

Program Endorsement Brief: 2102.10/Public Works

Public Works Administration; Public Works Inspection; Public Works Maintenance Services; Greenscape Maintenance Technology; and Hardscape Maintenance Technology

Los Angeles/Orange County Center of Excellence, April 2021

Summary Analysis

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 type="checkbox"/>		No <input checked="" type="checkbox"/>

The Los Angeles/Orange County Center of Excellence for Labor Market Research (COE) prepared this report to provide Los Angeles/Orange County regional labor market supply and demand data related to five middle-skill occupations: *construction managers (11-9021)*; *first-line supervisors of landscaping, lawn service, and groundskeeping workers (37-1012)*; *first-line supervisors of construction trades and extraction workers (47-1011)*; *construction and building inspectors (47-4011)*; and *maintenance and repair workers, general (49-9071)*. Middle-skill occupations typically require some postsecondary education, but less than a bachelor’s degree.¹ Although the occupations in this report typically require a high school diploma, they are 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 appears to be a supply gap for these occupations in the region. In addition to nearly one-third or more of incumbent workers in these occupations having some type of community college training, entry-level wages are higher than the living wage for one adult in Los Angeles County. **Therefore, due to all of the criteria being met, the COE endorses this proposed program.** Detailed reasons include:

Demand:

- **Supply Gap Criteria** – Over the next five years, there is projected to be **9,372 jobs available annually** in the region due to new job growth and replacements, **which is**

¹ 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.

more than the 435 awards conferred annually by educational institutions in the region.

- **Living Wage Criteria** – In Los Angeles County, all five occupations have entry-level wages above the county’s living wage (\$15.04/hour).²
 - **Educational Criteria** – The Bureau of Labor Statistics (BLS) lists a high school diploma as the typical entry-level education for *first-line supervisors of landscaping, lawn service, and groundskeeping workers (37-1012)*; *first-line supervisors of construction trades and extraction workers (47-1011)*; *construction and building inspectors (47-4011)*; *maintenance and repair workers, general (49-9071)*; and a bachelor’s degree for *construction managers (11-9021)*.
 - National-level educational attainment data indicates **between 29% and 41% of workers in the field have completed some college or an associate degree.**

Supply:

- There are **17 community colleges** in the LA/OC region that issue awards related to the five occupations of interest, conferring an average of **374 awards annually** between 2017 and 2020.
- Between 2014 and 2017, there was an average of **61 awards conferred** annually in related training programs by non-community college institutions.

² Living wage data was pulled from California Family Needs Calculator on 4/6/2021. For more information, visit the California Family Needs Calculator website: <https://insightcced.org/2018-family-needs-calculator/>.

Occupational Demand

Exhibit 1 shows the five-year occupational demand projections for the five occupations of interest. In Los Angeles/Orange County, the number of jobs related to these occupations is projected to increase by 2% through 2024. There will be nearly 9,400 job openings per year through 2024 due to job growth and replacements.

This report includes employment projection data by Emsi, which uses EDD information. Emsi's projections are modeled on recorded (historical) employment figures and incorporate several underlying assumptions, including the assumption that the economy, during the projection period, will be at approximately full employment. To the extent that a recession or labor shock, such as the economic effects of COVID-19, can cause long-term structural change, it may impact the projections. At this time, it is not possible to quantify the impact of COVID-19 on projections of industry and occupational employment. Therefore, the projections included in this report do not take the impacts of COVID-19 into account.

Exhibit 1: Occupational demand in Los Angeles and Orange Counties³

Geography	2019 Jobs	2024 Jobs	2019-2024 Change	2019-2024 % Change	Annual Openings
Los Angeles	71,478	73,149	1,671	2%	6,545
Orange	31,258	31,791	533	2%	2,824
Total	102,736	104,939	2,203	2%	9,372

Wages

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

Los Angeles County: All five occupations have entry-level wages above the living wage for one adult (\$15.04 in Los Angeles County). Typical entry-level hourly wages are in a range between \$15.36 and \$32.11. Experienced workers can expect to earn wages between \$27.18 and \$62.35, which are higher than the living wage estimate.

