

Labor Market Analysis: 1006.00 – Technical Theater

Technical Theater (A.A., A.A.-T & Certificate)

Los Angeles Center of Excellence, October 2022

Summary

Program Endorsement:	Endorsed: All Criteria Met <input type="checkbox"/>	Endorsed: Some Criteria Met <input checked="" type="checkbox"/>	Not Endorsed <input type="checkbox"/>
Program Endorsement Criteria			
Supply Gap:	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/> (See comments below)	
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 type="checkbox"/>		No <input checked="" 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:

- **Set and Exhibit Designers (27-1027)** Design special exhibits and sets for film, video, television, and theater productions. May study scripts, confer with directors, and conduct research to determine appropriate architectural styles.¹
- **Audio and Video Technicians (27-4011)** Set up, maintain, and dismantle audio and video equipment, such as microphones, sound speakers, connecting wires and cables, sound and mixing boards, video cameras, video monitors and servers, and related electronic equipment for live or recorded events, such as concerts, meetings, conventions, presentations, podcasts, news conferences, and sporting events.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
- **Lighting Technicians (27-4015)** Set up, maintain, and dismantle light fixtures, lighting control devices, and the associated lighting electrical and rigging equipment used for photography, television, film, video, and live productions. May focus or operate light fixtures, or attach color filters or other lighting accessories.⁴

¹ [Set and Exhibit Designers \(bls.gov\)](#)

² [Audio and Video Technicians \(bls.gov\)](#)

³ [Sound Engineering Technicians \(bls.gov\)](#)

⁴ [Lighting Technicians \(bls.gov\)](#)

Middle-skill occupations typically require some postsecondary education, but less than a bachelor's degree.⁵ Although the occupation, *set and exhibit designers* typically requires a bachelor's degree, it is considered middle-skill because approximately one-third of workers in the field have completed some college or an associate degree. 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 does not appear to be a clear supply gap for the occupations of interest. Upon closer inspection, the supply is within the COE's acceptable margin (25% over or under the number of annual openings) and is therefore considered "supply met" rather than a "supply gap." While this program does not meet the traditional supply/demand endorsement criteria, there may be demand for these workers from local employers that is not reflected in traditional labor market data. For this reason, real-time labor market data in the form of employer job postings is included in this report as well – to provide a more nuanced view of the regional job market for these middle-skill occupations related to technical theater. In addition, the majority of annual openings in Los Angeles County have entry-level wages that exceed the self-sufficiency standard wage, as well as list a postsecondary non-degree award as the typical entry-level education. Therefore, **due to some of the criteria being met, the LA COE endorses this proposed program.** Detailed reasons include:

Demand:

- **Supply Gap Criteria** – Over the next five years, **1,681 jobs are projected to be available annually** in the region due to new job growth and replacements, **which is less than the three-year average of 1,974 awards conferred** by educational institutions in the region.
 - Although there are more awards conferred than job openings, the data suggests that the **demand has been met for these occupations within the LA/OC region** since the three-year average number of awards (supply) is within an acceptable margin of annual job openings (demand).
 - Over the past 12 months, there were **2,084 online job postings related to the occupations in this report.** The highest number of job postings were for audio visual technicians, audio engineer, mixing technicians, lighting technicians, and entertainment stage technicians.
- **Living Wage Criteria** – Within Los Angeles County, the **majority (87%) of annual job openings** for these technical theater occupations have **entry-level wages above the self-sufficiency standard hourly wage (\$18.10/hour).**⁶

⁵ 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.

⁶ Self-Sufficiency Standard wage data was pulled from The Self-Sufficiency Standard Tool for California. For more information, visit: <http://selfsufficiencystandard.org/california>.

- **Educational Criteria** – Within the greater LA/OC region, **80% of the annual job openings** for occupations related to technical theater **typically require a postsecondary non-degree award**.
 - Furthermore, the national-level educational attainment data indicates **between 29% and 38% of workers in the field have completed some college or an associate degree**.

Supply:

- There are **23 community colleges** in the greater LA/OC region that issue awards for programs that train for the technical theater occupations in this report, conferring an average of **1,138 awards annually** between 2018 and 2021.
- Between 2017 and 2020, there was an average of **836 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 technical theater occupations. In the greater Los Angeles/Orange County region, the number of jobs related to these occupations is projected to increase by 8% through 2026. There will be nearly 1,700 job openings per year through 2026 due to job growth and replacements.

