

Labor Market Analysis for Program Recommendation:
0614.40/Animation
(Certificate of Achievement for-credit)
CVML Center of Excellence, April 2025



Summary

Program LMI Endorsement	Endorsed: All LMI Criteria Met <input type="checkbox"/>	Endorsed: Some LMI Criteria Met <input checked="" type="checkbox"/>	Not LMI Endorsed <input type="checkbox"/>
Program LMI Endorsement Criteria			
	Yes <input checked="" type="checkbox"/>		No <input type="checkbox"/>
Supply Gap:	<p>Comments: There are projected to be 159 annual job openings throughout the SCV/SML subregion for <i>animation-related occupations</i>, which are less than the 161 awards conferred by educational institutions (CC + Non-CC).</p> <p>NOTE: The community college programs listed in this report have historically trained for 12+ additional occupations. These occupations yield 550+ job openings per year in the SCV/SML subregion. Therefore, supply is overstated.</p>		
	Yes <input checked="" type="checkbox"/>		No <input type="checkbox"/>
Living Wage: (Entry-Level, 25 th)	<p>Comments: <i>Graphic Designers, Audio and Video Technicians, Sound Engineering Technicians, and Film and Video Editors</i> have an entry-level hourly wage above the SCV/SML living wage of \$16.08. <i>Special Effects Artists and Animators</i> have an entry-level hourly wage below the SCV/SML living wage of \$16.08.</p> <p>Approximately 93% of annual openings in the SCV/SML subregion have entry-level hourly wages above the SCV/SML living wage.</p>		
	Yes <input type="checkbox"/>		No <input checked="" type="checkbox"/>
Education:	<p>Comments: The Bureau of Labor Statistics (BLS) lists a bachelor's degree as the typical entry-level education for <i>Special Effects Artists and Animators; Graphic Designers; and Film and Video Editors</i>; and a postsecondary nondegree award for <i>Audio and Video Technicians; and Sound Engineering Technicians</i>. National-level educational attainment data indicates that between 24% and 41% of workers in the field have completed some college or an associate degree as their highest level of education.</p> <p>Approximately 66% of annual openings in the SCV/SML subregion typically require a bachelor's degree.</p>		
Emerging Occupation(s)			
Yes <input type="checkbox"/>		No <input checked="" type="checkbox"/>	
Comments: N/A			

The Central Valley/Mother Lode Center of Excellence for Labor Market Research (CVML COE) prepared this report to determine whether there is a supply gap in the South Central Valley/Southern Mother Lode regional labor market related to the following occupations:

- Special Effects Artists and Animators (SOC 27-1014)
- Graphic Designers (SOC 27-1024)
- Audio and Video Technicians (SOC 27-4011)
- Sound Engineering Technicians (SOC 27-4014)
- Film and Video Editors (27-4032)

Based on the available data, there does not appear to be a supply gap for the *animation-related occupations* included in this report. This is because the community college programs considered in this report also crosswalk to 12+ occupations; these occupations are not included in this report, yet they have an additional 550+ annual openings in the SCV/SML subregion. Therefore, the supply is overstated. Although 93% of annual openings in the SCV/SML subregion have entry-level hourly wages above the SCV/SML living wage, approximately 66% of annual openings in the SCV/SML subregion typically require a bachelor's degree. **Nevertheless, due to some of the regional labor market criteria being met, the COE endorses this proposed program.**

Exhibit 1 lists the occupational demand, supply, typical entry-level education, and educational attainment for the five *animation-related occupations*.

Exhibit 1: Labor Market Endorsement Summary

Occupation (SOC)	Demand (Annual Openings)	Supply (CC and Non-CC)	Entry-Level Hourly Earnings (25th percentile)	Typical Entry-Level Education	Community College Educational Attainment
Special Effects Artists and Animators (27-1014)	NCV/NML: 7 SCV/SML: 11	NCV/NML: 77 SCV/SML: 161	NCV/NML: \$6.86* SCV/SML: \$7.45*	Bachelor's degree	27%
Graphic Designers (27-1024)	NCV/NML: 53 SCV/SML: 78		NCV/NML: \$21.01 SCV/SML: \$19.57	Bachelor's degree	24%
Audio and Video Technicians (27-4011)	NCV/NML: 19 SCV/SML: 43		NCV/NML: \$18.49 SCV/SML: \$19.04	Postsecondary nondegree award	41%
Sound Engineering Technicians (27-4014)	NCV/NML: 4 SCV/SML: 11		NCV/NML: \$19.23 SCV/SML: \$21.18	Postsecondary nondegree award	41%
Film and Video Editors (27-4032)	NCV/NML: 7 SCV/SML: 16		NCV/NML: \$23.48 SCV/SML: \$19.73	Bachelor's degree	26%
Total	249	238	-	-	-

