FOOTHILL COLLEGE

Pipe Trades

Program Report
For Greater South Bay and Peninsula Region
(Santa Clara and San Mateo Counties)

November 2016

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Plumbing Technology/Plumber

CIP 2010: A program that prepares individuals to practice as licensed plumbers by applying technical knowledge and skills to lay out, assemble, install, and maintain piping fixtures and systems for steam, natural gas, oil, hot water, heating, cooling, drainage, lubricating, sprinkling, and industrial processing systems in home and business environments. Includes instruction in source determination, water distribution, waster removal, pressure adjustment, basic physics, technical mathematics, blueprint reading, pipe installation, pumps, welding and soldering, plumbing inspection, and applicable codes and standards.

Target Occupations‡

First-Line Supervisors of Construction Trades and Extraction Workers (47-1011)

Pipelayers (47-2151)

Plumbers, Pipefitters, and Steamfitters (47-2152)

Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters (47-3015)

Septic Tank Servicers and Sewer Pipe Cleaners (47-4071)

‡Based on EMSI crosswalk of the Classification of Instructional Programs (CIP) codes with Standard Occupational Classification (SOC) codes as published by the U.S. Department of Education.

In 2016, the number of Plumbing Technology jobs in the target occupations in Santa Clara and San Mateo Counties totaled 10,509. The Bureau of Labor Statistics (BLS) expects the total number of positions to increase by almost 6% over the next three years.

Occupation Summary for Plumbing Technology

10,509	5.6%	$32.68/hr
Jobs (2016)[1]	**% Change (2016-2019)**[3]	**Median Hourly Earnings**
16% below National average[2]	Nation: 2.0%	Nation: $25.58/hr

[1]Based on total number of jobs for target occupations in Santa Clara and San Mateo Counties.
[2]Represents occupation density as compared to national average (national average=1).
[3]Based on turnover and new jobs.

Target occupations that are mapped to the Plumbing Technology program are disaggregated to see which occupations are projected to see the highest number of annual openings (Plumbers, Pipefitters, and Steamfitters), highest percentage rate of growth over the next three years (Helpers—Pipelayers, Plumbers, Pipefitters, and Steamfitters), and the highest median hourly earnings (First-Line Supervisors of Construction Trades and Extraction Workers). While Helpers—Pipelayers, Plumbers, Pipefitters, and Steamfitters are expected to experience job growth (11%) these occupations are less represented and concentrated in our region (Santa Clara and San Mateo Counties) compared to the national average.

Target Occupations

| Occupation	2016 Jobs	Annual Openings	Median Hourly Earnings	Growth (2016 - 2019)	Location Quotient (2016)
First-Line Supervisors of Construction Trades and Extraction Workers	5,224	148	$37.97/hr	5.00%	0.82
Plumbers, Pipefitters, and Steamfitters	4,751	167	$27.88/hr	6.13%	1.00
Pipelayers	218	7	$25.13/hr	5.05%	0.46
Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	213	12	$16.96/hr	11.27%	0.35
Septic Tank Servicers and Sewer Pipe Cleaners	103	5	$25.18/hr	4.85%	0.35

Growth in the Plumbing Technology occupations show how each occupation is projected to increase in jobs over the next three years. A growth of about 6% is expected in the next three years in Plumbing Technology.

Growth for Plumbing Technology

10,509	11,102	593	5.6%
2016 Jobs	2019 Jobs	Change (2016-2019)	% Change (2016-2019)

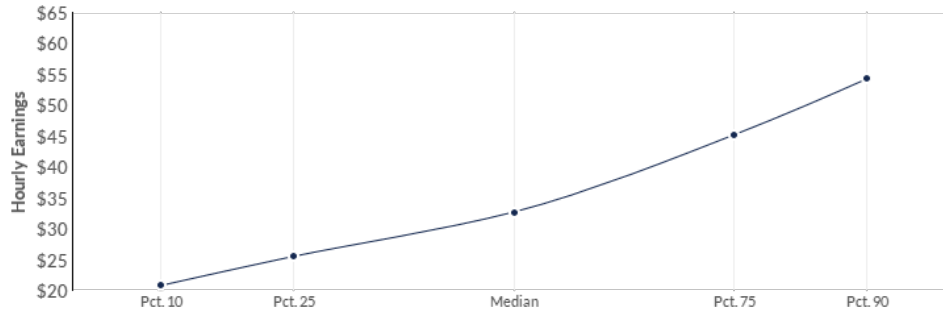| Occupation	2016 Jobs	2019 Jobs	Change	% Change
First-Line Supervisors of Construction Trades and Extraction Workers (47-1011)	5,224	5,485	261	5%
Pipelayers (47-2151)	218	229	11	5%
Plumbers, Pipefitters, and Steamfitters (47-2152)	4,751	5,042	291	6%
Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters (47-3015)	213	237	24	11%
Septic Tank Servicers and Sewer Pipe Cleaners (47-4071)	103	108	5	5%

