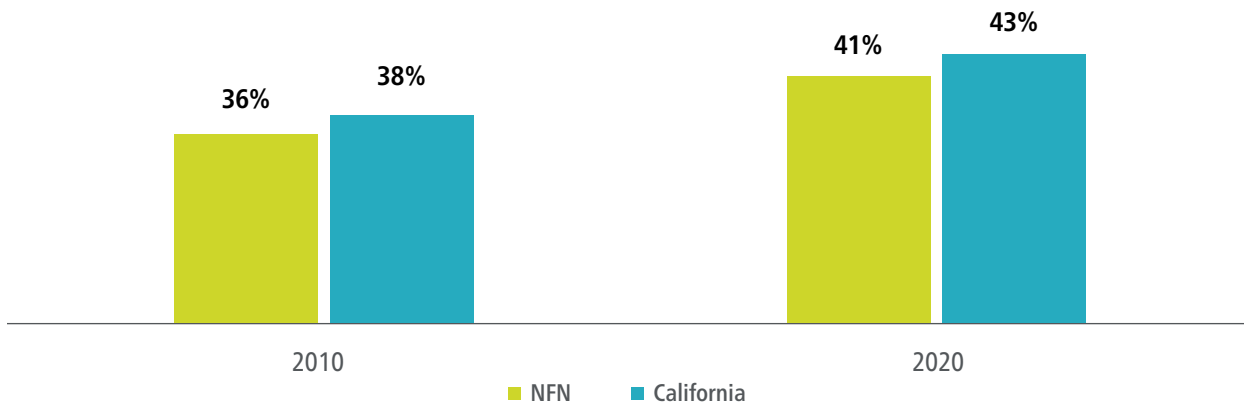
Source: U.S. Census Bureau, American Community Survey, 5-Year Estimates, 2020, <https://www.census.gov/programs-surveys/acs/data.html>

¹ U.S. Census Bureau, "How the U.S. Census Bureau Measures Poverty," <https://www.census.gov/topics/income-poverty/poverty/guidance/poverty-measures.html>.

Educational attainment

Exhibit 6 compares the share of the population age 25 and older with an associate degree or higher level of education in 2010 and 2020 in the North Far North region and California. Educational attainment increased by 5% in both geographies in the 10-year period. In the North Far North region, educational attainment increased from 36% in 2010 to 41% in 2020. In California, the figures were 38% and 43%, respectively.

Exhibit 6. Share of population age 25 and older with an associate or higher degree, North Far North region and California, 2010 and 2020



Source: U.S. Census Bureau, American Community Survey, 5-Year Estimates, 2020, <https://www.census.gov/programs-surveys/acs/data.html>



INDUSTRY SECTOR ANALYSIS



The COE used adopted industry definitions to estimate current, historical, and projected employment between 2016 and 2026 by industry sector for the North Far North region, subregions, and California.

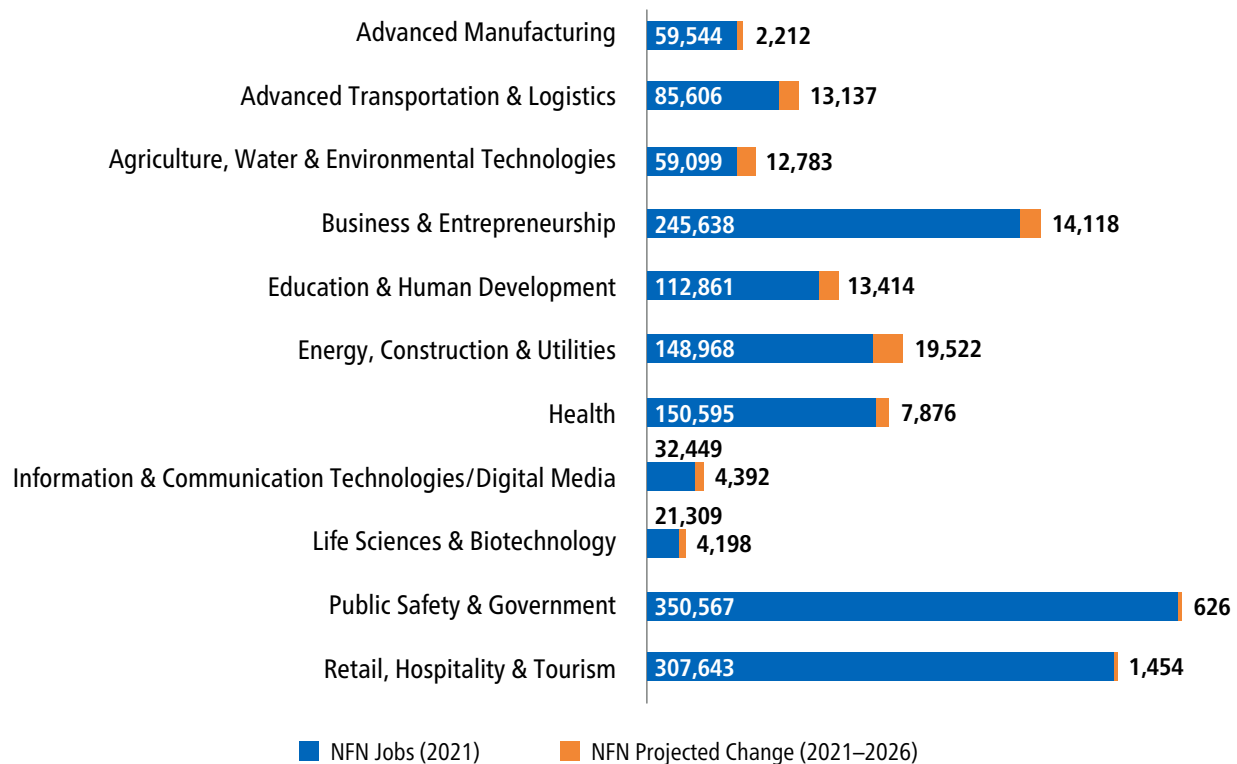
Industry Sector Employment, Historical Trends, and Projections, North Far North Region

There are more than 1.6 million jobs in the 22 counties comprising the North Far North region (Exhibit 7 and Exhibit 8). Over five years (2021–2026), the region’s priority sectors are projected to add 93,957 jobs, an increase of 6%.

The largest sectors include Public Safety and Government (350,567 jobs); Retail, Hospitality, and Tourism (307,643 jobs); Business and Entrepreneurship (245,638 jobs); Health (150,595); and Energy, Construction, and Utilities (148,968).

The sectors projected to grow the most include Energy, Construction, and Utilities (17%, 19,522 jobs); Business and Entrepreneurship (9%, 14,118 jobs); Education and Human Development (9%, 13,414 jobs); and Health (9%, 7,876 jobs). Manufacturing is projected to grow by just 1% (2,212 jobs). No sectors are projected to have employment decreases through 2026.

Exhibit 7. Industry sector current and projected employment, North Far North region, 2021–2026



Source: Lightcast, 2022.3 QCEW, Non-QCEW, Self-Employed

Exhibit 8 displays current, projected, and historical employment for the priority sectors in the North Far North region. Between 2016 and 2021, regional employment grew 4%, an increase of 61,987 jobs. The sectors with the strongest growth include Energy, Construction, and Utilities (24%, 28,737 jobs); Advanced Transportation and Logistics (20%, 14,543); Education and Human Development (14%, 13,441 jobs); Life Sciences and Biotechnology (14%, 2,603 jobs); Health (9%, 11,872 jobs); and Agriculture, Water, and Environmental Technology (7%, 3,700 jobs). Jobs declined in two sectors: Retail, Hospitality, and Tourism (2%, 6,415 jobs) and Public Safety and Government (1%, 3,955 jobs). Advanced Manufacturing and Business and Entrepreneurship had below-average growth rates.

Exhibit 8. Industry sector current, historical, and projected employment, North Far North region, 2016–2026

NFN Priority Sector	2021 Jobs	2026 Jobs	Historical Change (2016–2021)	Historical % Change (2016–2021)	Projected Change (2021–2026)	Projected % Change (2021–2026)
Public Safety & Government	350,567	352,779	(3,955)	(1%)	626	2%
Retail, Hospitality & Tourism	307,643	320,779	(6,415)	(2%)	1,454	7%
Business & Entrepreneurship	245,638	258,421	5,505	2%	14,118	9%
Health	150,595	164,713	11,872	9%	7,876	9%
Energy, Construction & Utilities	148,968	162,382	28,737	24%	19,522	17%
Education & Human Development	112,861	132,383	13,441	14%	13,414	9%
Advanced Transportation & Logistics	85,606	93,482	14,543	20%	13,137	4%
Advanced Manufacturing	59,544	63,936	1,012	2%	2,212	1%
Agriculture, Water & Environmental Technologies	59,099	63,297	3,700	7%	12,783	5%
Information & Communication Technologies/Digital Media	32,449	33,075	(2,352)	(7%)	4,392	7%
Life Sciences & Biotechnology	21,309	22,763	2,603	14%	4,198	7%
NFN Sector Totals	1,610,976	1,704,933	61,987	4%	93,957	6%

