

Labor Market Analysis: 0614.40/Animation & 0614.20 Electronic Game Design
Animation I & Game Design – Certificates (x2) requiring 16 to fewer than 30 semester units
 Los Angeles Center of Excellence, June 2023

Summary

Program Endorsement:	Endorsed: All Criteria Met <input checked="" type="checkbox"/>	Endorsed: Some Criteria Met <input type="checkbox"/>	Not Endorsed <input type="checkbox"/>
Program Endorsement Criteria			
Supply Gap:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Living Wage: (Entry-Level, 25th)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Education:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Emerging Occupation(s)			
Yes <input checked="" type="checkbox"/>		No <input type="checkbox"/>	

The Los Angeles Center of Excellence for Labor Market Research (LA COE) prepared this report to provide regional labor market supply and demand data related to four middle-skill occupations:

- **Special Effects Artists and Animators (27-1014)** Create special effects or animations using film, video, computers, or other electronic tools and media for use in products, such as computer games, movies, music videos, and commercials;¹
- **Graphic Designers (27-1024)** Design or create graphics to meet specific commercial or promotional needs, such as packaging, displays, or logos. May use a variety of mediums to achieve artistic or decorative effects;²
- **Sound Engineering Technicians (27-4014)** Assemble and operate equipment to record, synchronize, mix, edit, or reproduce sound, including music, voices, or sound effects, for theater, video, film, television, podcasts, sporting events, and other productions;³
- **Film and Video Editors (27-4032)** Edit moving images on film, video, or other media. May work with a producer or director to organize images for final production. May edit or synchronize soundtracks with images;⁴

and one emerging occupation:

- **Video Game Designers (15-1255.01)** Design core features of video games. Specify innovative game and role-play mechanics, story lines, and character biographies. Create and maintain design documentation. Guide and collaborate with production staff to produce games as designed.⁵

¹ [Special Effects Artists and Animators : U.S. Bureau of Labor Statistics \(bls.gov\)](https://www.bls.gov/occupations/special-effects-artists-and-animators)

² [Graphic Designers : U.S. Bureau of Labor Statistics \(bls.gov\)](https://www.bls.gov/occupations/graphic-designers)

³ [Sound Engineering Technicians \(bls.gov\)](https://www.bls.gov/occupations/sound-engineering-technicians)

⁴ [Film and Video Editors \(bls.gov\)](https://www.bls.gov/occupations/film-and-video-editors)

⁵ [Video Game Designers \(onetonline.org\)](https://www.onetonline.org/occupations/video-game-designers)

Middle-skill occupations typically require some postsecondary education, but less than a bachelor's degree.⁶ Although some of the occupations in this report typically require a bachelor's degree, they are considered middle-skill because approximately one-third of workers in the field have completed some college/associate degree or less education. This report is intended to help determine whether there is demand in the local labor market that is not being met by the supply from community college programs that align with the relevant occupations.

Based on the available data, there appears to be a supply gap for these middle-skill animation occupations in the region. Furthermore, entry-level wages exceed the self-sufficiency standard wage in Los Angeles County, and more than one-third of current workers in the field have completed some college/associate degree or less education. **Therefore, due to all the criteria being met, the LA COE endorses this proposed program.** Detailed reasons include:

Demand:

- **Supply Gap Criteria** – Over the next five years, **6,615 jobs are projected to be available annually** in the region due to new job growth and replacements, **which is more than the three-year average of 3,808 awards conferred** by educational institutions in the region.
- **Living Wage Criteria** – Within Los Angeles County, all four occupations have **entry-level wages above the self-sufficiency standard hourly wage** (\$18.10/hour).⁷
- **Educational Criteria** – Within the greater LA/OC region, **90% of the annual job openings** for occupations related to animation **typically require a bachelor's degree.**
 - However, the national-level educational attainment data indicates **between 33% and 54% of workers in the field have completed some college/associate degree or less education.**

Supply:

- There are **26 community colleges** in the greater LA/OC region that issue awards related to animation, conferring an average of **1,280 awards annually** between 2018 and 2021.
- Between 2017 and 2020, there was an average of **2,528 awards conferred annually** in related training programs by non-community college institutions throughout the greater LA/OC region.

Occupational Demand

Exhibit 1 shows the five-year occupational demand projections for these middle-skill animation occupations. In the greater Los Angeles/Orange County region, the number of jobs related to

⁶ The COE classifies middle-skill jobs as the following:

- 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.

