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IMPACT OF CALIFORNIA'S HOUSING PRICES ON CONSTRUCTION WORKERS





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Final Report

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EXECUTIVE SUMMARY

This report takes a close look at the impact of California’s very high residential prices on the ability of construction workers — the very people who build our homes — to afford to live within the markets where they work. It does so by reviewing the number of workers and pay scales in 50 different construction occupations. It distinguishes between pay levels for all construction workers and those who are in unions. The research separately studies Southern California and the San Francisco (*SF*) Bay Area since real estate markets are subject to very different forces depending upon their geographic location.

California’s housing crisis largely stems from a serious shortage on the market’s supply side. Thus, “the California Department of Housing and Community Development estimates that builders around the state need to construct 180,000 homes every year. Instead, for the past ten years, the state has built an annual average below 80,000, which is less than half of the need.”¹ Yet, demand is increasing both due to population growth and Millennials now in their child bearing years. The result has been rapidly rising prices.

Importantly, housing supply remains restricted by the historic difficulty of getting projects through entitlement processes including the accelerating use of CEQA lawsuits to stop projects by local Not-In-My-Back-Yard (*NIMBY*) entities and environmental groups. Many see that trend as a distortion of a law designed to protect the environment, not stop residential building. Meanwhile, the recent focus on proposed mandates to cut greenhouse gases (*GHG*) emissions could result in reduced access to units in outlying markets. That would further limit supply given the state’s failure, to date, of increasing access to housing in urban centers. Thus, “builders ... told CARB that building within existing communities continues to be more costly and difficult than building on greenfield parcels at the edge of town. Upgrading civic infrastructure in existing communities is more costly and difficult to finance than building new infrastructure. They report that regulatory and fiscal reform is needed if a market-driven system like real-estate development is to produce desired results.”²

The impact of these difficulties is underscored in that depending on the market, only 18% to 23% of households can afford the median priced home where they live, be it Southern California’s coastal counties or the San Francisco (*SF*) Bay Area. In those broad areas, only a fraction of the bottom 50% of homes can be afforded by 77% to 82% of local families.³

Southern California

In Southern California, the analysis began by looking at the very high residential prices for **median priced homes** in Los Angeles (\$629,000), San

Diego (\$650,000) and Orange (\$830,000) counties versus the Inland Empire (\$362,500). It separately looks at the cost of lower priced first time homes in those counties: Los Angeles (\$534,600), San Diego (\$552,600) and Orange (\$705,500) counties compared to the Inland Empire (\$308,120).⁴

Next, the report identifies the number of workers and pay scales in each of 50 construction occupations in each of seven southern markets (*Imperial, Los Angeles, Orange, Inland Empire, San Diego, Santa Barbara, Ventura*).⁵ It does so to determine which workers in which markets could afford to buy these homes. For all workers, the median annual pay was used (*half make more, half less*). The weighted average was \$54,116 for all 390,067 construction workers. For union construction workers, the 75th percentile pay level was used (*25% make more, 75% less*). For them, the weighted average was \$73,258 for the estimated 73,720 workers (*18.9% of such workers*). In both cases, hourly rates from EDD were annualized assuming workers worked 8-hours a day, 5-days a week 52-weeks a year. This likely overestimated pay levels and biased the ability to afford homes to the high side.

To determine if construction workers (*union & non-union*) in each occupation in each market could afford **median priced homes** in the four major Southern California markets, their median pay levels were compared to the income requirements to buy the homes in those markets.⁶ Based upon this comparison, **no** construction worker from throughout the region could afford homes in Los Angeles, Orange or San Diego counties. Only a very few, primarily in management or inspection occupations, could afford the Inland Empire's median priced homes.

Next, to see if construction workers (*union & non-union*) in each occupation in each market could afford the **lower priced first time homes** in the four major Southern California markets, the same comparison was made. It found that even at the lower prices in Los Angeles, Orange and San Diego counties, homes were still beyond the reach of all but a very few median paid construction workers. However, the Inland Empire's much lower price (\$308,120) meant that about half the construction workers in the several counties could buy an affordable first time home in that market. This would require them to migrate inland from other Southern California locations. In the Inland Empire, affordable homes are far from its borders with the adjacent coastal counties, adding to commute times for workers who chose to migrate and drive to work.

Union workers in each of the 50 occupations in the seven markets were then subjected to the same income and housing price comparisons. For **median priced homes**, the analysis showed that the better paid union construction workers could still **not** afford median priced homes in the coastal counties. In the Inland Empire, there were just 52 cases in 19 of 50 occupations with 34.1% of where Southern California's union workers could afford its median

priced home. For **lower priced first time homes**, the median income/price comparison showed that 71,316 of union workers (96.7%) from throughout Southern California could afford the Inland Empire's lower priced homes. In the other three markets, however, the shares able to afford these homes was far lower: Orange County (0.4%), San Diego County (14.0%) Los Angeles County (21.9%).⁷

SF Bay Area

Turning to the SF Bay Area, the analysis looked at the very high prices for **median priced homes** in the nine counties: San Francisco (\$1,600,000), San Mateo (\$1,600,000), Marin (\$1,300,00), Santa Clara (\$1,300,000), Alameda (\$950,000), Napa (\$729,500), Contra Costa (\$660,000), Sonoma (\$660,000) and Solano (\$455,000) counties versus the northern Central Valley (\$291,796). It also separately looked at the cost of **lower priced first time homes** in those counties: San Francisco (\$1,360,000), San Mateo (\$1,360,000), Marin (\$1,105,00), Santa Clara (\$1,105,000), Alameda (\$807,500), Napa (\$620,080), Contra Costa (\$561,000), Sonoma (\$561,000) and Solano (\$386,750) counties versus the northern Central Valley (\$248,028).⁸