*** NOTE:** Entry-level hourly wages for Special Effects Artists and Animators can appear to fall below minimum wage due to how wage data is reported to the federal government. Annual salaries are divided by 2,080 hours (the equivalent of full-time, year-round work) regardless of how many hours were worked. For those working part-time or intermittently, this calculation can significantly understate their true hourly earnings, sometimes making them appear below minimum wage.

Demand:

- The number of jobs related to the five *animation-related occupations* is projected to increase 7% through 2028. There will be 159 annual job openings in the SCV/SML subregion.
- *Graphic Designers, Audio and Video Technicians, Sound Engineering Technicians, and Film and Video Editors* have an entry-level hourly wage above the living wage of \$16.08 in the SCV/SML subregion; *Special Effects Artists and Animators* has an entry-level hourly wage below the SCV/SML living wage of \$16.08.
- There were 158 online job postings for the five *animation-related occupations* over the past 12 months.
- The Bureau of Labor Statistics (BLS) lists a bachelor's degree as the typical entry-level education for *Special Effects Artists and Animators; Graphic Designers; and Film and Video Editors*; and a postsecondary nondegree award for *Audio and Video Technicians; and Sound Engineering Technicians*.
- National-level educational attainment data indicates that between 24% and 41% of workers in the field have completed some college or an associate degree as their highest level of education.

Supply:

- Between 2020 and 2023, there was an average of 124 awards conferred by community colleges in the SCV/SML subregion.
- Between 2019 to 2022, non-community college institutions in the SCV/SML subregion conferred an average of 37 awards in relevant programs.

Demand

Occupational Projections:

Exhibit 2 shows the annual percent change in jobs for *animation-related occupations* from 2018 through 2028. Employment in these occupations experienced a 1% decrease in 2021 (SCV/SML), compared to the 2% increase across all CA occupations. Notably, these occupations experienced a 9% increase in 2022 (SCV/SML), compared to the 5% increase across all occupations in California. Employment projections through 2028 for *animation-related occupations* are projected to remain steady in the SCV/SML subregion.

Exhibit 2: Annual Percent Change in Jobs for Animation-Related Occupations, 2018-2028

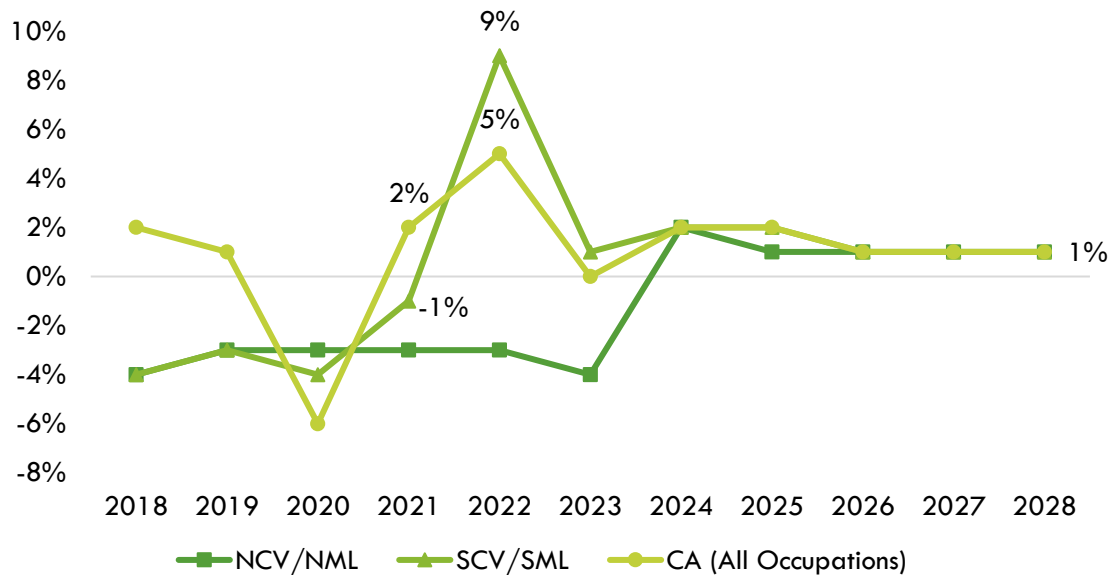


Exhibit 3 shows the five-year occupational demand projections for the five *animation-related occupations*. In the SCV/SML subregion, the number of jobs for *animation-related occupations* is projected to increase by 7% through 2028. There are projected to be 159 jobs available annually in the SCV/SML subregion.