Regional Trends
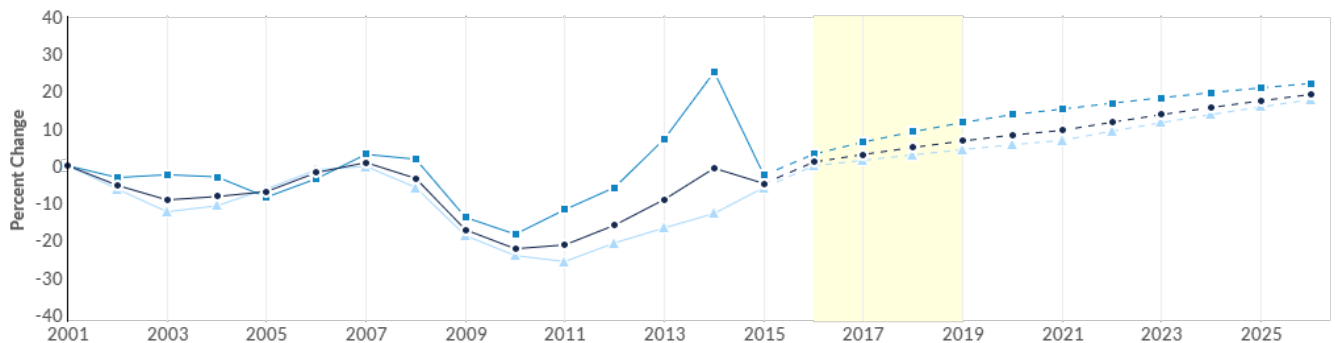
Region	2016 Jobs	2019 Jobs	Change	% Change
Region	10,509	11,102	593	5.6%
San Mateo County, CA	3,434	3,717	283	8.2%
Santa Clara County, CA	7,075	7,385	310	4.4%

The percentile earnings table shows the range the Plumbing Technology occupations earn in the region. While the median earnings are approximately $32/hour, wages can range from below $25/hour to above $45/hour. Each of the target occupations' range in wages is also displayed.

Percentile Earnings for Plumbing Technology

$25.48/hr	$32.68/hr	$45.21/hr
25th Percentile Earnings	**Median Earnings**	**75th Percentile Earnings**

Occupation	25th Percentile Earnings	Median Earnings	75th Percentile Earnings
First-Line Supervisors of Construction Trades and Extraction Workers (47-1011)	$29.38	$37.97	$49.80
Pipelayers (47-2151)	$22.85	$25.13	$27.38
Plumbers, Pipefitters, and Steamfitters (47-2152)	$21.78	$27.88	$42.18
Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters (47-3015)	$14.84	$16.96	$19.87
Septic Tank Servicers and Sewer Pipe Cleaners (47-4071)	$19.72	$25.18	$32.89

Target Occupations Demographics

The demographics among those employed in Plumbing Technology occupations in Santa Clara and San Mateo Counties for 2016 show that a majority are male (97%) and more than a quarter are between the ages of 35-44 (27%) and 45-54 (28%) and more than half are White (58%).

Occupation Gender Breakdown

Gender	2016 Jobs	2016 Percent	
Males	10,154	96.6%	
Females	355	3.4%	

Occupation Age Breakdown

Age	2016 Jobs	2016 Percent	
14-18	18	0.2%	
19-24	459	4.4%	
25-34	2,238	21.3%	
35-44	2,781	26.5%	
45-54	2,975	28.3%	
55-64	1,631	15.5%	
65+	407	3.9%	

Occupation Race/Ethnicity Breakdown

Race/Ethnicity	2016 Jobs	2016 Percent	
White	6,119	58.2%	
Hispanic or Latino	3,313	31.5%	
Asian	517	4.9%	
Black or African American	311	3.0%	
Two or More Races	161	1.5%	
Native Hawaiian or Other Pacific Islander	49	0.5%	
American Indian or Alaska Native	39	0.4%	

Industries Employing Plumbing Technology Occupations

A number of industries in Santa Clara and San Mateo Counties employ those trained in Plumbing Technology and its related occupations. The following table represents a regional industry breakdown of the number of Plumbing Technology positions employed, the percentage of Plumbers employed by industry and the percentage Plumbing Technology jobs represent within all jobs by each industry. While Plumbing, Heating, and Air-Conditioning Contractors employed 40% of all regional Plumbing Technology positions in 2016, Plumbers composed almost the same amount of all jobs in that industry (37%).