Orange County: Four of the five occupations in this report have entry-level wages above the living wage for one adult (\$17.36 in Orange County). Typical entry-level hourly wages are in a range between \$15.61 and \$31.24. Experienced workers can expect to earn wages between \$27.65 and \$72.43, which are higher than the living wage estimate.

Note: Maintenance and repair workers, general is the one occupation that does not have entry-level wages above the living wage.

³ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

Job Postings

There were 18,588 online job postings related to five public works-related occupations listed in the past 12 months. The highest number of job postings were for mobile building engineer, mobile maintenance technician, and construction project manager. The top skills were plumbing, HVAC, and carpentry. The top employers, by number of job postings, in the region were Greystar, Marriot International Incorporated, and CBRE.

It is important to note that the job postings data included in this section reflects online job postings listed in the past 12 months and does not yet demonstrate the impact of COVID-19. While employers have generally posted fewer online job postings since the beginning of the pandemic, the long-term effects are currently unknown.

Educational Attainment

The Bureau of Labor Statistics (BLS) lists a high school diploma as the typical entry-level education for *first-line supervisors of landscaping, lawn service, and groundskeeping workers (37-1012)*; *first-line supervisors of construction trades and extraction workers (47-1011)*; *construction and building inspectors (47-4011)*; *maintenance and repair workers, general (49-9071)*; and a bachelor's degree for *construction managers (11-9021)*. Furthermore, national-level educational attainment data indicates between 29% and 41% of workers in the field have completed some college or an associate degree. Of the 53% of job postings listing a minimum education requirement in Los Angeles/Orange County, 70% (6,832) requested a high school diploma, 5% (472) requested an associate degree, and 25% (2,465) requested a bachelor's degree.

Educational Supply

Community College Supply—Exhibit 2 shows the annual and three-year average number of awards conferred by community colleges in the related TOP codes: Landscape Design and Maintenance (0109.10); Parks and Outdoor Recreation (0115.10); Construction Crafts Technology (0952.00); Civil and Construction Management Technology (0957.00); Construction Inspection (0957.20); and Public Works (2102.10). The college with the most completions in the region is Orange Coast. Over the past 12 months, there were two other related program recommendation requests from regional community colleges.

Exhibit 2: Regional community college awards (certificates and degrees), 2017-2020

TOP Code	Program	College	2017-18 Awards	2018-19 Awards	2019-20 Awards	3-Year Award Average
0109.10	Landscape Design and Maintenance	LA Pierce	6	-	-	2
		Mt San Antonio	20	33	11	21
		LA Subtotal	26	33	11	23
		Fullerton	2	3	5	3
		Orange Coast	-	2	3	2
		Saddleback	4	11	37	17
		OC Subtotal	6	16	45	22
Supply Subtotal/Average			32	49	56	46
0115.10	Parks and Outdoor Recreation	Mt San Antonio	5	-	3	3
		LA Subtotal	5	-	3	3
		Supply Subtotal/Average	5	-	3	3
0952.00	Construction Crafts Technology	Compton	2	1	-	1
		El Camino	7	11	17	12
		LA Southwest	-	-	152	51
		Long Beach	-	-	60	20
		Pasadena	1	1	1	1
		LA Subtotal	10	13	230	84
		Fullerton	11	14	8	11
		Orange Coast	56	91	37	61
		Santa Ana	12	72	85	56
		OC Subtotal	79	177	130	129
Supply Subtotal/Average			89	190	360	213
0957.00	Civil and Construction Management Technology	East LA	-	-	1	0
		LA Valley	5	6	13	8
		Mt San Antonio	3	-	11	5
		LA Subtotal	8	6	25	13

TOP Code	Program	College	2017-18 Awards	2018-19 Awards	2019-20 Awards	3-Year Award Average
0957.20		Fullerton	11	12	11	11
		OC Subtotal	11	12	11	11
	Supply Subtotal/Average		19	18	36	24
	Construction Inspection	Pasadena	9	7	21	12
		LA Subtotal	9	7	21	12
		Coastline	12	15	11	13
		Fullerton	8	11	4	8
		Saddleback	3	10	15	9
		Santiago Canyon	-	-	15	5
	OC Subtotal		23	36	45	35
Supply Subtotal/Average		32	43	66	47	
2102.10	Public Works	Citrus	9	27	22	19
		LA Trade	2	-	-	1
		LA Subtotal	11	27	22	20
		Santiago Canyon	18	19	26	21
		OC Subtotal	18	19	26	21
Supply Subtotal/Average		29	46	48	41	
Supply Total/Average			206	346	569	374

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 related to the five occupations of interest. Exhibit 3 shows the annual and three-year average number of awards conferred by these institutions in the related Classification of Instructional Programs (CIP) Codes: parks, recreation and leisure studies (31.0101), and construction management (52.2001).