Looking at pay scales, the report found the number of workers and pay scales in each of 50 construction occupations in each of the area's nine counties. The pay information was again 2018 figures from EDD. The weighted median pay was \$65,448 for all 164,210 SF Bay Area construction workers. Using the 75th percentile annual pay, the weighted union pay was \$89,015 for the 31,269 union construction workers (19.0% of all construction workers). In both cases, hourly rates from EDD were annualized assuming workers worked 8-hours a day, 5-days a week 52-weeks a year. This also likely overestimated pay levels and biased the ability to afford homes to the high side.

To determine if all construction workers (*union & non-union*) in each occupation in each market at these annualized pay levels, could afford the **median priced homes** in the nine markets, their incomes were compared to the CA Association of Realtors' income requirements to buy them. Based upon this comparison, it was clear that except for a very few supervisors and inspectors in Solano County (4,440; 2.7% of workers), those earning the weighted median annual income in their occupations in the counties could **not** afford the homes. The picture changed in looking at the Central Valley, where there were 84 cases in 29 occupations with 80,080 SF Bay Area construction workers (48.8% of 164,210) able to afford the median priced home (\$291,796). Given the distances to the Central Valley, as seen above with the Inland Empire, workers who might take advantage of this situation would face very long commutes.

To determine if construction workers (*union & non-union*) in each occupation in each market could afford the SF Bay Area's **lower priced first time**

homes, the same comparison was made for these less expensive homes. It found that **no** construction worker could afford the lower prices in San Francisco, San Mateo, Marin, Santa Clara and Alameda counties. Very small shares of workers could do so in Napa County (1.7%), Contra Costa and Sonoma counties (11.3%). Solano County's affordable homes could be bought by 80,020 or 48% of the SF Bay Area's construction workers but this would require many workers to migrate north across the Carquinez Bridge to that county. Meanwhile, most of the SF Bay Area's construction workers (158,080 of 164,210 or 96.3%) could afford the Central Valley's affordable home. Again, this raises the specter of long distance commutes for those who would migrate there.

Income and median home price comparisons were also made for more highly paid union construction workers. Even in this case, **no** union worker could afford the median priced homes in San Francisco, San Mateo, Marin, Santa Clara, Alameda and Napa counties. For Contra Costa and Sonoma counties, there were two occupations with 378 workers (1.2%) in the region that could afford their median priced home. Solano County was a better situation with 50 cases in 16 occupations where 10,040 or 32.1% of the 31,269 union construction workers could afford the median home. For most workers, the choice was still a potential move to the Central Valley where 91.7% or 28,675 union workers from throughout the SF Bay Area could afford its median priced home. They worked in 37 of 50 occupations.

Even with higher union pay and **lower priced homes**, **no** union workers was able to afford a home in San Francisco, San Mateo, Marin or Santa Clara counties. For Alameda County, it was just 378 of 31,269 union construction workers (1.2%). Shares were higher looking farther north: Napa County (27.8%), Contra Costa and Sonoma (46.2%). For Solano County, 91.3% or 28,556 union workers from the region could afford its lower priced homes. In contrast, nearly every union worker in the SF Bay Area could afford the \$248,028 first time lower priced home in the Central Valley (98.5%).

Commuting

Finally, the analysis looked at the issue of commuting from the Inland Empire to the coastal counties of Southern California and from the Central Valley to the SF Bay Area. Ten cases were reviewed of long commutes, five at each end of the state. The distances of commutes and estimated round-trip drive times were calculated using Google Maps. The round trip times ranged from 2 hours 30 minutes (*Lake Elsinore to Irvine*) to 5 hours 20 minutes (*Modesto to Palo Alto*). This was the case despite assuming drivers left from 4:00 am to 5:00 am in the morning and returned at 3:00 pm in the afternoon to avoid the worst commuter hours.

AAA data on the cost of fuel, maintenance, wear and tear for driving pick-up trucks as well as round trip counter mileage were used to calculate the daily cost of driving the assumed trips. No cost was assigned to the worker's driving time. Commuting was assumed for 5-days a week for 50 weeks. The least expensive assumed commute in the SF Bay Area region was from Tracy to Hayward at \$8,036; the most expensive from Modesto to Palo Alto at \$18,655. In Southern California, the least expensive assumed commute was from Lake Elsinore to Irvine at \$9,635; the most expensive from Menifee to San Diego at \$14,350. These were conservative estimates in that miles per gallon would likely be lower than AAA figures as most commuting would occur in heavy traffic. Given the role of CEQA in causing the housing crisis, to be very conservative, no cost was assigned to the added environmental damage of long commutes which according to studies would be considerable and negate much of the positive GHG reductions associated with the state's adopted planning policies.⁹

Finally, the median incomes of all construction workers and those of union construction workers were used to calculate the extent that commuting costs would lower the net incomes of workers. For all workers, the result ranged from a 12.3% drop in income for those taking the Tracy to Hayward commute to 26.5% for workers facing the Menifee to San Diego drive. For union construction workers, the range was from a 9.0% drop in income for union construction workers taking the Tracy to Hayward commute to 19.6% for workers facing the Menifee to San Diego drive.¹⁰

Summary

The data studied in this report underscore the irony that construction workers regardless of their occupational specialty, and whether unionized or not, have essentially been priced out of buying homes in the very markets where they work, often building the homes they cannot afford. They are caught in this situation due to the extremely high prices for housing in Southern California's coastal counties and the SF Bay Area. This situation has been brought about by the shortage of new housing often resulting from the market's reaction to state laws and policies. For construction workers, their only options are to try and find first time lower priced affordable homes in often distant outlying markets like the Inland Empire and the Central Valley. The result will increasingly be very long, time consuming and expensive commutes with the commensurate wear and tear on their vehicles, themselves and the environment. The only exceptions are those who already own homes or have long term apartment leases.