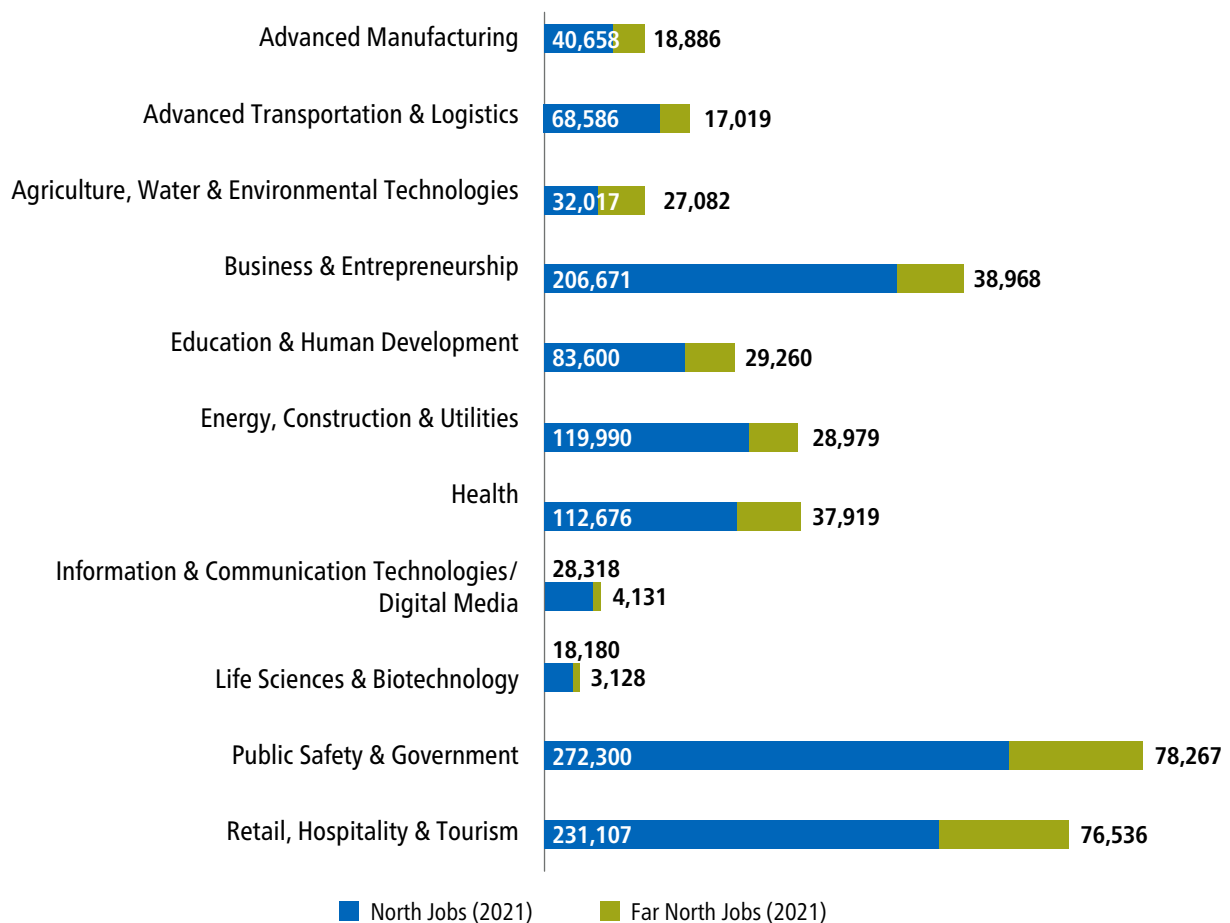
Source: Lightcast, 2022.3 QCEW, Non-QCEW, Self-Employed

Industry Sector Employment Composition, North Subregion and Far North Subregion

Exhibit 9 describes each subregion’s current employment, and Exhibit 10 presents the share of employment in each priority sector compared with total employment across sectors.

Most sectors have similar shares of total employment, but comparing the two subregions reveals important differences in regional employment. The North subregion has a 6.1% larger share of employment in Business and Entrepreneurship (16.7% of total, 206,671 jobs) than the Far North (10.5% of total, 38,968 jobs). The Far North subregion has a 4.7% larger share of employment in Agriculture, Water, and Environmental Technology (7.3% of total, 27,082 jobs) than the North (2.6% of total, 32,017 jobs). The North has a 1.8% smaller share of employment in Advanced Manufacturing (3.3% of total, 40,658 jobs) than the Far North (5.1% of total, 18,886 jobs). The North has a larger share of Life Science and Biotechnology employment (1.5% of total, 18,180 jobs) than the Far North (0.8% of total, 3,128 jobs).

Exhibit 9. Priority industry sector employment, North and Far North subregions, 2021



Source: Lightcast, 2022.3 QCEW, Non-QCEW, Self-Employed

Exhibit 10. Priority industry sector employment and share (%) of total, North and Far North subregions, 2021

Priority Sectors	North Jobs (2021)	North % of total	Far North Jobs (2021)	Far North % of total
Advanced Manufacturing	40,658	3.3%	18,886	5.1%
Advanced Transportation & Logistics	68,586	5.5%	17,019	4.6%
Agriculture, Water & Environmental Technologies	32,017	2.6%	27,082	7.3%
Business & Entrepreneurship	206,671	16.7%	38,968	10.5%
Education & Human Development	83,600	6.7%	29,260	7.9%
Energy, Construction & Utilities	119,990	9.7%	28,979	7.8%
Health	112,676	9.1%	37,919	10.2%
Information & Communication Technologies/ Digital Media	28,318	2.3%	4,131	1.1%
Life Sciences & Biotechnology	18,180	1.5%	3,128	0.8%
Other Services	26,624	2.1%	10,072	2.7%
Public Safety & Government	272,300	21.9%	78,267	21.1%
Retail, Hospitality & Tourism	231,107	18.6%	76,536	20.7%
Sector Employment Totals	1,240,727	100.0%	370,249	100.0%

Source: Lightcast, 2022.3 QCEW, Non-QCEW, Self-Employed



Industry Sector Employment, Historical Trends and Projections, North Far North Region and California

Exhibit 11 displays historical trends (2016–2021) in priority sector employment for the North and Far North subregions and California. The data indicate that the Far North did not experience the same performance in many sectors as the North subregion and California.

Advanced Transportation and Logistics experienced positive employment growth in all geographies, but the sector grew 20% less (5%, 860 jobs) in the Far North than in the North (25%, 13,682 jobs).

Similarly, Education and Human Development grew in all geographies. In the North, the sector grew by 18% (12,664 jobs), whereas in the Far North it grew by just 3% (777 jobs).

Energy, Construction, and Utilities also grew across the state and the region, but in the Far North it grew by less than half (13%, 3,358 jobs) than in the North (27%, 25,380 jobs).

Health grew by 12% in the North (11,772 jobs) but not at all in the Far North (0%, 99 jobs).

Though Information and Communications Technology/ Digital Media declined across the North Far North region, the sector decreased twice as much in the Far North (14%, 677 jobs) as in the North (6%, 1,675 jobs). The sector increased by 8% in California.

Exhibit 11. Industry priority sector historical employment (% change), North and Far North subregions and California, 2016–2021



Source: Lightcast, 2022.3 QCEW, Non-QCEW, Self-Employed

The data on projected growth (2021–2026) in the priority sectors presents a more optimistic outlook than historical performance (Exhibit 12). Several sectors are projected to grow faster in the North Far North region than in California.

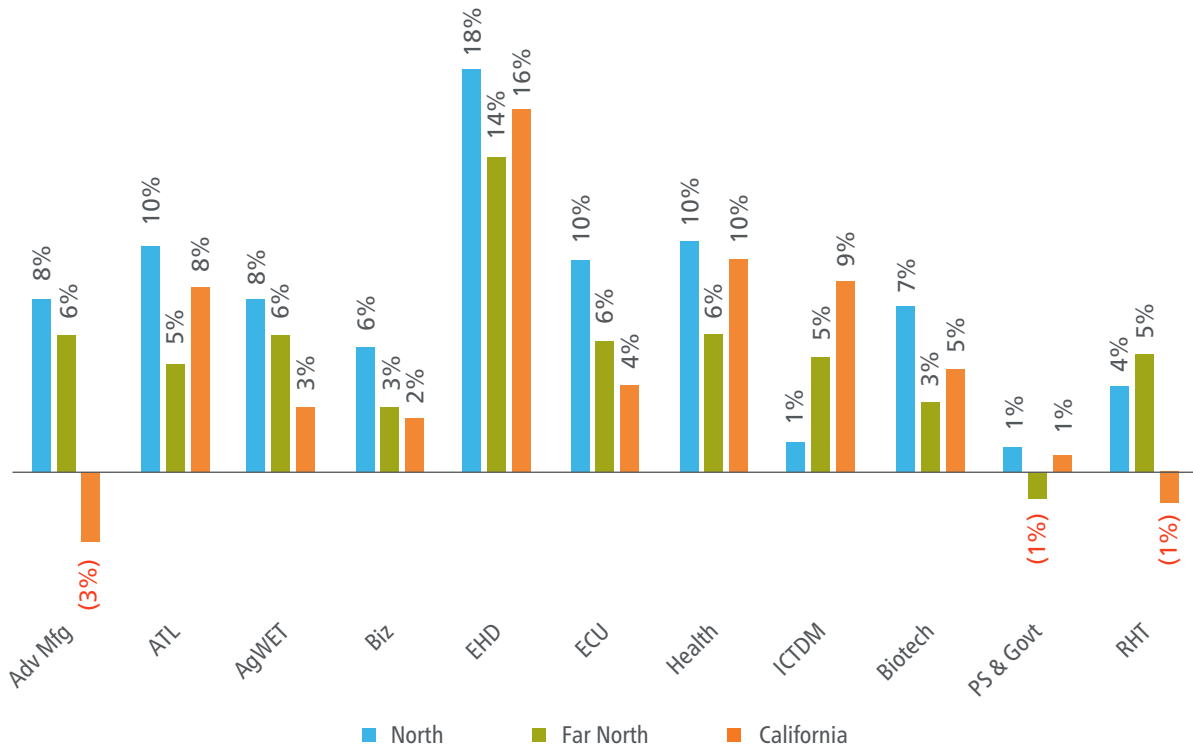
Advanced Manufacturing is projected to grow by 8% (3,220 jobs) in the North and 6% in the Far North (2,212 jobs). In California, the sector is projected to decline by 3%.