⁷ Self-Sufficiency Standard wage data was pulled from The Self-Sufficiency Standard Tool for California. For more information, visit: <http://selfsufficiencystandard.org/california>.

these occupations is projected to increase by 14% through 2026. There will be more than 6,600 job openings per year through 2026 due to job growth and replacements.

Exhibit 1: Occupational demand in Los Angeles and Orange Counties⁸

Geography	2021 Jobs	2026 Jobs	2021-2026 Change	2021-2026 % Change	Annual Openings
Los Angeles	46,057	52,923	6,866	15%	6,136
Orange	4,701	4,821	120	3%	479
Total	50,758	57,744	6,986	14%	6,615

Wages

The labor market endorsement in this report considers the entry-level hourly wages for these middle-skill animation occupations in Los Angeles County as they relate to the county's self-sufficiency standard wage. Orange County wages are included below in order to provide a complete analysis of the greater LA/OC region. Detailed wage information, by county, is included in Appendix A.

Los Angeles County

All four occupations in this report have entry-level wages above the self-sufficiency standard wage for one adult (\$18.10 in Los Angeles County). Typical entry-level hourly wages are in a range between \$18.30 and \$26.86. Experienced workers can expect to earn wages between \$40.32 and \$50.36.

Exhibit 2: Earnings for Occupations in LA County

Occupation	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)	Median Annual Earnings*
Special Effects Artists and Animators (27-1014)	\$20.30	\$34.14	\$47.50	\$71,000
Graphic Designers (27-1024)	\$18.30	\$27.79	\$40.32	\$57,800
Sound Engineering Technicians (27-4014)	\$26.86	\$30.85	\$45.27	\$64,200
Film and Video Editors (27-4032)	\$21.53	\$30.29	\$50.36	\$63,000

*rounded to the nearest \$100

Orange County

The majority (80%) of annual openings for middle-skill animation occupations have entry-level wages above the self-sufficiency standard wage for one adult (\$20.63 in Orange County). Typical entry-level hourly wages are in a range between \$19.09 and \$25.92. Two occupations in this report have entry-level wages above the county's self-sufficiency standard wage: *film and video editors* (\$20.00), and *special effects artists and animators* (\$19.09). Experienced workers can

⁸ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

expect to earn wages between \$35.76 and \$46.92, which are higher than the self-sufficiency standard.

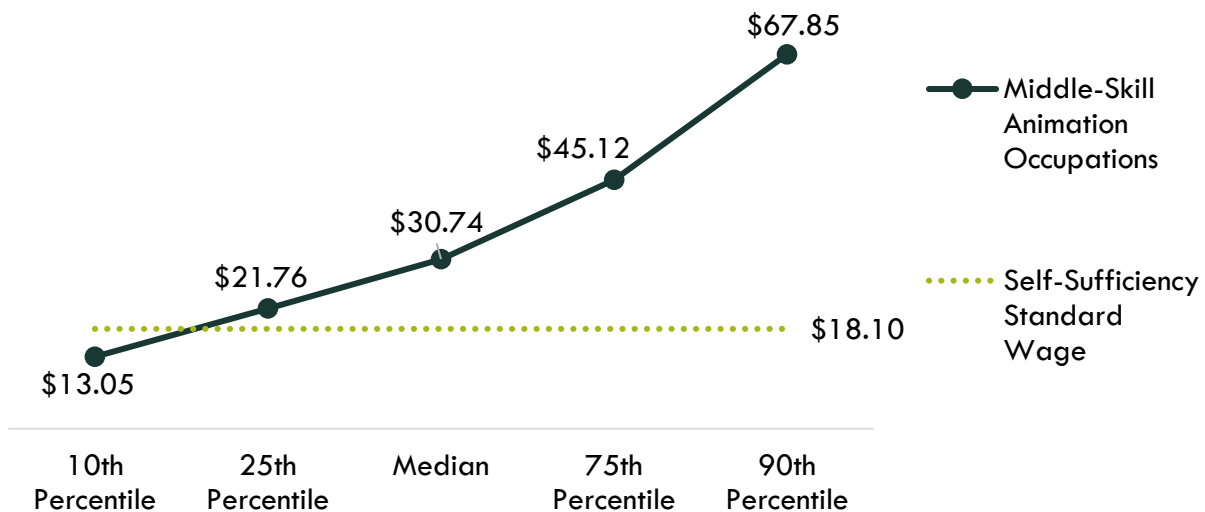
Exhibit 3: Earnings for Occupations in Orange County