IMPACT OF CALIFORNIA'S HOUSING PRICES ON CONSTRUCTION WORKERS

In recent years, it has become increasingly clear that California and Southern California are in the midst of a worsening housing crisis. The demand for housing has increased as Millennials have moved into child bearing years, while the supply of housing has been restricted by the traditional difficulty of getting projects through city and county entitlement processes plus the accelerating use of CEQA lawsuits by neighbors wishing to stop projects. The result has been soaring residential prices and rents, particularly in the San Francisco (SF) Bay Area, Orange, Los Angeles, and San Diego counties. In those markets, significant numbers of workers can no longer afford places to live. This has caused a migration of workers inland to the Riverside and San Bernardino counties in Southern California and the Central Valley in Northern California. Even those markets are seeing prices move to higher levels.

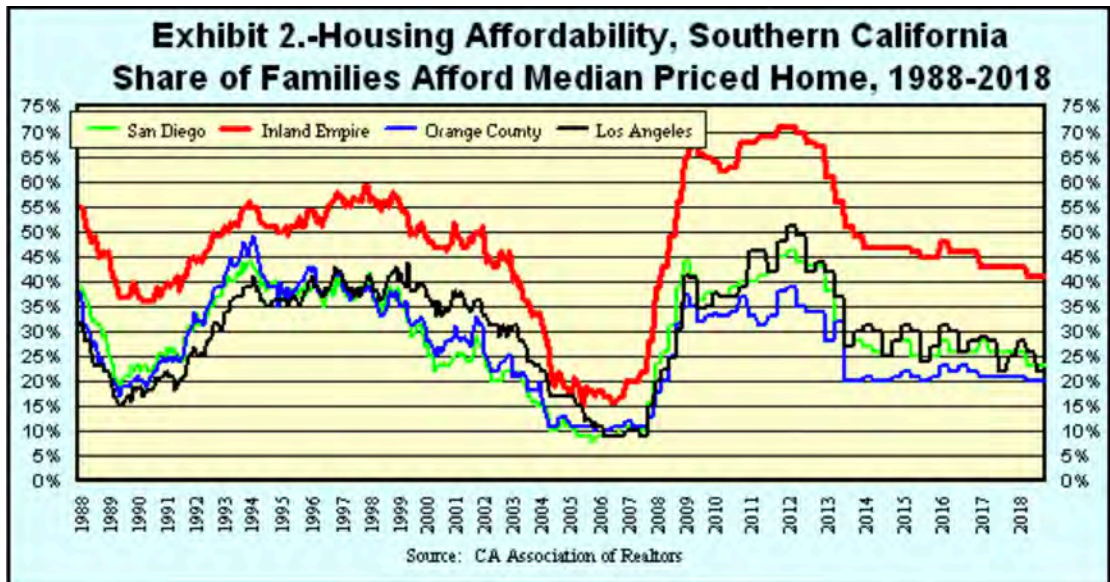
Single Family Median Priced Home Affordability

In late 2018, the median price of single family homes (*half of local families could afford; half not*) by market was: SF Bay Area (\$950,000), Orange (\$830,000) San Diego (\$650,000), Los Angeles (\$629,000), Inland Empire (\$362,500) and Central Valley (\$300,000). This has created the dynamic where many households, including construction workers, are often forced to migrate inland. By county, the savings for a coastal family moving to the Inland Empire was: Orange (\$467,500), San Diego (\$287,500) and Los Angeles (\$266,500). Families migrating from the SF Bay Area to the Central Valley could save \$650,000 (*Exhibit 1*).



It was similar for lower priced first time homes. For households moving to the Inland Empire (\$308,120) from Orange (\$705,500), the saving was \$397,380. Moving from San Diego (\$552,500) saved \$287,500. Moving from Los Angeles (\$534,600) saved \$266,500. It was \$622,472 for families migrating from the SF Bay Area (\$870,500) to the Central Valley (\$248,028).

Home prices at these levels have dramatically reduced the ability of local households in each market to afford local homes according to market level affordability statistics compiled by the CA Association of Realtors (*Exhibit 2*):



- In first quarter 2012, 51% of Los Angeles County’s households were able to afford the 50% of homes sold at the county’s median priced home or below, a balanced market. By fourth quarter 2018, just 22% of the county’s families could afford homes sold at the median price (\$628,940). That meant that 78% of local households could not afford a significant share of the least expensive 50% of homes sold in the county. Those households could only buy the reduced share of homes selling at prices well under the median price.
- In San Diego County, the first quarter 2012 affordability rate was 46%, a slightly unbalanced market. By late 2018, only 23% of local households could afford to buy median priced homes (\$650,000). The other 77% of local households could not afford a major share of the least expensive 50% of homes sold in the county. Also, those households could only buy the reduced share of dwellings selling at prices well under the median price.
- In Orange County, the share of households that could afford the median priced home was a relatively low 39% in 2012, already an

unbalanced market. By late 2018, only 20% of local households could afford to buy median priced homes (\$830,000). That meant that 80% of local households could not afford a very large share of the least costly 50% of homes sold in the county. A majority of the county's households could only afford the small share of homes selling well below the median price.