Due to different data collection periods, the most recent three-year period of available data is from 2014 to 2017. Between 2014 and 2017, non-community colleges in the region conferred an average of 61 awards annually in related training programs.

Exhibit 3: Regional non-community college awards, 2014-2017

CIP Code	Program	College	2014-15 Awards	2015-16 Awards	2016-17 Awards	3-Year Award Average
31.0101	Parks, Recreation and Leisure Studies	California State University-Dominguez Hills	2	-	-	1
		California State University-Long Beach	52	60	64	59
		California State University-Northridge	3	-	-	1
52.2001	Construction Management	Learnet Academy Inc.	1	1	-	1
Supply Total/Average			58	61	64	61

Appendix A: Occupational demand and wage data by county

Exhibit 4. Los Angeles County

Occupation (SOC)	2019 Jobs	2024 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75th Percentile)
Construction Managers (11-9021)	13,397	14,411	1,014	8%	1,057	\$21.40	\$37.61	\$62.35
First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers (37-1012)	4,102	4,021	(81)	(2%)	388	\$16.34	\$22.17	\$32.72
First-Line Supervisors of Construction Trades and Extraction Workers (47-1011)	14,578	14,620	42	0%	1,383	\$26.95	\$35.22	\$45.31
Construction and Building Inspectors (47-4011)	2,816	2,915	99	4%	325	\$32.11	\$43.91	\$53.87
Maintenance and Repair Workers, General (49-9071)	36,585	37,182	597	2%	3,392	\$15.36	\$20.12	\$27.18
Total	71,478	73,149	1,671	2%	6,545			

Exhibit 5. Orange County

Occupation (SOC)	2019 Jobs	2024 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75th Percentile)
Construction Managers (11-9021)	5,971	6,320	349	6%	453	\$30.15	\$49.05	\$72.43
First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers (37-1012)	1,976	1,917	(59)	(3%)	182	\$17.76	\$23.26	\$33.56
First-Line Supervisors of Construction Trades and Extraction Workers (47-1011)	7,521	7,612	91	1%	724	\$30.25	\$38.91	\$49.26
Construction and Building Inspectors (47-4011)	1,108	1,144	36	3%	128	\$31.24	\$42.98	\$52.86
Maintenance and Repair Workers, General (49-9071)	14,682	14,798	116	1%	1,337	\$15.61	\$20.49	\$27.65
Total	31,258	31,791	533	2%	2,824	31,258		

Exhibit 6. Los Angeles and Orange Counties

Occupation (SOC)	2019 Jobs	2024 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Typical Entry-Level Education
Construction Managers (11-9021)	19,369	20,731	1,363	7%	1,510	Bachelor's degree
First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers (37-1012)	6,078	5,938	(140)	(2%)	571	High school diploma
First-Line Supervisors of Construction Trades and Extraction Workers (47-1011)	22,099	22,232	133	1%	2,108	High school diploma
Construction and Building Inspectors (47-4011)	3,924	4,059	134	3%	453	High school diploma
Maintenance and Repair Workers, General (49-9071)	51,266	51,980	714	1%	4,730	High school diploma
Total	102,736	104,939	2,203	2%	9,372	

Appendix B: Sources

- O*NET Online
- Labor Insight/Jobs (Burning Glass)
- Economic Modeling Specialists, International (Emsi)
- Bureau of Labor Statistics (BLS)
- Employment Development Department, Labor Market Information Division, OES
- California Community Colleges Chancellor's Office Management Information Systems (MIS)
- California Family Needs Calculator, Insight Center for Community Economic Development
- Chancellor's Office Curriculum Inventory (COCI 2.0)

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