Occupation	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)	Median Annual Earnings*
Special Effects Artists and Animators (27-1014)	\$19.09	\$31.88	\$43.89	\$66,300
Graphic Designers (27-1024)	\$22.34	\$29.03	\$37.93	\$60,400
Sound Engineering Technicians (27-4014)	\$25.92	\$27.65	\$35.76	\$57,500
Film and Video Editors (27-4032)	\$20.00	\$28.04	\$46.92	\$58,300

*rounded to the nearest \$100

On average, the entry-level earnings for the occupations in this report are \$21.76; this is above the living wage for one single adult in Los Angeles County (\$18.10). Exhibit 4 shows the average hourly wage for the occupations in this report, from entry-level to experienced workers.

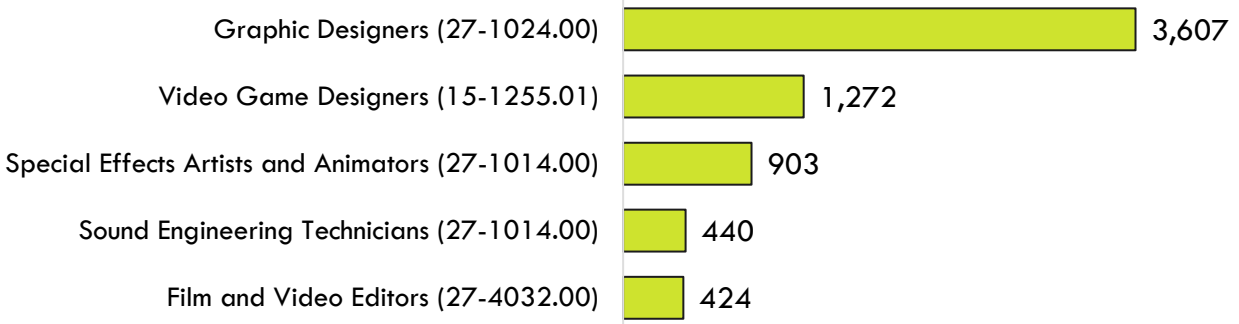
Exhibit 4: Average Hourly Earnings for Middle-Skill Animation Occupations in LA/OC



Job Postings

There were 6,646 online job postings related to animation listed in the past 12 months. Exhibit 5 displays the number of job postings by occupation. The majority of job postings (54%) were for *graphic designers*, followed by *video game designers* (19%) and *special effects artists and animators*. The highest number of job postings were for graphic designers, video editors, content creators, visual designers, and VFX artists. The top skills were Adobe Photoshop, graphic design, Adobe Illustrator, marketing, and Adobe InDesign. The top three employers, by number of job postings, in the region were Canteen Vending, VirtualVocations (staffing company), and Riot Games.

Exhibit 5: Job postings by occupation (last 12 months)



Educational Attainment

The Bureau of Labor Statistics (BLS) lists the following typical entry-level education levels for the occupations in this report:

- **Bachelor’s degree:** *Special effects artists and animators; graphic designers; film and video editors*
- **Postsecondary non-degree award:** *Sound engineering technicians*

In the greater LA/OC region, the majority of annual job openings (90%) typically require a bachelor’s degree. However, the national-level educational attainment data indicates between 33% and 54% of workers in the field have completed some college/associate degree or less education. Of the 42% of animation job postings listing a minimum education requirement in the greater Los Angeles/Orange County region, 12% (332) requested high school or vocational training, 10% (270) requested an associate degree, and 78% (2,201) requested a bachelor’s degree.

Educational Supply

Community College Supply

Exhibit 6 shows the annual and three-year average number of awards conferred by community colleges in programs that have historically trained for the occupations of interest. The colleges with the most completions in the region are Saddleback, Santa Monica and Mt. San Antonio.