- In the SF Bay Area, by late 2018, only 18% of local households (*not shown*) could afford to buy median priced homes (\$950,000). That meant that 82% of local households could not afford a very large share of the least costly 50% of homes sold in the county. A majority of the county's households could only afford the small share of homes selling well below the median price.

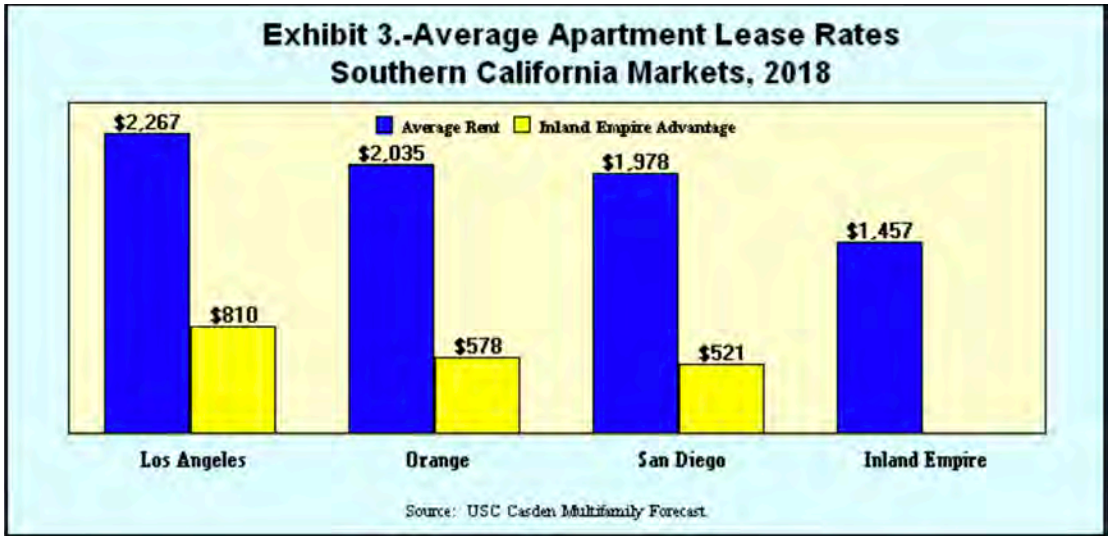
In each of these cases, in late 2018, only people at the high end of the income distribution could afford the vast share of homes sold in Southern California's coastal counties. And, the inland counties were no longer total exceptions:

- By late 2018, the ability of Inland Empire households to afford the median home (\$362,500) was down to 41%. The other 59% could only afford homes selling for prices below its median of \$362,500.
- By late 2018, the ability of Central Valley households to afford the median home (\$300,000) was down to 44%. The other 56% could only afford homes selling for prices below its median of \$300,000.

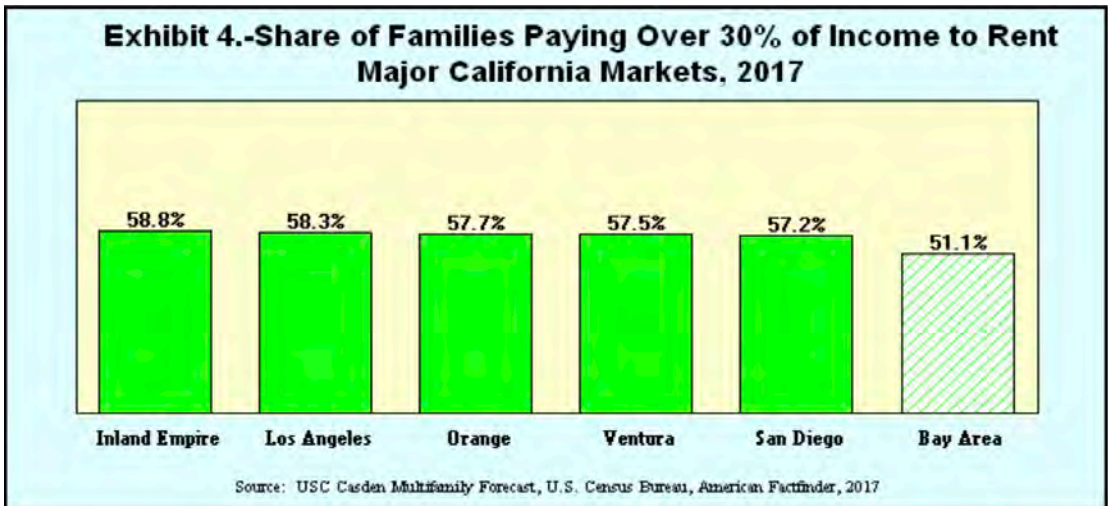
With buyers unable to pay for homes in coastal markets, prices have been bid up in traditionally affordable markets. Some have had no choice but to move, others want upscale homes they cannot afford in coastal markets. Thus, the inland counties nearest the SF Bay Area have the highest prices in the Central Valley: San Joaquin (\$365,000) and Stanislaus (\$312,000) versus Fresno (\$269,000) and Madera (\$264,000). In the Inland Empire, cities near coastal counties like Corona (\$511,078) and Eastvale (\$556,632) have much higher prices than fast growing cities deeper inland like Menifee (\$362,312) and Beaumont (\$355,757): These factors have contributed to inland counties like San Joaquin (10.7%) and Riverside (10.3%) leading California (6.9%) in 2010–2018 population growth.