Exhibit 1: Occupational demand in Los Angeles and Orange Counties⁷

Geography	2021 Jobs	2026 Jobs	2021-2026 Change	2021-2026 % Change	Annual Openings
Los Angeles	12,762	13,903	1,141	9%	1,524
Orange	1,506	1,537	30	2%	157
Total	14,269	15,440	1,171	8%	1,681

Wages

The labor market endorsement in this report considers the entry-level hourly wages for these technical theater 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.

⁷ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

Los Angeles County—The majority (87%) of annual openings for technical theater occupations 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 \$14.88 and \$27.59. Only one occupation in this report has entry-level wages below the self-sufficiency standard wage: *set and exhibit designers* (\$14.88). Experienced workers can expect to earn wages between \$31.89 and \$42.25, which are higher than the self-sufficiency standard.

Exhibit 2: Hourly Earnings for Occupations in LA County

Occupation	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Set and Exhibit Designers (27-1027)	\$14.88	\$25.01	\$36.99
Audio and Video Technicians (27-4011)	\$21.33	\$28.41	\$40.42
Sound Engineering Technicians (27-4014)	\$27.59	\$30.74	\$42.25
Lighting Technicians (27-4015)	\$19.50	\$28.13	\$31.89

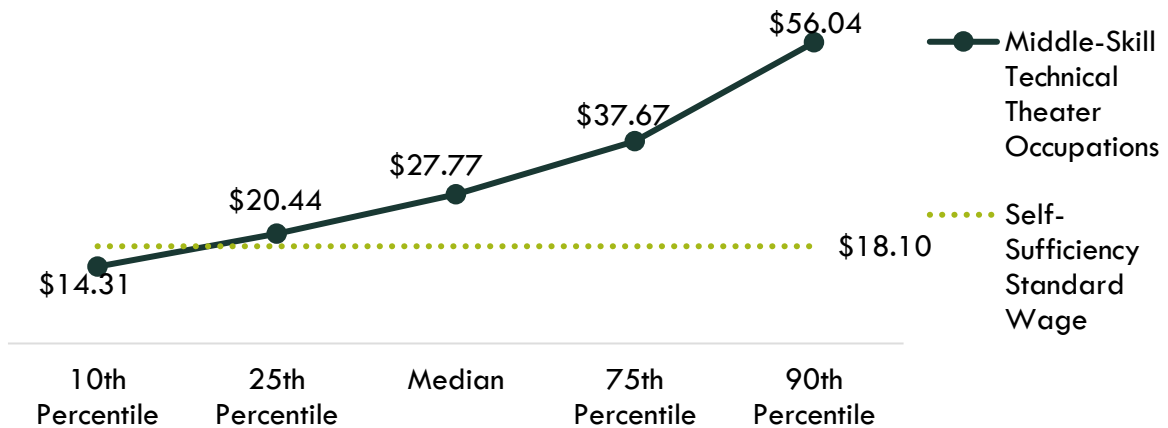
Orange County— The majority (77%) of annual openings for these technical theater occupations have entry-level wages below the self-sufficiency standard wage for one adult (\$20.63 in Orange County). Typical entry-level hourly wages are in a range between \$11.64 and \$24.51. Only one occupation in this report has entry-level wages above the county’s self-sufficiency standard: *sound engineering technicians* (\$24.51). Experienced workers can expect to earn wages between \$28.33 and \$40.87, which are higher than the self-sufficiency standard.

Exhibit 3: Hourly Earnings for Occupations in Orange County

Occupation	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Set and Exhibit Designers (27-1027)	\$11.64	\$22.17	\$40.87
Audio and Video Technicians (27-4011)	\$19.90	\$26.57	\$37.40
Sound Engineering Technicians (27-4014)	\$24.51	\$27.79	\$38.95
Lighting Technicians (27-4015)	\$17.33	\$24.87	\$28.33

On average, the entry-level earnings for the occupations in this report are \$20.44; this is above the living wage for one single adult in Los Angeles County (\$18.10). Exhibit 4 shows the average wage for the occupations in this report, from entry-level to experienced workers.