Industries Employing Plumbing Technology

Industry	Occupation Group Jobs in Industry (2016)	% of Occupation Group in Industry (2016)	% of Total Jobs in Industry (2016)
Plumbing, Heating, and Air-Conditioning Contractors	4,152	39.5%	37.3%
Commercial and Institutional Building Construction	917	8.7%	11.5%
Electrical Contractors and Other Wiring Installation Contractors	826	7.9%	5.4%
Residential Remodelers	583	5.5%	8.5%
New Single-Family Housing Construction (except For-Sale Builders)	446	4.2%	8.3%

In an average month, there were 127 unique (internet) job postings for Plumbing Technology jobs, and 650 actually hired from January 2016 to September 2016. This means there was approximately 5 hires for every 1 unique (internet) job posting for occupations in Plumbing Technology. In cases where there were more hires compared to job postings, it suggests that the internet may not be the primary way that job openings for these occupations are advertised.

Job Postings vs. Hires

127	650
Avg. Monthly Postings (Jan 2016 - Sep 2016)	**Avg. Monthly Hires (Jan 2016 - Sep 2016)**
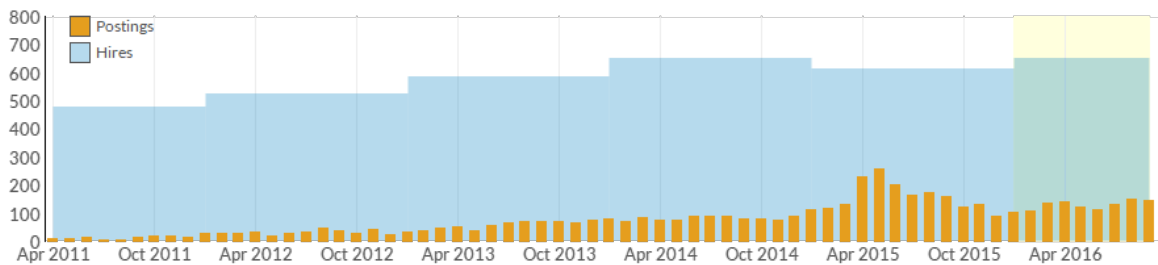
Occupation	Avg Monthly Postings (Jan 2016 - Sep 2016)	Avg Monthly Hires (Jan 2016 - Sep 2016)
First-Line Supervisors of Construction Trades and Extraction Workers	93	315
Plumbers, Pipefitters, and Steamfitters	33	303
Septic Tank Servicers and Sewer Pipe Cleaners	1	4
Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	0	15
Pipelayers	0	14

The top five relevant hard and soft skills employers list in Plumbing Technology job posting descriptions are listed below. The "Postings with Skill" column is the total amount of (internet) job postings that mention the skills listed below. These numbers may be higher than the average monthly postings from above, because this number includes duplicated (internet) job postings. The "Relevance Score" gauge relevance of the skill by indicating the frequency in which this skill is being mentioned in (internet) job postings for Plumbing Technology compared to all other (internet) job postings.

Most Relevant Hard Skills

Skill	Relevance Score	Postings with Skill
Plumbing Codes	35.61	29
Plumbing Fixture	30.28	128
Criminal Procedure	28.27	16
Water Distribution	26.26	108
Pretrial Services	22.40	16

Most Relevant Soft Skills

Skill	Relevance Score	Postings with Skill
Scheduling (Project Management)	0.16	429
Coordinating	0.13	141
Leadership Development	0.12	20
Literacy	0.10	22
Ethics	0.06	43

Appendix A - Data Sources and Calculations

Location Quotient

Location quotient (LQ) is a way of quantifying how concentrated a particular industry, cluster, occupation, or demographic group is in a region as compared to the nation. It can reveal what makes a particular region unique in comparison to the national average.

Occupation Data

Emsi occupation employment data are based on final Emsi industry data and final Emsi staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors). Occupational wage estimates also affected by county-level Emsi earnings by industry.

Completers Data

The completers data in this report is taken directly from the national IPEDS database published by the U.S. Department of Education's National Center for Education Statistics.

Institution Data

The institution data in this report is taken directly from the national IPEDS database published by the U.S. Department of Education's National Center for Education Statistics.

CareerBuilder/Emsi Job Postings

Job postings are collected from various sources and processed/enriched by Careerbuilder to provide information such as standardized company name, occupation, skills, and geography. Emsi performs additional filtering and processing to improve compatibility with Emsi data.

State Data Sources

This report uses state data from the following agencies: California Labor Market Information Department