Agriculture, Water, and Environmental Technology is projected to grow by 8% in the North (2,514 jobs) and 6% in the Far North (1,684 jobs), but just 3% in the state. Similarly, Energy, Construction, and Utilities is projected to grow by 10% in the North (11,684 jobs) and 6% (1,730 jobs) in the Far North, but only by 4% in the state.

Retail, Hospitality, and Tourism is projected to grow faster in the North Far North region than in the state. In the North, the sector is projected to increase by 4% (9,030 jobs). In the Far North, the figure is 5% (4,106 jobs). The state is projected to reduce sector jobs by 1%.

Information and Communications Technology/Digital Media is projected to grow faster in the state than in the North Far North region. In the North, the sector is projected to grow by just 1% (411 jobs), whereas in the Far North, the sector is projected to grow by 5% (216 jobs). In the state, the sector is projected to increase by 9%.

Exhibit 12. Industry priority sector projected employment (% change), North and Far North subregions and California, 2021–2026



Source: Lightcast, 2022.3 QCEW, Non-QCEW, Self-Employed

OCCUPATIONAL ANALYSIS



Unlike industry data—primarily payroll data and self-employment data—occupation data are derived from a survey of businesses and reflect a framework that counts workers according to their job duties and skills. Occupation analysis enables a projection of job openings based on projected growth and measures of turnover from retirements and workers changing occupations. In a later section, the analysis compares these projected openings to the number of awards issued in related programs.

The analysis employs a definition that places occupations once only within only one priority sector. The result is that Public Safety falls to the second smallest because it no longer encompasses government jobs according to the occupational definition.) Three other sectors also have significantly different total employment counts: Health, Education, and Human Development; Retail, Hospitality, and Tourism; and Life Sciences and Biotechnology.

Exhibit 13 shows projected annual openings in the North Far North region. Across all priority sectors, the region is projected to have 201,822 annual openings through 2026. Business and Entrepreneurship has the most projected annual openings (39,535), followed by Retail, Hospitality, and Tourism (31,243); Health (27,258); and Advanced Transportation and Logistics (20,170). Life Sciences and Biotechnology is projected to have just 865 openings through 2026.

Exhibit 13. Projected occupational employment and annual openings, North Far North region, 2021–2026

NFN Sector	2021 Jobs	2026 Jobs	Projected Change	Projected % Change	Avg. Annual Openings
Business & Entrepreneurship	373,351	385,768	12,417	3%	39,535
Health	217,465	245,651	28,186	13%	27,258
Retail, Hospitality & Tourism	180,012	190,948	10,936	6%	31,243
Energy, Construction & Utilities	150,534	162,324	11,790	8%	17,161
Advanced Transportation & Logistics	146,357	158,124	11,767	8%	20,170
Education & Human Development	134,743	135,959	1,216	1%	13,422
Agriculture, Water & Environmental Technologies	68,387	72,450	4,063	6%	10,168
Advanced Manufacturing	56,006	59,476	3,470	6%	6,860
Information & Communication Technologies/Digital Media	55,620	57,698	2,078	4%	4,777
Public Safety	42,544	45,103	2,558	6%	5,409
Life Sciences & Biotechnology	7,889	8,391	501	6%	865
Grand Total	1,610,976	1,704,933	93,957	6%	201,822

Source: Lightcast, 2022.3 QCEW, Non-QCEW, Self-Employed

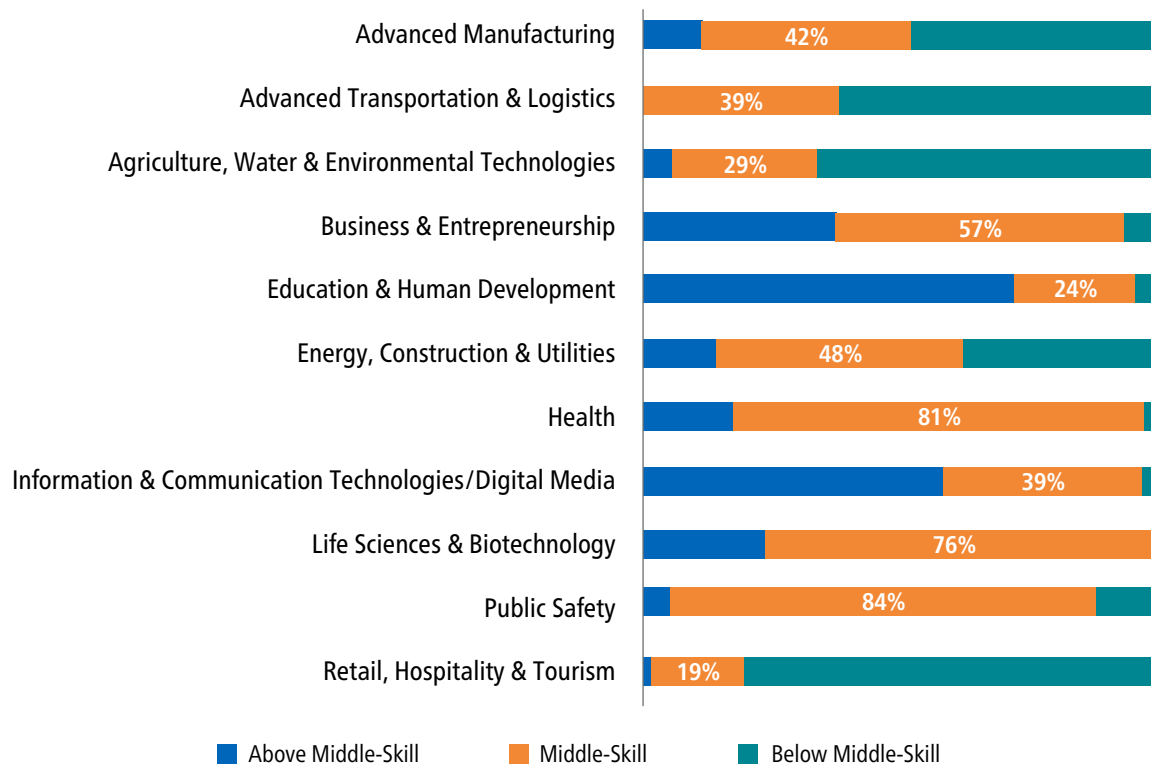
Middle-skill Occupational Analysis and Projected Annual Openings

The analysis parses occupation employment counts and projected annual openings by skill level. Some occupations are designated middle skill, meaning they require education beyond high school but less than a bachelor’s degree. The definition also includes educational attainment, experience levels, and apprenticeship.

Exhibit 14 displays the shares of occupation employment by skill level. The analysis reveals that 44% of total occupational employment is classified as middle skill (707,280 jobs). Another 32% (514,461 jobs) is above middle skill, requiring at least a bachelor’s degree, while 24% (383,761 jobs) count as below middle skill, requiring a high school diploma or less and little or no experience.

Several priority sectors have majority shares of middle-skill occupational employment. These sectors include Public Safety (84%, 35,661 jobs), Health (81%, 176,006 jobs), Life Sciences and Biotechnology (76%, 5,999 jobs), and Business and Entrepreneurship (57%, 211,717 jobs). Retail, Hospitality, and Tourism has the smallest share of middle-skill jobs (19%, 33,760 jobs), followed by Agriculture, Water, and Environmental Technologies (29%, 19,535 jobs).

Exhibit 14. Occupational employment by skill level and priority sector, North Far North region, 2021