Exhibit 3: Occupational Demand in NCV/NML, SCV/SML and CVML¹

Geography	2023 Jobs	2028 Jobs	2023-2028 Change	2023-2028 % Change	Annual Openings
NCV/NML	905	950	45	5%	90
SCV/SML	1,553	1,667	114	7%	159
CVML	2,458	2,617	159	6%	249

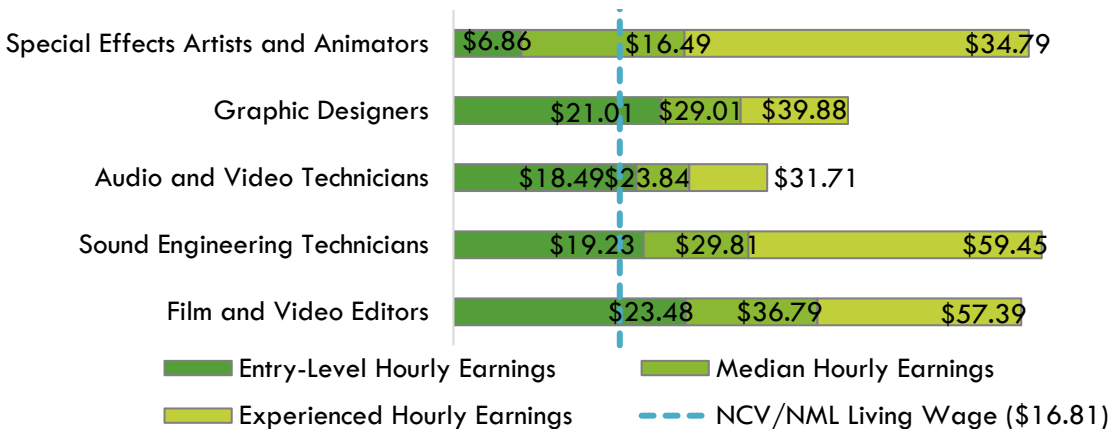
¹ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

Wages:

The labor market endorsement in this report considers the entry-level hourly wages for *animation-related occupations* as they relate to the subregions and region's living wage. NCV/NML, SCV/SML and CVML wages are included below to provide a complete analysis of the subregions and region.

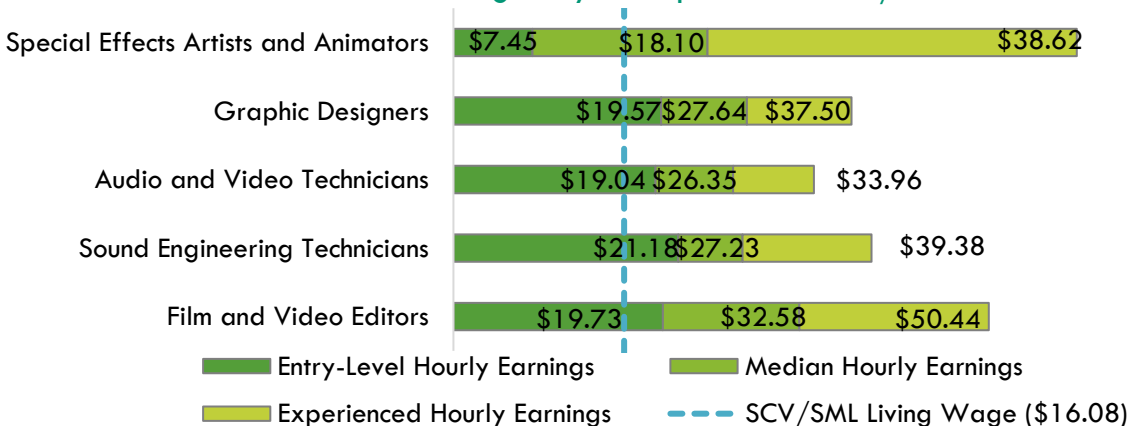
Graphic Designers, Audio and Video Technicians, Sound Engineering Technicians, and Film and Video Editors have an entry-level hourly wage above the living wage for one adult in the NCV/NML subregion (\$16.81). The occupation *Special Effects Artists and Animators* has an entry-level hourly wage below the living wage for one adult in the NCV/NML subregion. The NCV/NML average wage for these occupations is \$34.53, which is below the average statewide wage of \$43.02. Exhibit 4a shows the wage range for the five *animation-related occupations* and how they compare to the NCV/NML subregion's living wage.