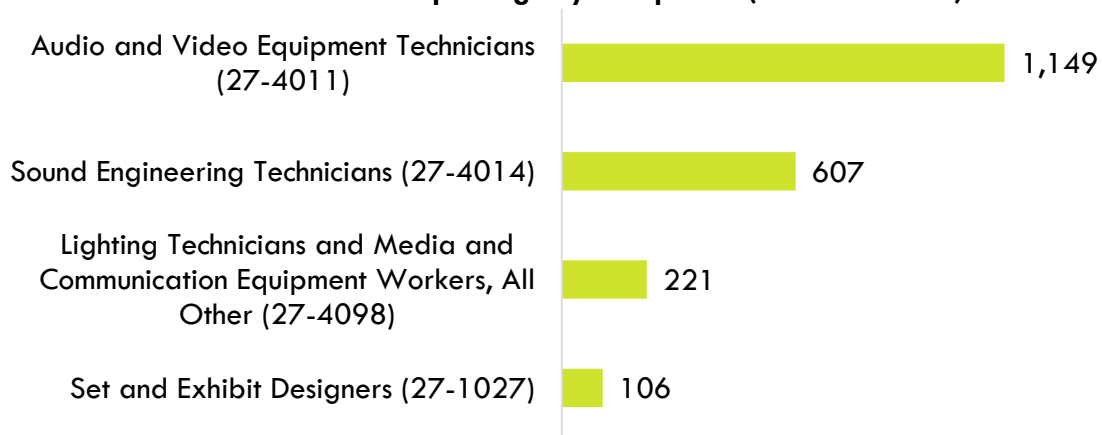
Exhibit 4: Average Hourly Earnings for Middle-Skill Technical Theater Occupations in LA/OC



Job Postings

There were 2,084 online job postings related to technical theater occupations listed in the past 12 months. Exhibit 5 displays the number of job postings by occupation. The majority of job postings (55%) were for *audio and video equipment technicians*, followed by *sound engineering technicians* (29%) and *lighting technicians and media and communication equipment workers, all other* (11%). The highest number of job postings were for audio visual technicians, audio engineer, mixing technicians, lighting technicians, and entertainment stage technicians. The top skills were operations management, broadcast industry knowledge, audio/visual knowledge, audio mixing, and software issue resolution. The top three employers, by number of job postings, in the region were: Encore Global, Disney, and Live Nation Worldwide.

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:** *Set and exhibit designers*
- **Postsecondary non-degree award:** *Audio and video technicians; sound engineering technicians*
- **High school diploma or equivalent:** *Lighting technicians*

In the greater LA/OC region, the majority of annual job openings (80%) typically require a postsecondary non-degree award. Furthermore, the national-level educational attainment data indicates between 29% and 38% of workers in the field have completed some college or an associate degree. Of the 46% of technical theater job postings listing a minimum education requirement in the greater Los Angeles/Orange County region, 63% (598) requested high school or vocational training, 10% (92) requested an associate degree, and 27% (261) 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 LA City, Saddleback, and Orange Coast.

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
		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

TOP	Program	College	2018-19 Awards	2019-20 Awards	2020-21 Awards	3-Year Average
		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
1005.00	Commercial Music	Cerritos	3	5	8	5
		Citrus	58	51	51	53
		Compton	-	-	1	0
		East LA	-	-	2	1
		Glendale	-	-	2	1
		LA City	313	129	12	151
		LA Harbor	6	4	-	3
		LA Valley	7	10	6	8
		Long Beach	-	-	1	0
		Pasadena	-	-	2	1
		LA Subtotal	387	199	85	224
		Cypress	9	17	10	12

TOP	Program	College	2018-19 Awards	2019-20 Awards	2020-21 Awards	3-Year Average		
		Fullerton	5	10	8	8		
		Irvine	1	1	-	1		
		Orange Coast	7	8	1	5		
		Saddleback	7	9	61	26		
		Santa Ana	7	4	7	6		
		OC Subtotal	36	49	87	57		
Supply Subtotal/Average			423	248	172	281		
1006.00	Technical Theater	Citrus	5	8	7	7		
		East LA	7	15	6	9		
		Glendale	-	1	-	0		
		LA City	38	1	2	14		
		LA Pierce	12	13	7	11		
		LA Valley	4	2	1	2		
		Mt San Antonio	1	-	-	0		
		Pasadena	4	2	2	3		
		Santa Monica	17	17	6	13		
		LA Subtotal	88	59	31	59		
		Cypress	3	3	7	4		
		Fullerton	11	4	33	16		
		Golden West	-	1	-	0		
		Irvine	3	3	4	3		
		Orange Coast	1	-	-	0		
		Saddleback	-	2	4	2		
		Santa Ana	1	3	6	3		
		OC Subtotal	19	16	54	30		
		Supply Subtotal/Average			107	75	85	89
		Supply Total/Average			1,332	1,108	976	1,138