Exhibit 6: Regional community college awards (certificates and degrees), 2018-2021

TOP	Program	College	2018-19 Awards	2019-20 Awards	2020-21 Awards	3-Year Average
0604.00	Radio and Television	LA Valley	16	17	12	15
		Long Beach	4	2	2	3
		Mt San Antonio	2	-	-	1
		Santa Monica	8	29	16	18
		LA Subtotal	30	48	30	36
		Fullerton	3	-	2	2
		Saddleback	206	136	98	147

TOP	Program	College	2018-19 Awards	2019-20 Awards	2020-21 Awards	3-Year Average
		Santa Ana	5	-	-	2
		OC Subtotal	214	136	100	150
		Supply Subtotal/Average	244	184	130	186
0604.20	Television (including combined TV/Film/Video)	Cerritos	-	-	5	2
		El Camino	20	22	27	23
		Glendale	8	14	17	13
		LA City	39	34	45	39
		LA Pierce	11	26	29	22
		LA Valley	29	31	42	34
		Long Beach	39	35	42	39
		Mt San Antonio	48	54	34	45
		Pasadena	25	45	65	45
		LA Subtotal	219	261	306	262
		Cypress	3	15	16	11
		Fullerton	56	48	52	52
		Orange Coast	19	40	22	27
		Saddleback	2	2	-	1
		Santa Ana	14	17	6	12
		OC Subtotal	94	122	96	104
		Supply Subtotal/Average	313	383	402	366
0612.20	Film Production	Cerritos	10	8	11	10
		LA City	61	62	45	56
		LA Valley	42	31	35	36
		Long Beach	3	-	-	1
		Santa Monica	40	59	41	47
		West LA	33	7	28	23
		LA Subtotal	189	167	160	172
		Orange Coast	49	48	26	41
		Saddleback	7	3	-	3
		OC Subtotal	56	51	26	44
		Supply Subtotal/Average	245	218	186	216
0614.00	Digital Media	Glendale	-	1	-	0
		LA Mission	1	4	5	3
		LA Trade-Tech	19	11	18	16
		Pasadena	-	-	3	1
		Rio Hondo	-	2	1	1

TOP	Program	College	2018-19 Awards	2019-20 Awards	2020-21 Awards	3-Year Average
		LA Subtotal	20	18	27	22
		Coastline	3	-	3	2
		Cypress	-	-	2	1
		Golden West	10	10	7	9
		Irvine	9	1	6	5
		Saddleback	-	-	1	0
		Santa Ana	-	1	6	2
		OC Subtotal	22	12	25	20
		Supply Subtotal/Average	42	30	52	41
0614.20	Electronic Game Design	Pasadena	-	1	1	1
		LA Subtotal	-	1	1	1
		Golden West	3	2	-	2
		OC Subtotal	3	2	-	2
		Supply Subtotal/Average	3	3	1	2
0614.40	Animation	Cerritos	7	13	4	8
		East LA	14	12	12	13
		El Camino	5	5	4	5
		Glendale	2	6	2	3
		LA City	-	-	1	0
		LA Mission	8	11	5	8
		Mt San Antonio	67	58	43	56
		Pasadena	2	1	6	3
		Rio Hondo	11	9	9	10
		Santa Monica	9	19	69	32
		LA Subtotal	125	134	155	138
		Coastline	-	-	1	0
		Cypress	7	1	-	3
		Fullerton	-	1	-	0
		Irvine	1	1	3	2
		Orange Coast	-	1	-	0
		Santa Ana	15	-	-	5
		OC Subtotal	23	4	4	10
		Supply Subtotal/Average	148	138	159	148
0614.60	Computer Graphics and Digital Imagery	Citrus	13	12	26	17
		East LA	16	1	2	6
		Mt San Antonio	-	-	1	0

TOP	Program	College	2018-19 Awards	2019-20 Awards	2020-21 Awards	3-Year Average
		LA Subtotal	29	13	29	24
		Coastline	5	1	-	2
		Cypress	7	5	-	4
		Fullerton	2	1	3	2
		N. Orange Adult	9	3	-	4
		Orange Coast	38	21	31	30
		Saddleback	4	4	2	3
		Santa Ana	-	11	3	5
		OC Subtotal	65	46	39	50
Supply Subtotal/Average			94	59	68	74
1030.00	Graphic Art and Design	Cerritos	11	11	14	12
		East LA	18	3	8	10
		El Camino	-	1	-	0
		Glendale	6	4	9	6
		LA City	6	22	8	12
		LA Pierce	22	15	13	17
		LA Valley	2	5	1	3
		Long Beach	1	2	8	4
		Mt San Antonio	15	11	20	15
		Pasadena	9	7	15	10
		Rio Hondo	30	20	28	26
		Santa Monica	31	50	43	41
		LA Subtotal	151	151	167	156
		Cypress	-	-	4	1
		Fullerton	12	12	14	13
		Golden West	57	32	20	36
		Irvine	5	16	21	14
		Saddleback	23	15	19	19
		Santa Ana	4	3	3	3
		Santiago Canyon	5	1	4	3
		OC Subtotal	106	79	85	90
Supply Subtotal/Average			257	230	252	246
Supply Total/Average			1,346	1,245	1,250	1,280