Exhibit 4a: Wages by Occupation in NCV/NML



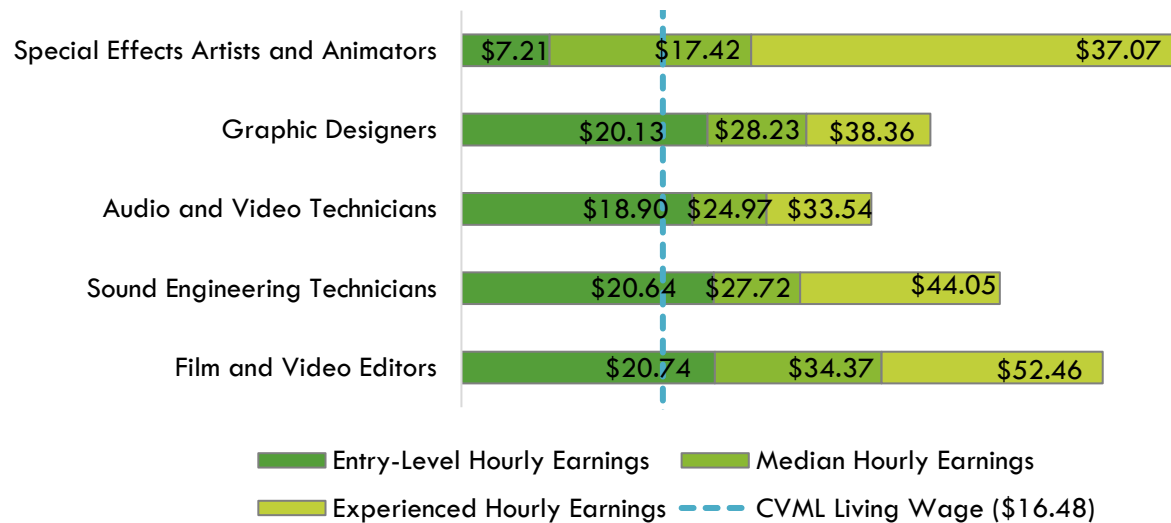
Graphic Designers, Audio and Video Technicians, Sound Engineering Technicians, and Film and Video Editors have an entry-level hourly wage above the living wage for one adult in the SCV/SML subregion (\$16.08). The occupation *Special Effects Artists and Animators* has an entry-level hourly wage below the living wage for one adult in the SCV/SML subregion. The SCV/SML average wage for these occupations is \$32.69, which is below the average statewide wage of \$43.02. Exhibit 4b shows the wage range for the five *animation-related occupations* and how they compare to the SCV/SML subregion's living wage.

Exhibit 4b: Wages by Occupation in SCV/SML



Graphic Designers, Audio and Video Technicians, Sound Engineering Technicians, and Film and Video Editors have an entry-level hourly wage above the living wage for one adult in the CVML region (\$16.48). The occupation *Special Effects Artists and Animators* has an entry-level hourly wage below the living wage for one adult in the CVML region. The CVML average wage for these occupations is \$33.37, which is below the average statewide wage of \$43.02. Exhibit 5 shows the wage range for the five *animation-related* occupations and how they compare to the CVML region's living wage.

Exhibit 5: Wages by Occupation in CVML



Job Postings:

Important Online Job Postings Data Note: Online job postings data is sourced from Lightcast, a labor market analytics firm that scrapes, collects, and organizes data from online job boards such as LinkedIn, Indeed, Glassdoor, Monster, GovernmentJobs.com, and thousands more. Lightcast uses natural language processing (NLP) to determine the related company, industry, occupation, and other information for each job posting. However, NLP has limitations that include understanding contextual words or phrases; determining differences in words that can be used as nouns, verbs, and/or adjectives; and misspellings or grammatical errors.² For these reasons, job postings could be assigned to the wrong employer, industry, or occupation within Lightcast's database.

Additionally, there are several limitations when analyzing job postings. A single job posting may not represent a single job opening, as employers may be creating a pool of candidates for future openings or hiring for multiple positions with a single posting. Additionally, not all jobs are posted online, and jobs may be filled through other methods such as internal promotion, word-of-mouth advertising, physical job boards, or a variety of other channels.