Apartment Affordability

A similar dynamic has shown up in apartment markets. In 2018, apartment rents averaged \$2,267 in Los Angeles County. It was \$2,035 in Orange County, \$1,978 in San Diego County and \$1,457 in the Inland Empire (*Exhibit 3*). Average coastal county rents were thus \$521 to \$810 a month higher than in the inland counties. This represented another incentive for families to migrate into the Inland Empire.



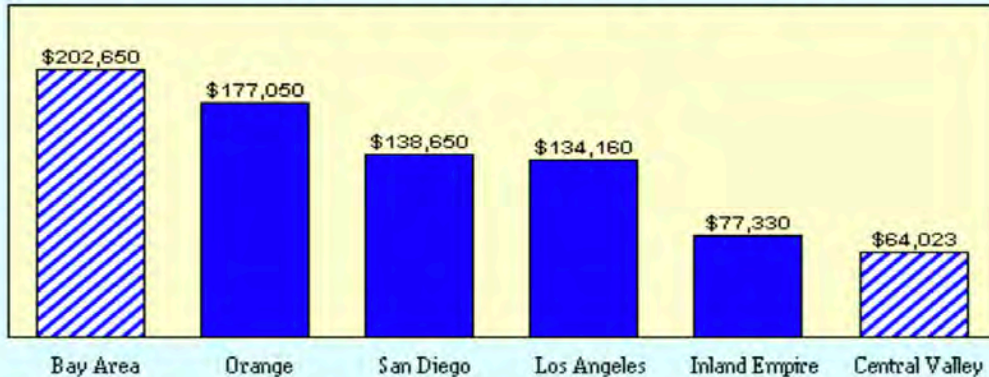
In 2017, the American Community Survey found that in every Southern California market, over 56% of apartment dwelling families were putting in excess of 30% of their incomes into rent payments. It was 51% in the Bay Area (*Exhibit 4*). These figures are well above the standard at which rents are found to be reasonable and affordable. It again shows that the lack of housing supply is creating a serious problem for families by soaking up inordinate amounts of household incomes.



Income Requirements

The California Real Estate Association maintains two indices measuring the monthly payments by market, including taxes and insurance. They show the incomes needed to buy homes as well as the incomes needed to afford those payments. One is for the median priced home; the other is for the lower

Exhibit 5.-Income Needed to Afford Median Home So. California & Bay Area, by County, Third Quarter 2018



Source: CA Real Estate Association

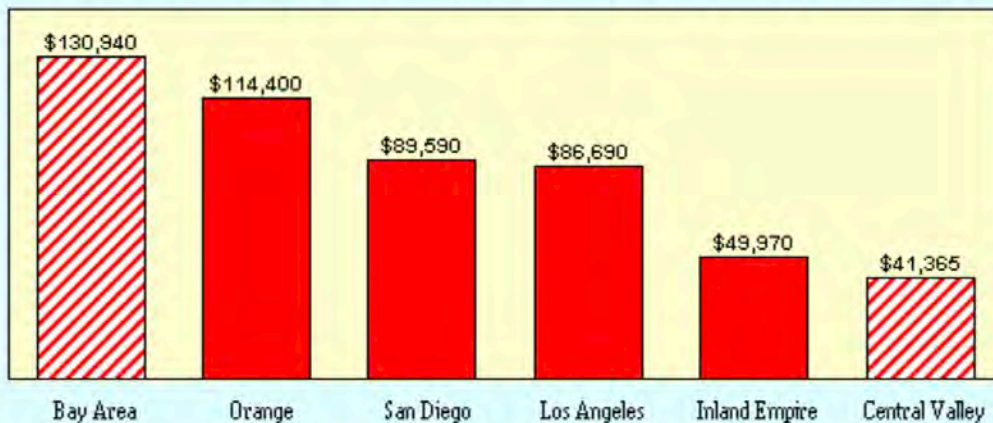
priced homes for first time buyers. Looking at the median priced homes shown on Exhibit 1, the following are the income needs (*Exhibit 5*):

- SF Bay Area (*median income: \$103,043*) is the most difficult. Its extremely high median prices need an income of \$202,650 to make \$5,070 monthly payments for a \$950,000 home.
- Orange County households (*median income: \$86,217*) would need income of \$177,050 to afford the \$4,430 in monthly mortgage, tax and insurance payments for a \$830,000 median priced home.
- San Diego County households (*median income: \$76,207*) would need an income of \$138,650 to cover the \$3,470 in payments for a \$650,000 median priced home.
- Los Angeles County households (*median income: \$65,006*) would need to earn \$134,160 to make monthly payments of \$3,350 for a \$629,000 median priced home.
- Inland Empire households (*median income: \$62,303*) would need an income of \$77,330 to make \$1,930 in monthly payments for a \$362,500 median priced house.
- Central Valley households (*median income: \$54,359*) would need an income of \$64,023 to make \$1,602 in monthly payments on a \$300,000 median priced home.

Together, these figures show why many moderate and low income families are being forced to migrate from California's coastal counties into its inland counties.