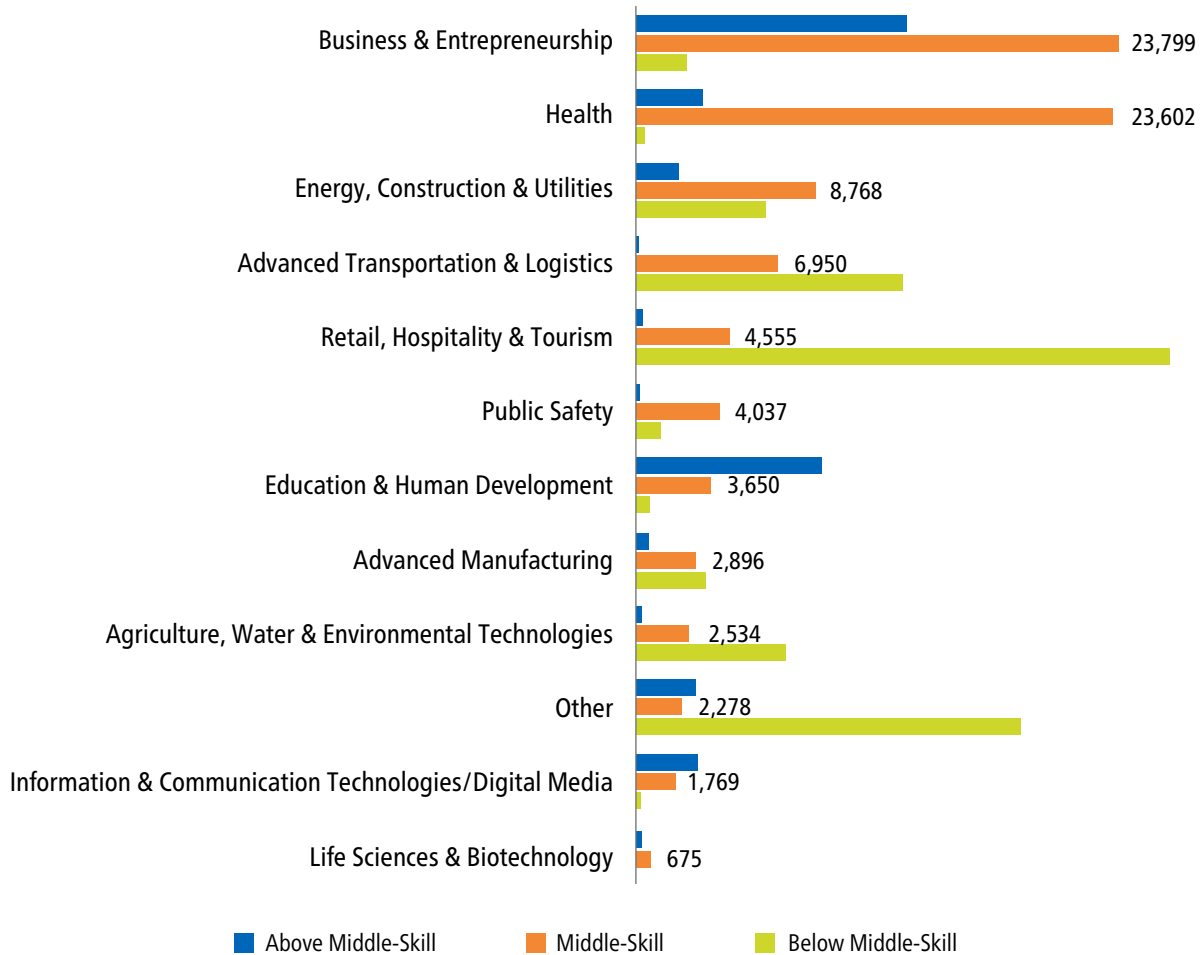


Source: Lightcast, 2022.3 QCEW, Non-QCEW, Self-Employed

Exhibit 15 shows the number of average annual openings between 2021 and 2026 for middle-skill occupations in each priority sector. (These totals are used in the section below for comparison to community college awards in the supply-demand gap analysis.) The analysis again shuffles the order of priority sectors when those sectors are sorted according to the number of average annual middle-skill occupational openings.

Business and Entrepreneurship leads with 23,799 projected annual middle-skill openings, followed by Health (23,602 annual openings); Energy, Construction, and Utilities (8,768 annual openings); and Advanced Transportation and Logistics (6,950 annual openings). Life Sciences and Biotechnology has the fewest number of annual openings (675).

Exhibit 15. Projected occupational annual openings, by skill level and priority sector, North Far North region, 2021–2026



Source: Emsi, 2021.3 QCEW, Non-QCEW, Self-Employed

ENROLLMENTS AND AWARDS



The analysis presented here uses data on student enrollment (credit and noncredit courses) from the Strong Workforce Program metrics in the Cal-PASS Plus LaunchBoard during the five-year period between the 2016–2017 and the 2020–2021 academic years. The analysis also shows the change between 2019–2020 and 2020–2021, revealing the effects of the pandemic. An analysis of awards data from the Community College Chancellor’s Office Data Mart (“paper awards”) for that period includes a three-year average number of enrollments and awards.

Enrollment Trends, North Far North Region

Enrollments declined precipitously between the 2016–2017 academic year and the 2020–2021 academic year in the North Far North region (Exhibit 16). During the five-year period, the region’s CTE programs declined by 17% (18,132 students). The vast majority of this reduction came between 2019–2020 and 2020–2021, when CTE enrollments declined by 15% (15,428 students).

The sharpest reductions occurred in Energy, Construction, and Utilities, which has declined by 55% (4,339 students) since the 2016–2017 academic year. (After having increased enrollments, the sector lost 6,178 students in the 2020–2021 academic year from the previous academic year.)

Since the 2016–2017 academic year, Advanced Transportation and Logistics enrollments have dropped 48% (1,154 students); most of the decrease occurred in 2020–2021. Advanced Manufacturing enrollments have fallen 41% (1,486 students), most of the decline having occurred during the pandemic. Retail, Hospitality, and Tourism has experienced a double-digit percentage enrollment reduction (38%, 1,519 students), about half of it before the pandemic.

Exhibit 16. Trends and average annual enrollments in CTE credit and noncredit courses, by priority sector, North Far North region, 2016–2017 to 2020–2021

Enrollments by Sector	2016–2017	2019–2020	2020–2021	Avg. Student Enrollments (2018/19–2020/21)	% Change Since 2016–2017	% Change Since 2019–2020
Advanced Manufacturing	3,665	3,525	2,179	3,098	(41%)	(38%)
Advanced Transportation & Logistics	2,407	2,066	1,253	1,817	(48%)	(39%)
Agriculture, Water & Environmental Technologies	5,467	5,108	4,959	5,116	(9%)	(3%)
Business & Entrepreneurship	23,777	22,880	21,246	22,312	(11%)	(7%)
Education & Human Development	14,787	15,150	13,721	14,654	(7%)	(9%)
Energy, Construction & Utilities	7,933	9,772	3,594	7,761	(55%)	(63%)
Global Trade	102	231	177	202	74%	(23%)
Health	22,578	24,467	22,687	23,855	0%	(7%)
Information & Communication Technologies/ Digital Media	24,649	23,134	20,938	22,494	(15%)	(9%)
Life Sciences & Biotechnology	215	116	128	135	(40%)	10%
Public Safety	16,717	14,306	13,010	14,484	(22%)	(9%)
Retail, Hospitality & Tourism	4,019	3,128	2,500	2,982	(38%)	(20%)
Unassigned CTE	4,313	4,710	3,436	4,214	(20%)	(27%)
Total NFN CTE Enrollments	105,899	103,195	87,767	99,148	(17%)	(15%)

Source: Cal-PASS Plus LaunchBoard, Strong Workforce Program

Awards Trends, North Far North Region

Data on number of awards, including certificates and degrees, presents a more optimistic picture than enrollments data. Overall, the North Far North region increased its awards totals by 7% (699 awards) between 2019–2020 and 2021–2022 (Exhibit 17). Awards data for the 2021–2022 academic year reveal an increase from the previous academic year in 7 of 11 priority sectors, including Education and Human Development (66%, 564 awards), Health (15%, 325 awards), Business and Entrepreneurship (6%, 142 awards), and Public Safety (6%, 86 awards).

The sectors with the largest three-year average annual awards totals include Business and Entrepreneurship (2,704 awards, 25% of total), Health (2,364 awards, 22% of total), Public Safety (1,594 awards, 15% of total), Education and Human Development (1,097 awards, 10% of total), and Information and Communications Technology/Digital Media (1,076 awards, 10% of total).

The sectors with the fewest number of three-year average annual awards were Life Sciences and Biotechnology (27 awards, <1% of total); Retail, Hospitality, and Tourism (138 awards, 1% of total); and Advanced Transportation and Logistics (234 awards, 2% of total).

Exhibit 17. Trends and average annual awards by priority sector, North Far North region, 2019–2020 to 2021–2022

Awards by Sector	Awards 2019–2020	Awards 2020–2021	Awards 2021–2022	3-Year % Change	3-Yr Avg. Annual Awards (2019/20–2021/22)	% of Awards
Advanced Manufacturing	535	435	383	(28%)	451	4%
Advanced Transportation & Logistics	287	199	217	(24%)	234	2%
Agriculture, Water & Environmental Technologies	397	350	333	(16%)	360	3%
Business & Entrepreneurship	2,571	2,828	2,713	6%	2,704	25%
Education & Human Development	857	1,012	1,421	66%	1,097	10%
Energy, Construction & Utilities	611	272	416	(32%)	433	4%
Health	2,163	2,442	2,488	15%	2,364	22%
Information & Communication Technologies/Digital Media	1,041	1,145	1,043	0%	1,076	10%
Life Sciences & Biotechnology	18	41	21	17%	27	0%
Public Safety	1,475	1,747	1,561	6%	1,594	15%
Retail, Hospitality & Tourism	137	141	137	0%	138	1%
Unassigned CTE	166	194	224	35%	195	2%
Total NFN CTE Awards	10,258	10,806	10,957	7%	10,674	100%

Source: Management Information Systems (MIS) Data Mart, California Community Colleges Chancellor’s Office

Comparison of Demand, Awards, and Enrollment

The research compares projected middle-skill occupational annual openings to the average of the most recent three years of annual awards (certificates and degrees) at community colleges (Exhibit 18 and Exhibit 19). The comparison calculates the difference between the two measures to estimate the gap between the supply of qualified workers and occupational demand in the workforce. In addition to the average awards and annual openings, Exhibit 18 includes an average of the most recent three years of enrollment data.