There were 158 online job postings for animation-related occupations listed in the past 12 months. Exhibit 6 shows the job postings for the five occupations in this report.

Exhibit 6: Number of Job Postings by Occupation (n=158)

Occupation	Job Postings	Percentage of Job Postings
Graphic Designers	64	41%
Audio and Video Technicians	37	23%
Film and Video Editors	29	18%
Sound Engineering Technicians	22	14%
Special Effects Artists and Animators	6	4%

² K. R. Chowdhary, Fundamentals of Artificial Intelligence (Basingstoke: Springer Nature, 2020), <https://link.springer.com/book/10.1007/978-81-322-3972-7>.

The top employers in the region for *animation-related occupations* by number of job postings, are shown in Exhibit 7.

Exhibit 7: Top Employers by Number of Job Postings (n=158)

Employer	Job Postings	Percentage of Job Postings
TikTok	5	3%
Sinclair Broadcast Group	5	3%
Sinclair & Co.	4	3%
V2X Limited	4	3%
Kern Community College District	3	2%
Barrister Global Services Network	3	2%
Deloitte	3	2%
Stardom Employment Consultants	2	1%
Parsons	2	1%
Fresno Pacific University	2	1%

The top specialized, common, and software skills for *animation-related occupations* listed by those most frequently mentioned in job postings (denoted in parentheses) are shown in Exhibit 8.

Exhibit 8: Top Skills by Number of Job Postings (n=158)

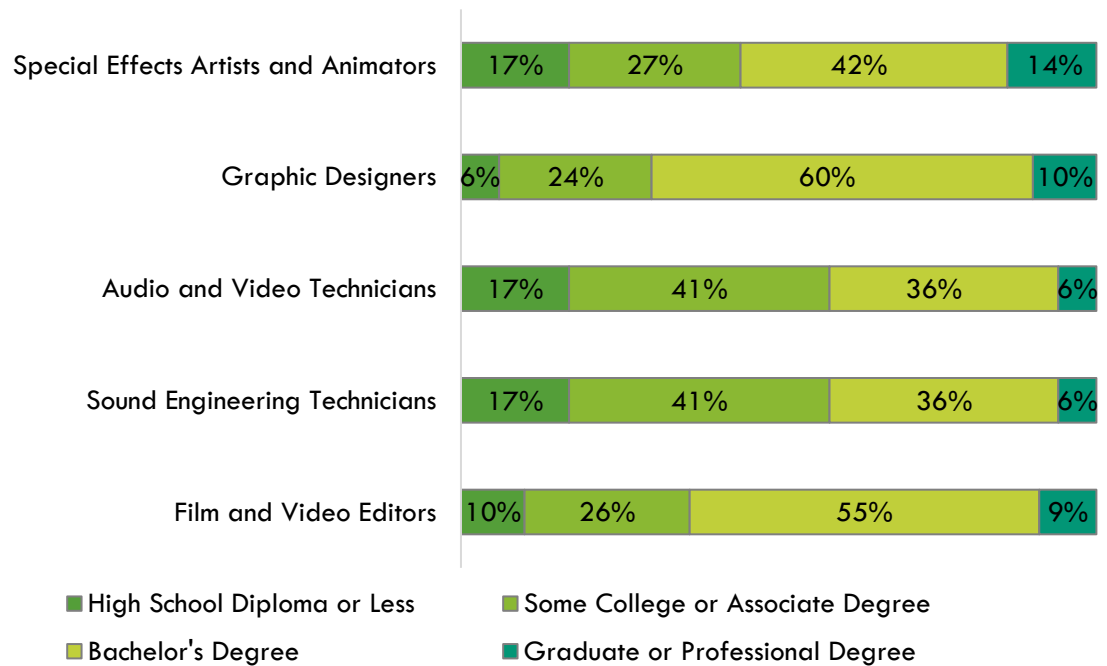
Top Specialized Skills	Top Common Skills	Top Software Skills
Adobe Photoshop (51)	Communication (69)	Adobe Photoshop (51)
Graphic Design (47)	Detail Oriented (37)	Adobe Illustrator (45)
Adobe Illustrator (45)	Ability To Meet Deadlines (33)	Adobe Creative Suite (35)
Marketing (41)	Editing (31)	Adobe InDesign (34)
Adobe Creative Suite (35)	Customer Service (25)	Adobe Premiere Pro (15)
Adobe InDesign (34)	Presentations (22)	Video Editing Software (12)
Typography (23)	Management (20)	Final Cut Pro (10)
Branding (23)	Writing (20)	Microsoft PowerPoint (10)
Marketing Materials (21)	Sincerity (19)	WordPress (10)
Project Management (20)	Interpersonal Communications (18)	HyperText Markup Language (HTML) (9)