Assuming a buyer can find access to the affordable first time homes shown on Exhibit 1, the situation is better for potential buyers (*Exhibit 6*):

Exhibit 6.-Income Needed to Afford First Time Home So. California & Bay Area, by County, Third Quarter 2018



Source: CA Real Estate Association

- The SF Bay Area situation is again the most extreme. Its very high median price requires an income of \$202,650 to make \$4,360 monthly payments on an \$870,500 entry level home.
- Orange County households would need an income of \$114,400 to afford the \$3,810 in monthly mortgage, tax and insurance payments for a \$705,500 starter home.
- San Diego County households would need an income of \$89,590 to cover the \$2,990 payments for mortgages, taxes and insurance payments for a \$552,500 beginning home.
- Los Angeles County households would need to earn \$86,690 to make monthly payments of \$2,890 on a \$534,600 first time home.
- Inland Empire households would need an income of \$49,970 to make monthly payments to pay \$1,670 per month on a \$308,120 beginning home. In the region, homes in that price range are found deep inside inland markets at cities like Banning and Hemet.
- Central Valley households would need an income of \$41,365 to make monthly payments to pay \$1,408 per month on a \$248,028 beginning home.

Southern California Construction Workers

Given these income requirements, the question arises as to what share of construction workers can afford to buy homes. Further, to what extent does being a union member impact the analysis?

To address these questions, the starting point is the 2017 California Employment Development Department (EDD) data on employment by occupational category, whether union or not, for workers with jobs in each of Southern California's metropolitan areas. Those include Imperial, Los Angeles, Orange, San Diego, Santa Barbara and Ventura counties plus the Inland Empire. Data were available for 390,867 workers in 50 different occupations (*Exhibit 7*).

Exhibit 7. – Number of Workers by Construction Occupation, Southern California, 2017

Nation al Union %	OES	Occupations	Inland Empire	Los Angeles	Orange	San Diego	Ventura	Santa Barbara	Imperial	So. CA
11.4%	4720 61	Construction Laborers	12,350	16,990	11,310	8,920	1,860	840	260	52,530
18.1%	4720 31	Carpenters	13,960	16,160	9,290	8,230	2,120	1,030	110	50,900
35.0%	4721 11	Electricians	6,080	11,690	8,020	7,070	1,030	560	210	34,660
17.7%	4710 11	First-Line Supervisors of Construction Trades and Extraction Workers	5,140	9,850	7,420	5,590	910	530	80	29,520
27.4%	4721 52	Plumbers, Pipefitters, and Steamfitters	4,620	8,950	5,600	4,930	1,350	480	170	26,100
7.2%	4910 11	First-Line Supervisors of Mechanics, Installers, and Repairers	4,100	9,390	3,510	2,890	620	430	140	21,080
8.0%	4721 41	Painters, Construction and Maintenance	3,180	6,960	4,060	3,870	680	570	40	19,360
19.6%	4720 81	Drywall and Ceiling Tile Installers	3,070	5,000	3,720	3,070	520	0	0	15,380
14.5%	4990 21	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	3,010	5,520	2,190	2,290	440	0	60	13,510
26.0%	4720 73	Operating Engineers and Other Construction Equipment Operators	3,680	3,390	2,010	2,410	680	370	230	12,770
12.6%	4990 99	Installation, Maintenance, and Repair Workers, All Other	1,880	4,900	1,860	2,700	300	210	60	11,910
25.3%	4720 51	Cement Masons and Concrete Finishers	2,650	3,460	3,460	1,220	350	150	30	11,320
6.5%	4721 81	Roofers	1,610	2,690	2,010	1,300	280	270	0	8,160
9.6%	4990 98	Helpers--Installation, Maintenance, and Repair Workers	1,560	3,340	1,040	1,030	120	150	60	7,300
20.4%	4930 42	Mobile Heavy Equipment Mechanics, Except Engines	1,810	3,050	740	750	280	110	120	6,860
27.8%	4722 11	Sheet Metal Workers	1,470	1,700	1,560	1,700	270	150	0	6,850
24.0%	4740 11	Construction and Building Inspectors	1,080	2,280	980	1,300	210	90	30	5,970

National Union %	OES	Occupations	Inland Empire	Los Angeles	Orange	San Diego	Ventura	Santa Barbara	Imperial	So. CA
11.6%	4721 61	Plasterers and Stucco Masons	710	1,580	1,200	780	170	140	0	4,580
19.6%	4720 82	Tapers	1,250	930	810	990	520	50	0	4,550
5.4%	4720 44	Tile and Marble Setters	640	1,620	680	450	180	210	0	3,780
56.3%	4722 21	Structural Iron and Steel Workers	1,130	1,340	0	1,220	0	0	0	3,690
15.7%	4721 21	Glaziers	940	1,360	640	570	0	110	0	3,620
50.2%	4920 94	Electrical and Electronics Repairers, Commercial and Industrial Equipment	630	1,080	1,030	610	60	120	0	3,530
5.4%	4720 41	Carpet Installers	490	1,360	600	830	0	40	0	3,320
34.5%	4740 41	Hazardous Materials Removal Workers	420	1,340	460	420	70	0	0	2,710
21.1%	4720 21	Brick masons and block masons	910	600	710	220	170	0	0	2,610
10.3%	4730 11	Helpers—Brick masons, Block masons, Stonemasons, and Tile and Marble Setters	470	770	350	240	0	130	0	1,960
10.3%	4730 12	Helpers—Carpenters	350	580	540	320	0	0	0	1,790
10.3%	4730 13	Helpers—Electricians	450	1,200	0	0	0	0	0	1,650
27.4%	4721 51	Pipe layers	450	430	570	180	0	0	0	1,630
30.5%	4740 51	Highway Maintenance Workers	300	730	160	270	80	80	0	1,620
12.8%	4720 71	Paving, Surfacing, and Tamping Equipment Operators	660	470	0	490	0	0	0	1,620
1.8%	4740 31	Fence Erectors	0	710	420	340	0	0	0	1,470
10.3%	4730 19	Helpers, Construction Trades, All Other	340	360	400	360	0	0	0	1,460
59.7%	4721 71	Reinforcing Iron and Rebar Workers	320	310	410	390	0	0	0	1,430
10.3%	4730 15	Helpers—Pipe layers, Plumbers, Pipefitters, and Steamfitters	120	710	500	0	0	0	0	1,330
10.3%	4730 14	Helpers—Painters, Paperhangers, Plasterers, and Stucco Masons	120	710	0	410	0	0	0	1,240
20.4%	4990 11	Mechanical Door Repairers	240	0	0	370	270	30	130	1,040
21.0%	4990 12	Control and Valve Installers and Repairers, Except Mechanical Door	530	0	0	380	40	60	(3)	1,007