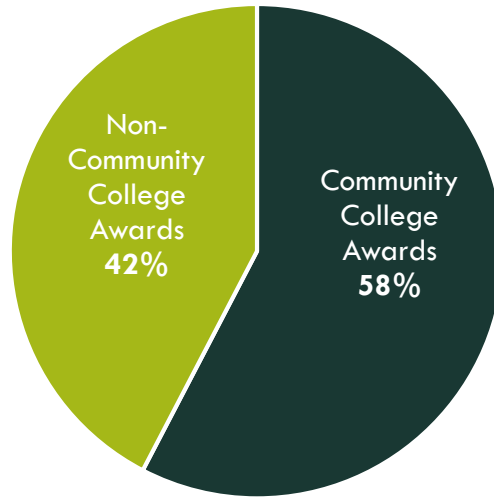
Non-Community College Supply—For a comprehensive regional supply analysis, it is important to consider the supply from other institutions in the region that provide training programs for technical theater occupations. Exhibit 7 shows the annual and three-year average number of awards conferred by these 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 836 awards.

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

CIP	Program	Institution	2017-18 Awards	2018-19 Awards	2019-20 Awards	3-Year Average
10.0202	Radio and Television Broadcasting Technology/Technician	East San Gabriel Valley ROP	18	1	-	6
		Hollywood Cultural College	-	-	20	7
10.0203	Recording Arts Technology/Technician	Los Angeles Film School	139	54	-	64
		Musicians Institute	113	115	73	100
50.0602	Cinematography and Film/Video Production	Fashion Institute of Design & Merchandising-LA	7	9	12	9
		Los Angeles Film School	90	89	100	93
		New York Film Academy	121	113	109	114
50.0913	Music Technology	Los Angeles College of Music	10	3	8	7
		Los Angeles Film School	329	416	474	406
50.1003	Music Management	Los Angeles College of Music	-	2	5	2
		Musicians Institute	25	30	21	25
Supply Total/Average			852	832	822	836

Exhibit 8 shows the relationship between the number of community college awards conferred in LA/OC versus the number of non-community college awards for the programs in this report. More than half of awards conferred in these programs is awarded by 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)
Set and Exhibit Designers (27-1027)	1,977	2,058	80	4%	201	\$14.88	\$25.01	\$36.99
Audio and Video Technicians (27-4011)	6,043	6,726	684	11%	762	\$21.33	\$28.41	\$40.42
Sound Engineering Technicians (27-4014)	3,915	4,243	328	8%	467	\$27.59	\$30.74	\$42.25
Lighting Technicians (27-4015)	827	876	49	6%	93	\$19.50	\$28.13	\$31.89
Total	12,762	13,903	1,141	9%	1,524	-	-	-

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)
Set and Exhibit Designers (27-1027)	373	362	(11)	(3%)	34	\$11.64	\$22.17	\$40.87
Audio and Video Technicians (27-4011)	678	708	30	4%	74	\$19.90	\$26.57	\$37.40
Sound Engineering Technicians (27-4014)	312	330	18	6%	36	\$24.51	\$27.79	\$38.95
Lighting Technicians (27-4015)	143	137	(6)	(4%)	14	\$17.33	\$24.87	\$28.33
Total	1,506	1,537	30	2%	157	-	-	-

Exhibit 11. Los Angeles and Orange Counties

Occupation (SOC)	2021 Jobs	2026 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Typical Entry-Level Education
Set and Exhibit Designers (27-1027)	2,350	2,420	69	3%	235	Bachelor's degree
Audio and Video Technicians (27-4011)	6,721	7,434	713	11%	836	Postsecondary non-degree award
Sound Engineering Technicians (27-4014)	4,227	4,573	345	8%	503	Postsecondary non-degree award
Lighting Technicians (27-4015)	970	1,013	43	4%	107	High school diploma or equivalent
Total	14,269	15,440	1,171	8%	1,681	-

Appendix B: Sources

- O*NET Online
- Labor Insight (Burning Glass Technologies)
- 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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