Two of the largest gaps are found in the sectors with the largest number of enrollments, awards, and openings. These gaps include a gap of 21,238 in Health, which has 23,602 projected annual openings and 2,364 average annual awards, and a gap of 21,095 in Business and Entrepreneurship, which has 23,799 projected annual openings and 2,704 average annual awards. With a gap of 8,335 awards, Energy, Construction, and Utilities ranks third in the gap analysis. Advanced Transportation and Logistics has the next largest gap with 6,950 projected annual openings and just 234 awards, a difference of 6,716.

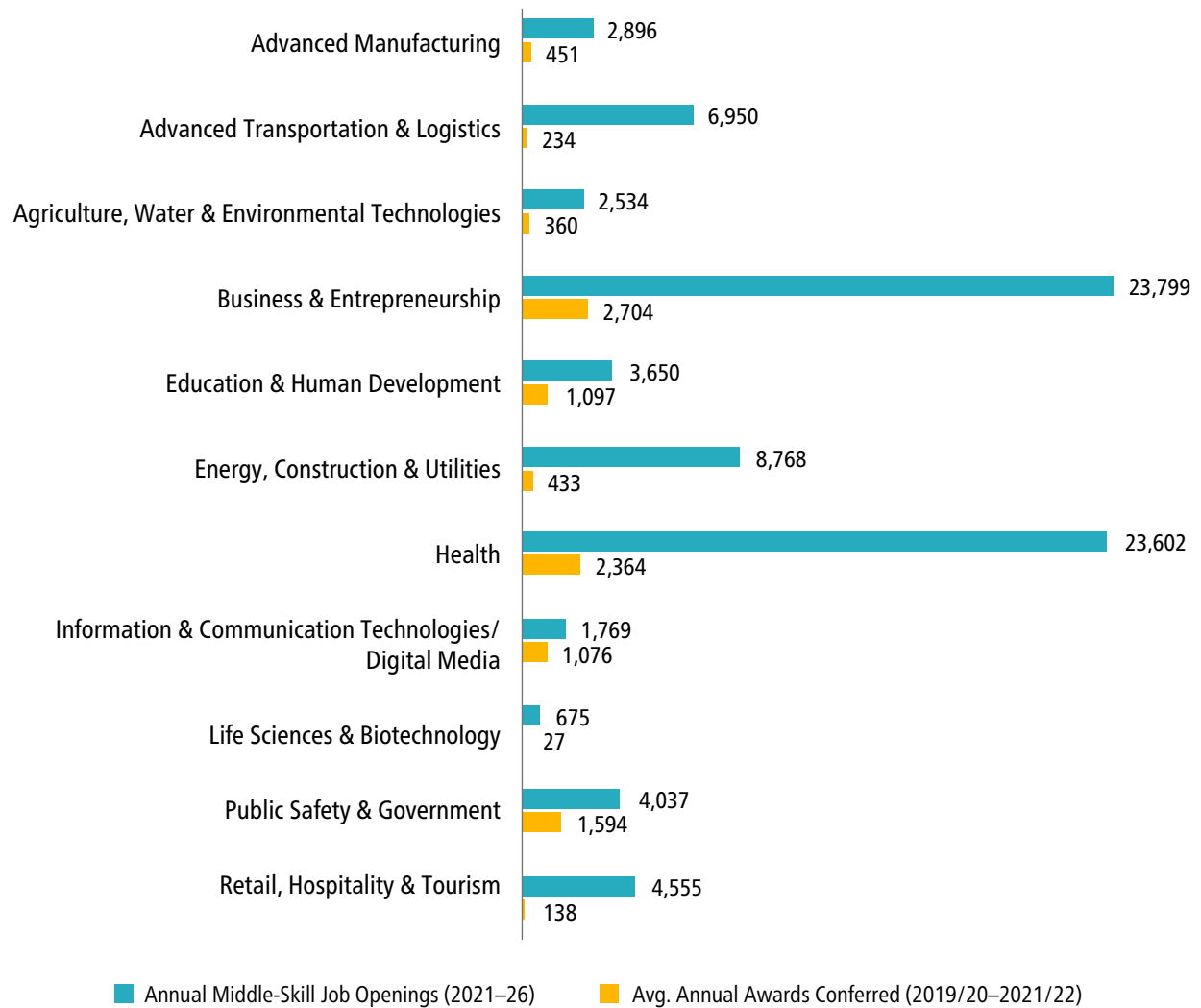
When the share of projected annual openings covered by average annual awards is measured, the gaps are smallest for Information and Communications Technologies/Digital Media (the number of awards is equivalent to 61% of the number of openings) and for Public Safety and Government (39%).

Exhibit 18. Average annual enrollments and awards compared with projected annual openings, by priority sector, North Far North region

Sector	3-Yr. Avg Annual Enrollments (2018–2021)	Annual Openings (2021–2026)	3-Yr. Avg. Annual Awards (2019–2022)	Difference-between awards and openings
Advanced Manufacturing	3,098	2,896	451	2,445
Advanced Transportation & Logistics	1,817	6,950	234	6,716
Agriculture, Water & Environmental Technologies	5,116	2,534	360	2,174
Business & Entrepreneurship	22,312	23,799	2,704	21,095
Education & Human Development	14,654	3,650	1,097	2,553
Energy, Construction & Utilities	7,761	8,768	433	8,335
Health	23,855	23,602	2,364	21,238
Information & Communication Technologies/Digital Media	22,494	1,769	1,076	693
Life Sciences & Biotechnology	135	675	27	648
Public Safety & Government	14,484	4,037	1,594	2,443
Retail, Hospitality & Tourism	2,982	4,555	138	4,417

Sources: Lightcast, 2022.3 QCEW, Non-QCEW, Self-Employed; Cal-PASS Plus LaunchBoard, Management Information Systems (MIS) Data Mart, California Community Colleges Chancellor's Office

Exhibit 19. Supply-demand gap analysis, comparing middle-skill occupation projected annual openings (2021–2026) and three-year average annual community college awards (2019–2020 to 2021–2022), by priority sector, North Far North region



Sources: Lightcast, 2022.3 QCEW, Non-QCEW, Self-Employed; Cal-PASS Plus Launchboard, Management Information Systems (MIS) Data Mart, California Community Colleges Chancellor’s Office

STRONG WORKFORCE PROGRAM STUDENT OUTCOMES



Through the statewide data system LaunchBoard, nine metrics of CTE student outcomes are available for tracking students' success in completing academic programs and entering the workforce. All nine metrics are presented in Exhibit 20 for the three subregions (Northern Inland, Northern Coastal, and North) comprising the North Far North region.

No consistent pattern emerges from these metrics. For example, employment in a related field has increased in two subregions, North (Greater Sacramento) and Northern Inland by 17% and 14%, respectively, but decreased in the Northern Coastal subregion by 1%. The percent of students earning a degree or certificate or attaining apprenticeship journey status increased in the Northern Coastal and North subregions and declined by 33% in the Northern Inland subregion.

These findings may be affected by considerable regional variation in CTE student enrollment. In the 2020–2021 academic year, community colleges in the North subregion enrolled the highest number of CTE students (66,104), followed by the Northern Inland subregion (17,261 students), and the Northern Coastal subregion (4,604 students).

CTE students in all three regions are attaining a living wage and making gains in median annual earnings; the greatest increases are occurring in the North subregion. Community colleges are doing well with transferring students, especially in the North subregion, which has the highest transfer rate, 26%. Enrollments are down across all three subregions, as is the number of students earning nine or more credits.

Exhibit 20. Percent change in LaunchBoard metrics for SWP student outcomes in the North Far North macro, sub, and microregions, 2013–2014 to 2020–2021 academic years^a

Metric	North Far North	Northern Inland	Northern Coastal	North (Greater Sacramento)
Career Education Student Enrollments	(18%)	(28%)	(27%)	(14%)
Students Earning 9+ Career Education Units	(4%)	(3%)	(14%)	(4%)
Completion of Noncredit CTE or Workforce Prep Course ^b	36%	72%	50%	11%
Students Earning Degree or Certificate or Attaining Apprenticeship Journey Status	53%	(33%)	19%	66%
Transfer to 4-Year Institution	18%	(1%)	6%	26%
Employment in a Related Field of Study	11%	17%	(1%)	14%
Median Earnings	28%	21%	24%	35%
Change in Median Earnings	11%	21%	6%	10%
Attainment of Living Wage	12%	9%	15%	11%

Source: Cal-PASS Plus LaunchBoard

a. Unless otherwise noted, the analysis compares data from the 2013–2014 academic year (as the baseline year) with the 2020–2021 academic year. Data for students who attained a living wage were not available for 2020–2021; as a result, 2019–2020 data have been used. Data for students who obtained a job closely related to their field of study also were not available for 2020–2021; as a result, 2018–2019 data, the most recent available, have been used. Data for student transfers are derived from the most recent year available, the 2019–2020 academic year.

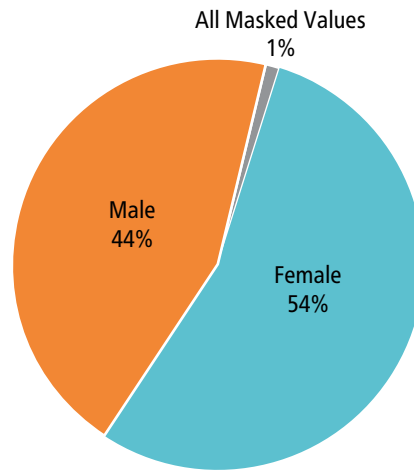
b. Due to low baseline numbers, the percentages for non-credit awards are substantially higher than for other student outcomes metrics.