National Union %	OES	Occupations	Inland Empire	Los Angeles	Orange	San Diego	Ventura	Santa Barbara	Imperial	So. CA
59.7%	472171	Reinforcing Iron and Rebar Workers	320	310	410	390	0	0	0	1,430
10.3%	473015	Helpers—Pipe layers, Plumbers, Pipefitters, and Steamfitters	120	710	500	0	0	0	0	1,330
10.3%	473014	Helpers—Painters, Paperhangers, Plasterers, and Stucco Masons	120	710	0	410	0	0	0	1,240
20.4%	499011	Mechanical Door Repairers	240	0	0	370	270	30	130	1,040
21.0%	499012	Control and Valve Installers and Repairers, Except Mechanical Door	530	0	0	380	40	60	(3)	1,007
27.3%	474071	Septic Tank Servicers and Sewer Pipe Cleaners	120	250	420	160	0	0	0	950
5.7%	474090	Miscellaneous Construction and Related Workers	0	160	350	370	60	0	0	940
63.1%	474021	Elevator Installers and Repairers	0	730	130	0	0	0	0	860
21.1%	472022	Stonemasons	690	0	0	0	0	50	0	740
7.0%	475021	Earth Drillers, Not Oil or Gas	310	0	0	170	0	0	0	480
5.4%	472042	Floor Layers, Except Carpet, Wood, and Hard Tiles	380	0	0	0	0	0	0	380
12.6%	472231	Solar Photovoltaic Installers	230	0	0	0	0	0	0	230
25.3%	472053	Terrazzo Workers and Finishers	0	0	150	0	0	0	0	150
19.0%	472131	Insulation Workers, Floor, Ceiling, and Wall	0	150	0	0	0	0	0	150
19.0%	472132	Insulation Workers, Mechanical	0	0	0	120	0	0	0	120
3.0%	475013	Service Unit Operators, Oil, Gas, and Mining	0	0	0	0	0	50	0	50
18.9%		Construction Occupations	84,450	134,800	79,310	69,930	13,640	7,010	1,727	390,867

Source: Occupational Employment (May 2017) Data, Occupational Wage Survey, CA Employment Development Department; Union Membership, Coverage, Density and Employment by Combined Statistical Area (CSA) and MSA, 2017 UnionStats © 2018 by Barry T. Hirsch and David A. Macpherson.

In addition, the U.S. Bureau of Labor Statistics reported data on the share of each occupation that was unionized nationally. It was assumed that these levels applied to Southern California. To the extent that was true, 18.9% of construction workers were in unions. This compared to 8.3% of workers in all private sector occupations in Southern California.¹¹

Reviewing these data, the 12 construction occupations in Southern California with over 10,000 workers in 2017 employed 299,040 construction workers or 76.5% of the 390,067 total:

• Construction Laborers	52,530	13.4%
• Carpenters	50,900	13.0%
• Electricians	34,660	8.9%
• First-Line Supervisors of Construction Trades and Extraction Workers	29,520	7.6%
• Plumbers, Pipefitters and Steamfitters	26,100	6.7%
• First-Line Supervisors of Mechanics, Installers, and Repairers	21,080	5.4%
• Painters, Construction and Maintenance	19,360	5.0%
• Drywall and Ceiling Tile Installers	15,380	3.9%
• Heating, Air Conditioning, and Refrigeration Mechanics and Installers	13,510	3.5%
• Operating Engineers and Other Construction Equipment Operators	12,770	3.3%
• Installation, Maintenance, and Repair Workers, All Other	11,910	3.0%
• Cement Masons and Concrete Finishers	11,320	2.9%
• TOTAL	299,040	76.5%

Median Pay

EDD has also compiled wage hourly data on the median pay for each occupation in first quarter 2018. That is the level where 50% of workers in an occupation made more and 50% made less than their colleagues. These data were multiplied by 2,080 hours on the assumption that workers were employed 8-hours a day, 5-days a week, 52-weeks a year. Below, these pay scales are shown by occupation according to the number of workers in it for Southern California (*Exhibit 8*).

For all 390,067 Southern California construction workers, the median annual pay, weighted by the number of workers in each occupation was \$54,116. For the 12 largest occupations, it was \$54,886.