Educational Attainment:

The Bureau of Labor Statistics (BLS) lists a bachelor's degree as the typical entry-level education for *Special Effects Artists and Animators*; *Graphic Designers*; and *Film and Video Editors*; and a postsecondary nondegree award for *Audio and Video Technicians*; and *Sound Engineering Technicians*. National-level educational attainment data indicates that between 24% and 41% of workers in the field have completed some college or an associate degree as their highest level of education. Exhibit 9 shows the educational attainment for *animation-related occupations*.

Of the 158 online job postings, 46% (equivalent to 73 postings) of cumulative job postings for *animation-related occupations* listed a minimum education requirement in the SCV/SML subregion. Of the 73 postings, 44% (32) requested a bachelor's degree.

Exhibit 9: National-level Educational Attainment for Animation-Related Occupations



Educational Supply

Community College Supply:

Exhibits 10a and 10b show the annual and three-year average number of awards conferred by community colleges in the programs that have historically trained for the occupations included in this report. The colleges with the most completions are Modesto (North), Fresno City (South), and Bakersfield (South)

Exhibit 10a: NCV/NML Community College Awards (Certificates and Degrees) 2020-21 through 2022-23

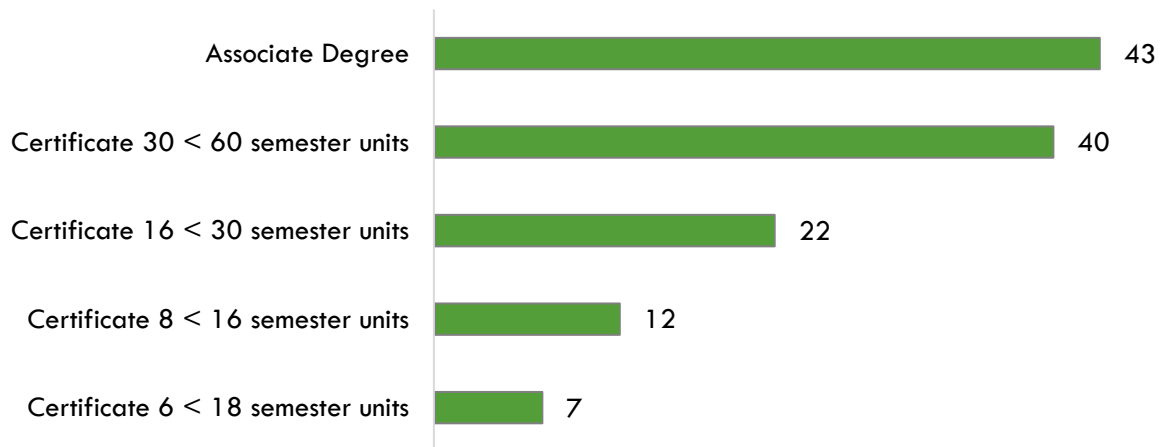
TOP Code	Program	College	2020-2021 Awards	2021-2022 Awards	2022-2023 Awards	3-Year Award Average
0604.00	Radio and Television	San Joaquin Delta	7	4	2	4
		Subtotal/Average	7	4	2	4
0614.00	Digital Media	Columbia	4	4	2	3
		Merced	-	2	7	3
		San Joaquin Delta	-	-	9	3
		Subtotal/Average	4	6	18	9
0614.10	Multimedia	San Joaquin Delta	2	3	1	2
		Subtotal/Average	2	3	1	2
0614.60	Computer Graphics and Digital Imagery	Modesto	28	33	36	32
		Subtotal/Average	28	33	36	32
0702.10	Software Applications	Modesto	-	1	1	1
		San Joaquin Delta	-	-	1	0
		Subtotal/Average	-	1	2	1
1005.00	Commercial Music	Modesto	4	9	8	7
		Subtotal/Average	4	9	8	7
1030.00	Graphic Art and Design	San Joaquin Delta	12	13	18	14
		Subtotal/Average	12	13	18	14
NCV/NML Supply Grand Total			57	69	85	70