CTE STUDENT DEMOGRAPHICS



Female students comprise 54% of all CTE students in the North Far North region; male students comprise 44% (Exhibit 21).

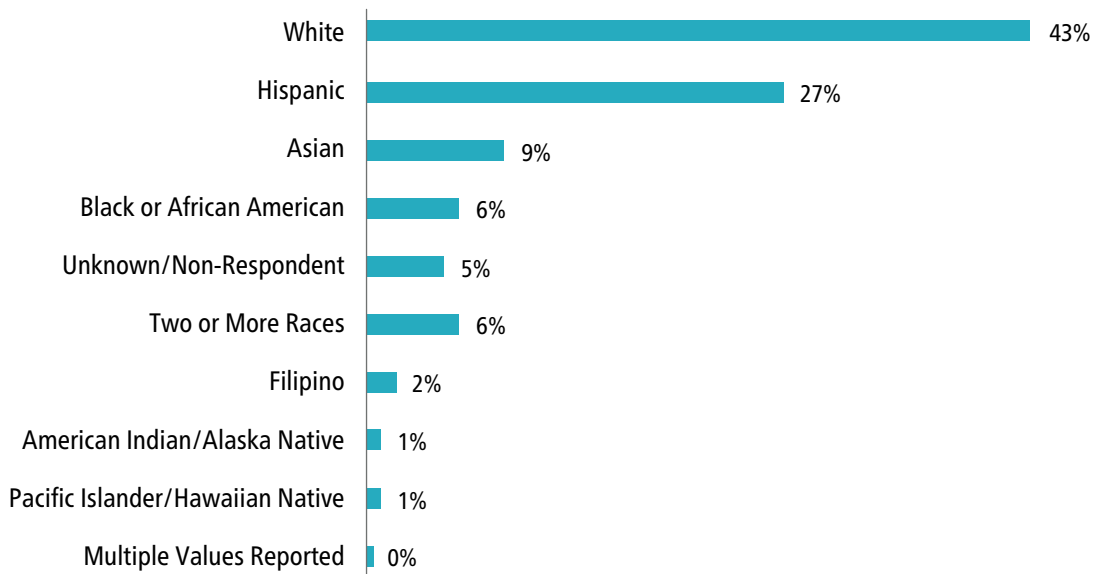
Exhibit 21. CTE student composition by gender, North Far North region



Source: Cal-PASS Plus LaunchBoard

White students account for 43% of all CTE students in the North Far North region, followed by Hispanic or Latino students, 27%, and Asian American students, 9% (Exhibit 22). Due to the substantially lower number of students who identify as Filipino, American Indian/Alaska Native, or Pacific Islander/Hawaiian Native and to the number of students who report multiple values, percentage increases discussed in the following subsections may not be representative of a definitive trend.

Exhibit 22. CTE student composition by race/ethnicity, North Far North region^a



Source: Cal-PASS Plus LaunchBoard

^aPercentages may not add up to 100% due to rounding.

STUDENT OUTCOMES BY GENDER AND RACE/ETHNICITY



Of the nine SWP LaunchBoard metrics, four have been selected for the regional consortium’s strategic plan to measure progress by the community colleges and are analyzed in this section:

- Students who attained a living wage
- Students who obtained a job closely related to their field of study
- Students who earned an award
- Students who transferred

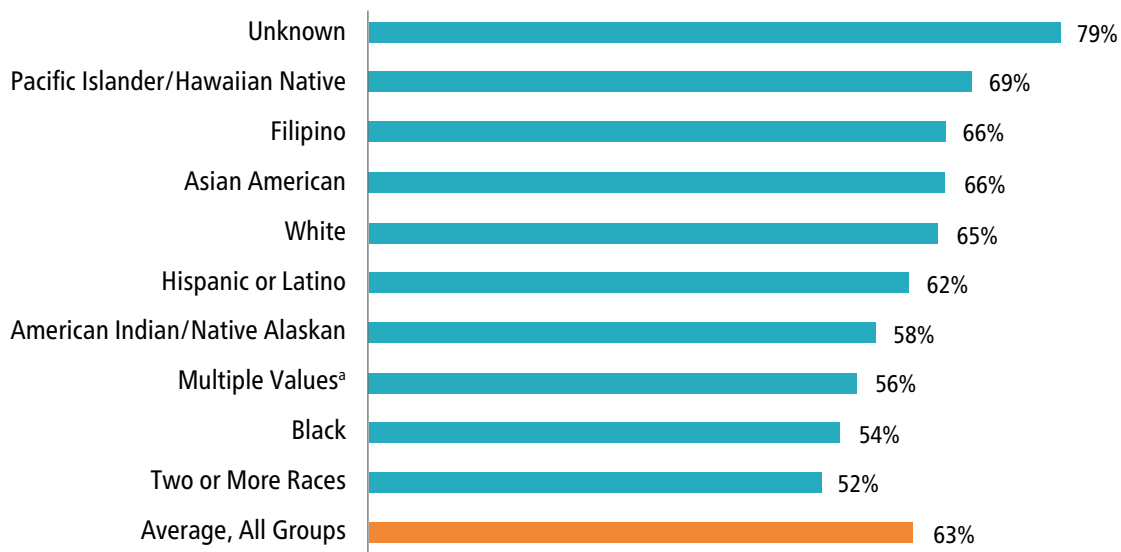
To determine whether disparities are influencing CTE student outcomes according to these metrics, those outcomes were related to student demographics, namely, gender and race/ethnicity.² Further analysis was conducted to identify disproportionate impacts.³ Student outcomes are reported for the North Far North region (all three subregions combined) unless otherwise noted.

Attained a Living Wage

Analysis shows that female CTE students are disproportionately impacted in terms of attainment of a living wage. Of CTE students who exited college and did not transfer to a postsecondary institution, only 57% of female students attained a living wage, compared with 67% of male students.

Analysis shows a disproportionate impact on students who identify as two or more races, Black, or American Indian/ Native Alaskan. These groups may benefit from increased efforts by community colleges to connect them with employment opportunities that pay a living or higher wage. Filipino, Asian American, and Pacific Islander/Hawaiian Native students are more successful at attaining a living wage than other groups (Exhibit 23).

Exhibit 23. Percent of students who attained a living wage by race/ethnicity, North Far North region, 2019–2020 academic year



Source: Cal-PASS Plus LaunchBoard

^a Data for the “multiple values” category were not available.

² This report uses LaunchBoard’s race and ethnicity data, which is collected by the California Community Colleges. The terms in this document, including white, Hispanic, and Black, adhere to the terms and definitions the California Community Colleges use in data collection. For definitions, please refer to <https://webdata.cccco.edu/ded/std/std10.pdf>.

³ A disproportionate impact is identified through a percentage point gap (PPG-1), which is determined by comparing the student success rate for a given group with the overall success rate for all groups, minus the first group. A PPG less than -2.0% indicates a disproportionate impact.

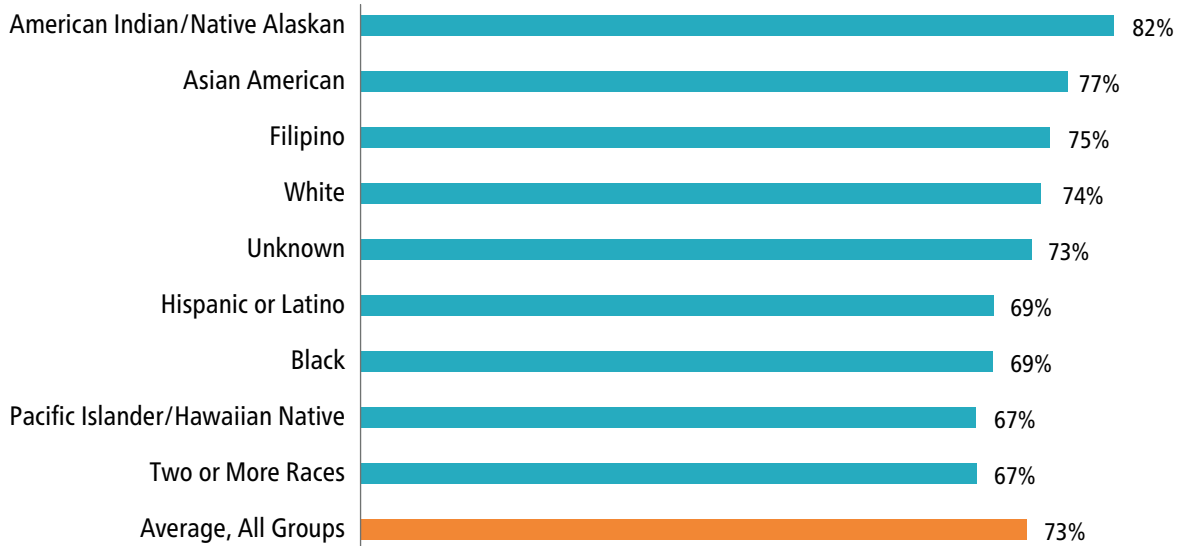
Employed in a Related Field of Study

Analysis shows that male CTE students are disproportionately impacted in terms of attainment of employment in a related field of study. A lower percentage of male students (70%) reported employment in a related field of study than female students (75%).

In terms of race/ethnicity data, a disproportionate impact was found for students who identify as Hispanic or Black in obtaining employment in a related field of study. Students who identify as American Indian/Native Alaskan, Asian American, and Filipino are more successful than students of other races or ethnicities in obtaining employment in a related field of study (Exhibit 24). Hispanic students and Black students, at 69%, and Pacific Islander/Hawaiian Native students as well as students who are of two or more races, at 67%, fall below the average of 73%. These groups may benefit from greater efforts by community colleges to ensure they are entering jobs related to their programs of study.