Non-Community College Supply

For a comprehensive regional supply analysis, it is important to consider the supply from other institutions in the region that provide training programs for middle-skill animation occupations. Exhibit 7 shows the annual and three-year average number of awards conferred by these institutions in relevant programs. Due to different data collection periods, the most recent three-year period of available data is from 2017 to 2020. Between 2017 and 2020, non-community college institutions in the region conferred an average of 2,528 bachelor's and sub-baccalaureate awards. Sub-baccalaureate awards include associate degrees, postsecondary awards, and other academic awards that typically take fewer than four years to complete. Bachelor's degrees are included in this report, since three of the four occupations typically require a bachelor's degree.

Exhibit 7: Regional non-community college awards, 2017-2020

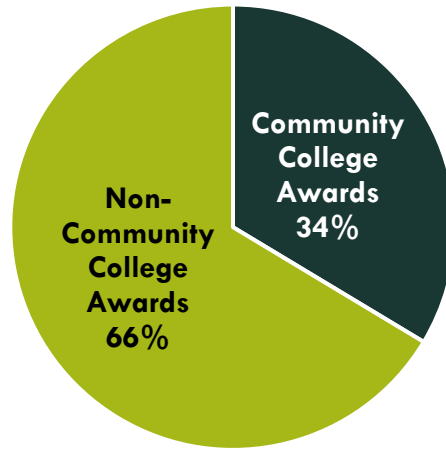
CIP	Program	Institution	2017-18 Awards	2018-19 Awards	2019-20 Awards	3-Year Average
09.0701	Radio and Television	CSU-Fullerton	174	205	189	189
		CSU-Long Beach	-	1	-	0
		CSU-Los Angeles	174	158	154	162
		CSU-Northridge	414	399	396	403
		Pepperdine University	26	25	20	24
		University of La Verne	11	22	7	13
09.0702	Digital Communication and Media/Multimedia	CSU-Dominguez Hills	41	58	41	47
		Fremont College	1	1	1	1
		Marymount CA Univ.	-	3	10	4
		Vanguard University of Southern California	7	8	2	6
10.0301	Graphic Communications, General	CSU-Los Angeles	5	10	9	8
10.0304	Animation, Interactive Technology, Video Graphics, and Special Effects	Art Center College of Design	9	18	36	21
		California Institute of the Arts	-	-	39	13
		Chapman University	-	-	20	7
		Gnomon	36	40	66	47
		Laguna College of Art and Design	11	37	33	27
		LA Film School	44	51	47	47
		Loyola Marymount University	20	15	21	19
		New York Film Academy	14	19	24	19

CIP	Program	Institution	2017-18 Awards	2018-19 Awards	2019-20 Awards	3-Year Average
11.0803	Computer Graphics	ABC Adult School	5	4	4	4
		LA Pacific College	-	33	-	11
11.0899	Computer Software and Media Applications, Other	Art Center College of Design	8	12	20	13
		California Institute of the Arts	-	7	8	5
		Learnet Academy	14	-	10	8
50.0102	Digital Arts	Los Angeles Academy of Figurative Art	-	3	4	2
		LA Pacific College	-	-	4	1
		Marymount CA Univ.	17	15	3	12
		Otis College of Art and Design	92	69	48	70
		University of Southern California	16	14	15	15
		Woodbury University	4	1	2	2
50.0409	Graphic Design	Art Center College of Design	50	73	67	63
		California Institute of the Arts	11	9	12	11
		CA State Poly Univ.-Pomona	128	92	89	103
		Chapman University	19	17	27	21
		Concordia Univ.-Irvine	9	7	10	9
		Fashion Institute of Design & Merch.-LA	36	38	38	37
		Laguna College of Art and Design	21	24	25	23
		LA Film School	-	3	28	10
		LA Pacific College	-	1	8	3
		New York Film Academy	3	3	-	2
		Otis College of Art and Design	-	1	-	0
		Platt College-LA	3	-	-	1
50.0411	Game and Interactive Media Design	Chapman University	-	1	-	0
		Laguna College of Art and Design	29	20	34	28
		LA Film School	27	9	-	12