**Exhibit 10b: SCV/SML Community College Awards (Certificates and Degrees)
2020-21 through 2022-23**

TOP Code	Program	College	2020-2021 Awards	2021-2022 Awards	2022-2023 Awards	3-Year Award Average
0612.20	Film Production	Porterville	-	-	3	1
		Subtotal/Average	-	-	3	1
0614.00	Digital Media	Cerro Coso	2	5	26	11
		Subtotal/Average	2	5	26	11
0614.10	Multimedia	Bakersfield	3	5	20	9
		Subtotal/Average	3	5	20	9
0614.30	Website Design and Development	Bakersfield	1	-	1	1
		Cerro Coso	3	10	5	6
		Clovis	2	5	4	4
		Subtotal/Average	6	15	10	10
0702.10	Software Applications	Coalinga	11	8	2	7
		Lemoore	23	20	17	20
		Subtotal/Average	34	28	19	27
1005.00	Commercial Music	Bakersfield	7	6	13	9
		Clovis	-	-	2	1
		Fresno City	4	23	23	17
		Sequoias	7	3	3	4
		Subtotal/Average	18	32	41	30
1030.00	Graphic Art and Design	Bakersfield	8	7	19	11
		Fresno City	9	16	31	19
		Sequoias	10	5	1	5
		Subtotal/Average	27	28	51	35
SCV/SML Supply Grand Total			90	113	170	124

Exhibit 11 shows the annual average community college awards by type from 2020-21 through 2022-23. Of the 124 awards conferred in the SCV/SML subregion, 35% (43) of the awards were for an associate degree.

Exhibit 11: Annual Average Community College Awards by Type, 2020-2023



Community College Student Outcomes:

Exhibit 12 shows the Strong Workforce Program (SWP) metrics for animation programs in the Kern Community College District (KCCD), the SCV/SML subregion, the CVML region, and California. Of the 5,094 animation students statewide in the 2023-24 academic year, 1% (47) attended a CVML institution.

CVML students that exited animation programs in the 2022-23 academic year had median annual earnings (\$27,414), which is slightly below the statewide median annual earnings (\$28,492). Additionally, 21% of animation students attained a living wage statewide.

Exhibit 12: Animation (0614.40) Strong Workforce Program Metrics

SWP Metric	KCCD	SCV/SML Region	CVML Region	California
SWP Students	N/A	18	47	5,094
SWP Students Who Earned 9 or More Career Education Units in the District in a Single Year	N/A	N/A	30%	35%
SWP Students Who Completed a Noncredit CTE or Workforce Preparation Course	N/A	N/A	N/A	54%
SWP Students Who Earned a Degree or Certificate or Attained Apprenticeship Journey Status	N/A	N/A	N/A	5%
SWP Students Who Transferred to a Four-Year Postsecondary Institution	N/A	N/A	0%	5%
SWP Students with a Job Closely Related to Their Field of Study	N/A	N/A	N/A	59%
Median Annual Earnings for SWP Exiting Students	N/A	N/A	\$27,414 (\$13.18)	\$28,492 (\$13.70)
Median Change in Earnings for SWP Exiting Students	N/A	N/A	N/A	30%
SWP Exiting Students Who Attained the Living Wage	N/A	N/A	N/A	21%



2023-24



2022-23



2021-22



N/A

Non-Community College Supply:

For a comprehensive regional supply analysis, it is also important to consider the supply from other institutions in the region that provide training programs for the five occupations studied in this report. Exhibits 13a and 13b show the annual and three-year average number of awards conferred by non-community college institutions in programs that have historically trained for the occupations of interest. Between 2019 and 2022, non-community colleges in the SCV/SML subregion conferred an average of 37 awards annually in related training programs. There were 7 awards conferred in the NCV/NML subregion.

Exhibit 13a: NCV/NML Subregional Non-Community College Awards, 2019-2022

CIP Code	Program	College	2019-2020 Awards	2020-2021 Awards	2021-2022 Awards	3-Year Award Average
50.0402	Commercial and Advertising Art	University of the Pacific	5	9	6	7
		Subtotal/Average	5	9	6	7
NCV/NML Supply Grand Total			5	9	6	7

Exhibit 13b: SCV/SML Subregional Non-Community College Awards, 2019-2022

CIP Code	Program	College	2019-2020 Awards	2020-2021 Awards	2021-2022 Awards	3-Year Award Average
50.0409	Graphic Design	California State University-Fresno	37	31	32	33
		Fresno Pacific University	7	2	2	4
		Subtotal/Average	44	33	34	37
SCV/SML Supply Grand Total			44	33	34	37

Appendix A: Methodology

The CVML COE prepared this report by analyzing data from occupations and education programs.