The highest success rate (82%) for this metric is reported by students who are American Indian/Native Alaskan. But this group has the smallest number of students among all race/ethnicity groups; as a result, it is difficult to reach any conclusion about why this group appears to be more successful in obtaining employment in a related field of study.

Exhibit 24. Percent of students who obtained a job in a related field of study by race/ethnicity, North Far North region, 2018–2019 academic year



Source: Cal-PASS Plus LaunchBoard



Earned Awards

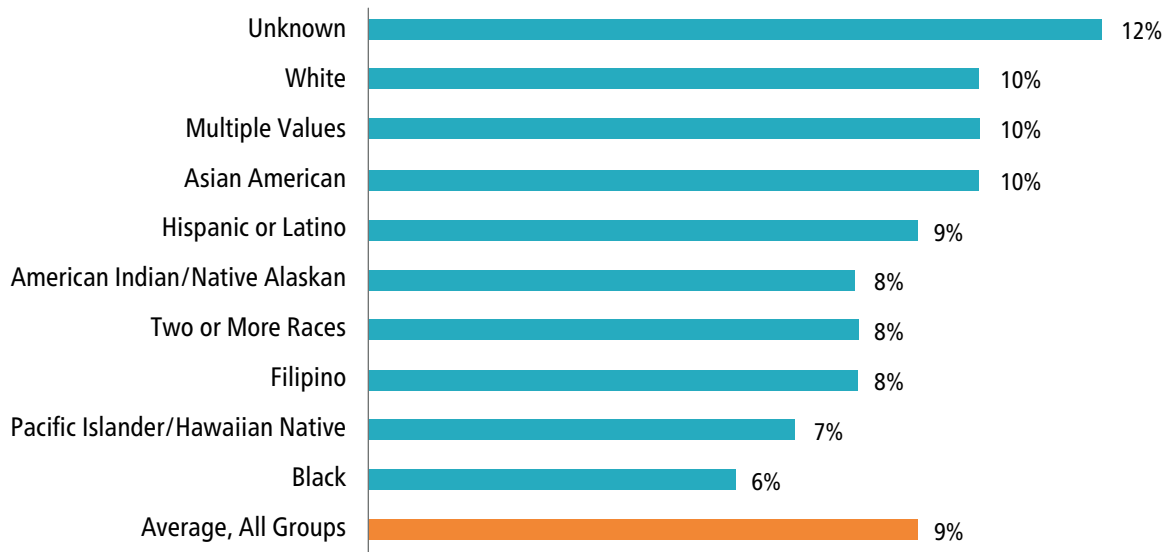
No disproportionate impact was found for gender. However, a slightly higher percentage of male students, 8.7%, are earning awards compared with female students, 7.9%.

The percentage of CTE students who earned awards is the lowest of all metrics analyzed:

- Students of unknown race/ethnicity, 12%
- White students, 10%
- Students reporting multiple values, 10%
- American Indian/Native Alaskan students, 10%
- Black students, 6%

Overall, a very small percentage of CTE students, only 9%, earn awards (Exhibit 25). Analysis shows a disproportionate impact on Black students. This student group may benefit from increased support from the community colleges.

Exhibit 25. Percent of students who earned awards by race/ethnicity, North Far North region, 2020–2021 academic year



Source: Cal-PASS Plus LaunchBoard

Student Transfers

Analysis shows a disproportionate impact for male CTE students compared with female students. A lower percentage of male students, 15%, are transferring compared with female students, 22%.

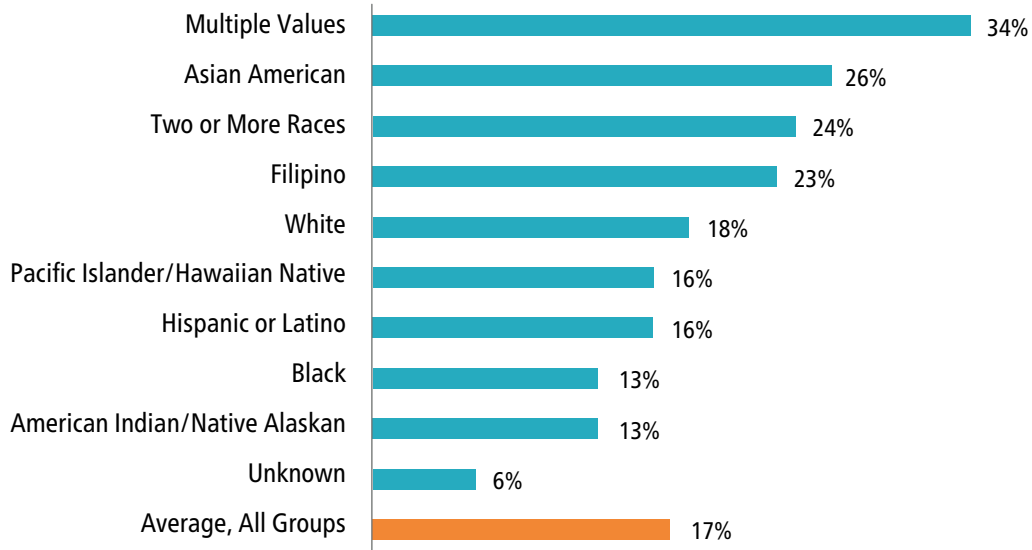
Disproportionate impacts exist for two groups of students in terms of race/ethnicity: unknown/nonrespondent and Black. These groups have the lowest transfer rates of all groups:

- Unknown/nonrespondent students, 7%
- Black students, 15%
- American Indian/Native Alaskan students, 15%

This finding indicates that increased outreach and support services directed to Black and American Indian/Native Alaskan students through the community colleges may increase these groups’ transfer rates to four-year postsecondary institutions.

Groups with the highest transfer rates are students with multiple reported values, 34%; Asian American students, 26%; students identifying as two or more races, 24%; and Filipino students, 23%. The average for all groups is 17%.

Exhibit 26. Percent of students who transferred by race/ethnicity, North Far North region, 2019–2020 academic year



Source: Cal-PASS Plus LaunchBoard

APPENDIX A: PRIORITY SECTOR SUMMARY AND PRIORITY MIDDLE-SKILL OCCUPATIONS



Appendix A provides an overview of key data for each of the 11 priority sectors, including sector employment, five-year projected annual openings for middle-skill jobs, three-year average enrollments, and three-year average awards conferred. The analysis includes a selection of middle-skill occupations that merit the attention of community colleges.

The job counts are for middle-skill occupations with at least 20 annual job openings across the North Far North region and with a median wage of at least \$24.40 per hour (the average living wage needed to support a small family in the North Far North region).

Certain sectors had no or too few occupations that met the median wage criteria. As a result, COE included occupations that can be linked to existing training programs across the region. These sectors include AgWET, Education and Human Development, ICT/DM, and Retail, Hospitality, and Tourism.

Exhibit A1. Advanced Manufacturing

NFN Sector Employment, 2021	59,544
Annual Middle-Skill Job Openings (2021–26)	2,896
Student Enrollment, 3-Year Average (2018/19–2020/21)	3,098
Average Annual Awards Conferred (2019/20–2021/22)	451

Priority middle-skill occupations:

- 49-9041.00—Industrial Machinery Mechanics
- 17-3023.00—Electrical and Electronic Engineering Technologists and Technicians
- 49-9012.00—Control and Valve Installers and Repairers, Except Mechanical Door
- 17-3029.00—Engineering Technologists and Technicians, Except Drafters, All Other
- 51-9011.00—Chemical Equipment Operators and Tenders
- 49-9044.00—Millwrights
- 49-2094.00—Electrical and Electronics Repairers, Commercial and Industrial Equipment
- 49-9043.00—Maintenance Workers, Machinery
- 17-3013.00—Mechanical Drafters
- 17-3012.00—Electrical and Electronics Drafters

Exhibit A2. Advanced Transportation

NFN Sector Employment, 2021	85,606
Annual Middle-Skill Job Openings (2021–26)	6,950
Student Enrollment, 3-Year Average (2018/19–2020/21)	1,817
Average Annual Awards Conferred (2019/20–2021/22)	234

Priority middle-skill occupations:

- 49-3023.00—Automotive Service Technicians and Mechanics
- 49-3031.00—Bus and Truck Mechanics and Diesel Engine Specialists
- 49-3042.00—Mobile Heavy Equipment Mechanics, Except Engines
- 11-3071.00—Transportation, Storage, and Distribution Managers
- 13-1081.00—Logisticians
- 49-3021.00—Automotive Body and Related Repairers
- 49-3011.00—Aircraft Mechanics and Service Technicians
- 53-2012.00—Commercial Pilots
- 53-6051.00—Transportation Inspectors
- 53-7021.00—Crane and Tower Operators
- 53-3032.00—Heavy and Tractor-Trailer Truck Drivers

Exhibit A3. Agriculture, Water, and Environmental Technologies

NFN Sector Employment, 2021	59,099
Annual Middle-Skill Job Openings (2021–26)	2,534
Student Enrollment, 3-Year Average (2018/19–2020/21)	5,116
Average Annual Awards Conferred (2019/20–2021/22)	360

Priority middle-skill occupations:

- 19-4071.00—Forest and Conservation Technicians (does not meet living-wage criteria)
- 37-1012.00—First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers (does not meet living-wage criteria)
- 45-1011.00—First-Line Supervisors of Farming, Fishing, and Forestry Workers (does not meet living-wage criteria)
- 29-2056.00—Veterinary Technologists and Technicians (does not meet living-wage criteria)
- 49-3041.00—Farm Equipment Mechanics and Service Technicians (does not meet living-wage criteria)
- 47-4041.00—Hazardous Materials Removal Workers (does not meet living-wage criteria)
- 45-2011.00—Agricultural Inspectors (does not meet living-wage criteria)
- 19-4012.00—Agricultural Technicians (does not meet living-wage criteria)
- 37-3012.00—Pesticide Handlers, Sprayers, and Applicators, Vegetation (does not meet living-wage criteria)
- 19-4013.00—Food Science Technicians (does not meet living-wage criteria)

Exhibit A4. Business and Entrepreneurship

NFN Sector Employment, 2021	245,638
Annual Middle-Skill Job Openings (2021–26)	23,799
Student Enrollment, 3-Year Average (2018/19–2020/21)	22,312
Average Annual Awards Conferred (2019/20–2021/22)	2,704

Priority middle-skill occupations:

- 11-1021.00—General and Operations Managers
- 41-4012.00—Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products
- 41-3021.00—Insurance Sales Agents
- 41-9022.00—Real Estate Sales Agents
- 43-6011.00—Executive Secretaries and Executive Administrative Assistants
- 11-9141.00—Property, Real Estate, and Community Association Managers
- 13-1021.00—Buyers and Purchasing Agents
- 13-1051.00—Cost Estimators
- 13-1031.00—Claims Adjusters, Examiners, and Investigators
- 43-3051.00—Payroll and Timekeeping Clerks

Exhibit A5. Education and Human Development

NFN Sector Employment, 2021	112,861
Annual Middle-Skill Job Openings (2021–26)	3,650
Student Enrollment, 3-Year Average (2018/19–2020/21)	14,654
Average Annual Awards Conferred (2019/20–2021/22)	1,097

Priority middle-skill occupations:

- 39-9011.00—Childcare Workers (does not meet living-wage criteria)
- 25-1194.00—Teaching Assistants, Except Postsecondary (does not meet living-wage criteria)
- 25-2011.00—Preschool Teachers, Except Special Education (does not meet living-wage criteria)
- 25-9044.00—Teaching Assistants, Postsecondary
- 25-2012.00—Kindergarten Teachers, Except Special Education

Exhibit A6. Energy, Construction, and Utilities

NFN Sector Employment, 2021	148,968
Annual Middle-Skill Job Openings (2021–26)	8,768
Student Enrollment, 3-Year Average (2018/19–2020/21)	7,761
Average Annual Awards Conferred (2019/20–2021/22)	433

Priority middle-skill occupations:

- 47-2031.00—Carpenters
- 47-2111.00—Electricians
- 47-2152.00—Plumbers, Pipefitters, and Steamfitters
- 47-2073.00—Operating Engineers and Other Construction Equipment Operators
- 49-9021.00—Heating, Air Conditioning, and Refrigeration Mechanics and Installers
- 49-2022.00—Telecommunications Equipment Installers and Repairers, Except Line Installers
- 47-4011.00—Construction and Building Inspectors
- 47-2211.00—Sheet Metal Workers
- 51-8031.00—Water and Wastewater Treatment Plant and System Operators
- 49-9051.00—Electrical Power-Line Installers and Repairers

Exhibit A7. Health

NFN Sector Employment, 2021	150,595
Annual Middle-Skill Job Openings (2021–26)	23,602
Student Enrollment, 3-Year Average (2018/19–2020/21)	23,855
Average Annual Awards Conferred (2019/20–2021/22)	2,364

Priority middle-skill occupations:

- 29-1141.00—Registered Nurses
- 29-2061.00—Licensed Practical and Licensed Vocational Nurses
- 29-1292.00—Dental Hygienists
- 29-2034.00—Radiologic Technologists and Technicians
- 29-2072.00—Medical Records Specialists
- 29-1126.00—Respiratory Therapists
- 31-2021.00—Physical Therapist Assistants
- 29-2055.00—Surgical Technologists
- 29-2032.00—Diagnostic Medical Sonographers
- 31-2011.00—Occupational Therapy Assistants

Exhibit A8. Information and Communication Technologies/Digital Media

NFN Sector Employment, 2021	32,449
Annual Middle-Skill Job Openings (2021–26)	1,769
Student Enrollment, 3-Year Average (2018/19–2020/21)	22,494
Average Annual Awards Conferred (2019/20–2021/22)	1,076

Priority middle-skill occupations:

- 15-1232.00—Computer User Support Specialists
- 27-4021.00—Photographers (does not meet living-wage criteria)
- 15-1244.00—Network and Computer Systems Administrators
- 15-1231.00—Computer Network Support Specialists
- 15-1241.00—Computer Network Architects
- 15-1254.00—Web Developers
- 27-4011.00—Audio and Video Technicians
- 15-1255.00—Web and Digital Interface Designers
- 27-4012.00—Broadcast Technicians (does not meet living-wage criteria)
- 27-4014.00—Sound Engineering Technicians (fewer than 20 annual job openings)

Exhibit A9. Life Sciences and Biotechnology

NFN Sector Employment, 2021	21,309
Annual Middle-Skill Job Openings (2021–26)	675
Student Enrollment, 3-Year Average (2018/19–2020/21)	135
Average Annual Awards Conferred (2019/20–2021/22)	27

Priority middle-skill occupations:

- 11-9199.11—Clinical Laboratory Technologists and Technicians
- 19-4099.00—Life, Physical, and Social Science Technicians, All Other (does not meet living-wage criteria)
- 19-4021.00—Biological Technicians (does not meet living-wage criteria)
- 31-9093.00—Medical Equipment Preparers
- 49-9062.00—Medical Equipment Repairers
- 19-4031.00—Chemical Technicians (does not meet living-wage criteria)
- 11-9199.11—Forensic Science Technicians

Exhibit A10. Public Safety (excludes Government)

NFN Sector Employment, 2021	350,567
Annual Middle-Skill Job Openings (2021–26)	4,037
Student Enrollment, 3-Year Average (2018/19–2020/21)	14,484
Average Annual Awards Conferred (2019/20–2021/22)	1,594

Priority middle-skill occupations:

- 33-3051.00—Police and Sheriff’s Patrol Officers
- 33-3012.00—Correctional Officers and Jailers
- 33-2011.00—Firefighters
- 33-3021.00—Detectives and Criminal Investigators
- 43-5031.00—Public Safety Telecommunicators
- 33-9021.00—Private Detectives and Investigators
- 33-9093.00—Transportation Security Screeners
- 33-3031.00—Fish and Game Wardens
- 33-1099.00—First-Line Supervisors of Protective Service Workers, All Other
- 33-2021.00—Fire Inspectors and Investigators

Exhibit A11. Retail, Hospitality, and Tourism

NFN Sector Employment, 2021	307,643
Annual Middle-Skill Job Openings (2021–26)	4,555
Student Enrollment, 3-Year Average (2018/19–2020/21)	2,982
Average Annual Awards Conferred (2019/20–2021/22)	138

Priority middle-skill occupations:

- 11-9051.00—Food Service Managers
- 11-9081.00—Lodging Managers
- 39-1013.00—First-Line Supervisors of Gambling Services Workers
- 11-9072.00—Entertainment and Recreation Managers, Except Gambling
- 35-1011.00—Chefs and Head Cooks (does not meet living-wage criteria)
- 39-7011.00—Tour and Travel Guides (does not meet living-wage criteria)
- 41-1011.00—First-Line Supervisors of Retail Sales Workers (does not meet living-wage criteria)
- 39-1022.00—First-Line Supervisors of Personal Service Workers (does not meet living-wage criteria)
- 39-1014.00—First-Line Supervisors of Entertainment and Recreation Workers, Except Gambling Services (does not meet living-wage criteria)

APPENDIX B:

SOURCES



Occupations in this report were identified using the Center of Excellence TOP-to-CIP-to-SOC crosswalk and O*Net Online.

- “TOP-CIP-SOC Crosswalk,” Centers of Excellence for Labor Market Research, <http://coeccc.net/>
- COE and EDD NAICS to Sector Crosswalk
- COE TOP to CCC Sector
- COE Occupations by CDE and CCC Sector

This report’s findings are underpinned by labor market data from the Bureau of Labor Statistics (BLS) and by U.S. Census Bureau data from Lightcast.

- Cal-PASS Plus LaunchBoard, California Community Colleges Chancellor’s Office, <https://www.calpassplus.org/LaunchBoard/Home.aspx>
- Lightcast 2022.3; QCEW Employees, Non-QCEW Employees, and Self-Employed, <https://www.economicmodeling.com/>
Lightcast occupational employment data are based on final Lightcast industry data and final Lightcast staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees worker classes) and the American Community Survey (Self-Employed and Extended Proprietors).
- Management Information Systems (MIS) Data Mart, California Community Colleges Chancellor’s Office, <https://datamart.cccco.edu/>
- Occupational Employment Statistics (OES), Bureau of Labor Statistics, <https://www.bls.gov/oes/home.htm>
- O*NET OnLine, U.S. Department of Labor/Employment and Training Administration (DOL ETA), <https://www.onetonline.org/>
- Taxonomy of Programs, 6th edition, June 2012, California Community Colleges Chancellor’s Office, <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>



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