CIP	Program	Institution	2017-18 Awards	2018-19 Awards	2019-20 Awards	3-Year Average
		New York Film Academy	4	4	7	5
		UC-Irvine	-	-	-	-
		USC	23	30	28	27
		Woodbury University	1	3	6	3
50.0602	Cinematography and Film/Video Production	Art Center College of Design	28	18	18	21
		Biola University	42	62	56	53
		California Institute of the Arts	10	11	14	12
		Chapman University	160	174	146	160
		Fashion Institute of Design & Merch.-LA	13	14	12	13
		LA Film School	145	220	245	203
		Loyola Marymount University	71	69	79	73
		Mount Saint Mary's University	7	11	14	11
		New York Film Academy	230	205	215	217
		University of La Verne	-	-	-	-
		USC	100	104	114	106
		Woodbury University	16	13	15	15
		50.0699	Film/Video and Photographic Arts, Other	CA Institute of the Arts	45	41
LA Film School	30			34	49	38
Woodbury University	18			24	10	17
Supply Total/Average			2,422	2,563	2,599	2,528

Exhibit 8 shows the proportion of community college awards conferred in LA/OC compared to the number of non-community college awards for the programs in this report. Two-thirds of awards conferred in these programs are awarded by non-community colleges in the LA/OC region.

Exhibit 8: Community College Awards Compared to Non-Community College Awards in LA/OC Region, 3-Year Average



Appendix A: Occupational demand and wage data by county

Exhibit 9. Los Angeles County

Occupation (SOC)	2021 Jobs	2026 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Special Effects Artists and Animators (27-1014)	7,148	8,526	1,378	19%	1,111	\$20.30	\$34.14	\$47.50
Graphic Designers (27-1024)	21,158	22,618	1,460	7%	2,275	\$18.30	\$27.79	\$40.32
Sound Engineering Technicians (27-4014)	4,507	5,340	832	18%	641	\$26.86	\$30.85	\$45.27
Film and Video Editors (27-4032)	13,244	16,439	3,196	24%	2,108	\$21.53	\$30.29	\$50.36
Total	46,057	52,923	6,866	15%	6,136	-	-	-

Exhibit 10. Orange County

Occupation (SOC)	2021 Jobs	2026 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75th Percentile)
Special Effects Artists and Animators (27-1014)	539	550	12	2%	60	\$19.09	\$31.88	\$43.89
Graphic Designers (27-1024)	3,658	3,696	38	1%	353	\$22.34	\$29.03	\$37.93
Sound Engineering Technicians (27-4014)	220	255	35	16%	30	\$25.92	\$27.65	\$35.76
Film and Video Editors (27-4032)	284	320	36	13%	36	\$20.00	\$28.04	\$46.92
Total	4,701	4,821	120	3%	479	-	-	-

Exhibit 11. Los Angeles and Orange Counties

Occupation (SOC)	2021 Jobs	2026 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	% Age 55 and older*	Typical Entry-Level Education
Special Effects Artists and Animators (27-1014)	7,687	9,076	1,390	18%	7,687	27%	Bachelor's degree
Graphic Designers (27-1024)	24,816	26,313	1,498	6%	24,816	23%	Bachelor's degree
Sound Engineering Technicians (27-4014)	4,728	5,595	867	18%	4,728	19%	Postsecondary non-degree award
Film and Video Editors (27-4032)	13,528	16,759	3,232	24%	13,528	22%	Bachelor's degree
Total	50,758	57,744	6,986	14%	6,615	-	-

*The average percentage of workers age 55 and older across all occupations in the greater LA/OC region is 27%. These occupations have a smaller share of older workers, which typically indicates fewer replacements needs to offset the amount of impending retirements.

Appendix B: Sources

- O*NET Online
- Lightcast (formerly Emsi)
- Bureau of Labor Statistics (BLS)
- California Employment Development Department, Labor Market Information Division, OES
- California Community Colleges Chancellor's Office Management Information Systems (MIS)
- Self-Sufficiency Standard at the Center for Women's Welfare, University of Washington
- Chancellor's Office Curriculum Inventory (COCI 2.0)

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