Occupational data is derived from Lightcast, a labor market analytics firm that consolidates data from the California Employment Development Department (EDD), U.S. Bureau of Labor Statistics (BLS) and other government agencies. Program supply data is drawn from two systems: Taxonomy of Programs (TOP) and Classification of Instructional Programs (CIP).

Using a TOP-SOC crosswalk, the CVML COE identified middle-skill jobs for which programs within these TOP codes train. Middle-skill jobs include:

- All occupations that require an educational requirement of some college, associate degree or apprenticeship;
- All occupations that require a bachelor's degree, but also have more than one-third of their existing labor force with an educational attainment of some college or associate degree; or
- All occupations that require a high school diploma or equivalent or no formal education, but also require short- to long-term on-the-job training where multiple community colleges have existing programs.

The CVML COE determined labor market supply for an occupation or SOC code by analyzing the number of program completers or awards in a related TOP or CIP code. The COE developed a “supply table” with this information, which is the source of the program supply data for this report. TOP code data comes from the California Community Colleges Chancellor's Office MIS Data Mart (datamart.cccco.edu) and CIP code data comes from the Integrated Postsecondary Education Data System (nces.ed.gov/ipeds/use-the-data), also known as IPEDS. TOP is a system of numerical codes used at the state level to collect and report information on California community college programs and courses throughout the state that have similar outcomes. CIP codes are a taxonomy of academic disciplines at institutions of higher education in the United States and Canada. Institutions outside of the California Community College system do not use TOP codes in their reporting systems.

Data included in this analysis represent the labor market demand for relevant positions most closely related to the proposed program as expressed by the requesting college in consultation with the CVML COE. Traditional labor market information was used to show current and projected employment based on data trends, as well as annual average awards granted by regional community colleges. Real-time labor market information captures job post advertisements for occupations relevant to the field of study which can signal demand and show what employers are looking for in potential employees but is not a perfect measure of the quantity of open positions.

All representations have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. The most recent data available at the time of the analysis was examined; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and findings; however, neither the Centers of Excellence for Labor Market Research (COE), COE host district, nor California Community Colleges Chancellor's Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.

Appendix B: Data Sources

Data Type	Source
Occupational Projections, Wages, and Job Postings	Traditional labor market information data is sourced from Lightcast, a labor market analytics firm. Lightcast occupational employment data are based on final Lightcast industry data and final Lightcast staffing patterns. Wage estimates are based on Occupational Employment Statistics and the American Community Survey. For more information, see https://lightcast.io/
Living Wage	<p>The living wage is derived from the Insight Center's California Family Needs Calculator, which measures the income necessary for an individual of family to afford basic expenses. The data assesses the cost of housing, food, childcare, health care, transportation, and taxes. For more information, see: https://selfsufficiencystandard.org/California/</p> <p>Wage figures are used by the CCCCCO to calculate the percentage of students that attained the regional living wage.</p>
Typical Education and Training Requirements, and Educational Attainment	The Bureau of Labor Statistics (BLS) provides information about education and training requirements for hundreds of occupations. BLS uses a system to assign categories for entry-level education, work experience in a related occupation, and typical on-the-job training to each occupation for which BLS publishes projections data. For more information, see https://www.bls.gov/emp/documentation/education/tech.htm
Emerging Occupation Descriptions, Additional Education Requirements, and Employer Preferences	The O*NET database includes information on skills, abilities, knowledges, work activities, and interests associated with occupations. For more information, see https://www.onetonline.org/help/online/
Educational Supply	<p>The CCCCCO Data Mart provides information about students, courses, student services, outcomes and faculty and staff. For more information, see: https://datamart.cccco.edu</p> <p>The National Center for Education Statistics (NCES) Integrated Postsecondary Integrated Data System (IPEDS) collects data on the number of postsecondary awards earned (completions). For more information, see https://nces.ed.gov/ipeds/use-the-data/survey-components/7/completions</p>
Student Metrics and Demographics	DataVista, a statewide data system supported by the California Community Colleges Chancellor's Office and hosted by Cal-PASS Plus, provides data on progress, success, employment, and earnings outcomes for California community college students. For more information, see: https://datavista.cccco.edu/

Data Type	Source
Population and Occupation Demographics	<p>The Census Bureau's American Community Survey (ACS) is the premier source for detailed population and housing information. For more information, see: https://www.census.gov/programs-surveys/acs</p> <p>Data is sourced from IPUMS USA, a database providing access to ACS and other Census Bureau data products. For more information, see: https://usa.ipums.org/usa/about.shtml</p>

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