• Construction Laborers	52,530	\$39,594
• Carpenters	50,900	\$51,278
• Electricians	34,660	\$61,788

- First-Line Supervisors of Construction Trades and Extraction Workers 29,520 \$77,798
- Plumbers, Pipefitters and Steamfitters 26,100 \$53,321
- First-Line Supervisors of Mechanics, Installers, and Repairers 21,080 \$74,755
- Painters, Construction and Maintenance 19,360 \$43,366
- Drywall and Ceiling Tile Installers 15,380 \$50,755
- Heating, Air Conditioning, and Refrigeration Mechanics and Installers 13,510 \$55,309
- Operating Engineers and Other Construction Equipment Operators 12,770 \$73,345
- Installation, Maintenance, and Repair Workers, All Other 11,910 \$37,706
- Cement Masons and Concrete Finishers 11,320 \$52,145
- TOTAL 299,040 \$54,886

Exhibit 8. — Median Annual Pay by Construction Occupation, Southern CA, 2018

National Union %	OES	Occupation	Inland Empire	Los Angeles	Orange	San Diego	Ventura	Santa Barbara	Imperial	So. CA
11.4%	472061	Construction Laborers	\$38,397	\$41,226	\$39,021	\$38,917	\$39,354	\$40,061	\$38,210	\$39,594
18.1%	472031	Carpenters	\$46,530	\$51,958	\$55,619	\$52,125	\$54,018	\$52,374	\$61,006	\$51,278
35.0%	472111	Electricians	\$55,349	\$68,474	\$58,136	\$61,339	\$56,722	\$58,926	\$63,190	\$61,788
17.7%	471011	First-Line Supervisors of Construction Trades and Extraction Workers	\$70,387	\$76,523	\$82,555	\$81,557	\$78,291	\$69,326	\$57,658	\$77,798
27.4%	472152	Plumbers, Pipefitters, and Steamfitters	\$49,400	\$51,085	\$55,744	\$52,832	\$51,979	\$59,758	\$50,981	\$52,321
7.2%	491011	First-Line Supervisors of Mechanics, Installers, and Repairers	\$68,370	\$78,603	\$77,875	\$67,954	\$77,002	\$70,158	\$69,930	\$74,755
8.0%	472141	Painters, Construction and Maintenance	\$41,787	\$46,155	\$40,830	\$42,869	\$39,395	\$44,179	\$44,886	\$43,366
19.6%	472081	Drywall and Ceiling Tile Installers	\$50,544	\$44,283	\$53,144	\$59,280	\$47,403	\$0	\$0	\$50,775
14.5%	499021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	\$44,034	\$62,109	\$53,997	\$56,139	\$50,752	\$0	\$45,115	\$55,309
26.0%	472073	Operating Engineers and Other Construction Equipment Operators	\$71,302	\$83,096	\$79,581	\$64,106	\$65,354	\$60,986	\$48,131	\$73,345

17.7%	4710 11	First-Line Supervisors of Construction Trades and Extraction Workers	\$70,387	\$76,523	\$82,555	\$81,557	\$78,291	\$69,326	\$57,658	\$77,798
27.4%	4721 52	Plumbers, Pipefitters, and Steamfitters	\$49,400	\$51,085	\$55,744	\$52,832	\$51,979	\$59,758	\$50,981	\$52,321
7.2%	4910 11	First-Line Supervisors of Mechanics, Installers, and Repairers	\$68,370	\$78,603	\$77,875	\$67,954	\$77,002	\$70,158	\$69,930	\$74,755
8.0%	4721 41	Painters, Construction and Maintenance	\$41,787	\$46,155	\$40,830	\$42,869	\$39,395	\$44,179	\$44,886	\$43,366
19.6%	4720 81	Drywall and Ceiling Tile Installers	\$50,544	\$44,283	\$53,144	\$59,280	\$47,403	\$0	\$0	\$50,775
14.5%	4990 21	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	\$44,034	\$62,109	\$53,997	\$56,139	\$50,752	\$0	\$45,115	\$55,309
26.0%	4720 73	Operating Engineers and Other Construction Equipment Operators	\$71,302	\$83,096	\$79,581	\$64,106	\$65,354	\$60,986	\$48,131	\$73,345
12.6%	4990 99	Installation, Maintenance, and Repair Workers, All Other	\$38,106	\$36,379	\$38,106	\$38,875	\$43,784	\$40,810	\$27,206	\$37,706
25.3%	4720 51	Cement Masons and Concrete Finishers	\$50,211	\$54,434	\$48,942	\$58,344	\$55,765	\$51,002	\$39,686	\$52,145
6.5%	4721 81	Roofers	\$49,046	\$54,038	\$51,418	\$42,765	\$53,747	\$49,130	\$0	\$50,439
9.6%	4990 98	Helpers—Installation, Maintenance, and Repair Workers	\$27,934	\$30,680	\$28,600	\$32,739	\$29,557	\$24,731	\$27,206	\$29,918
20.4%	4930 42	Mobile Heavy Equipment Mechanics, Except Engines	\$62,130	\$65,582	\$61,443	\$57,117	\$54,413	\$60,840	\$55,890	\$62,598
27.8%	4722 11	Sheet Metal Workers	\$58,656	\$54,267	\$46,384	\$59,322	\$47,694	\$69,722	\$0	\$54,747
24.0%	4740 11	Construction and Building Inspectors	\$89,981	\$90,542	\$89,045	\$78,291	\$78,395	\$82,181	\$58,864	\$86,815
11.6%	4721 61	Plasterers and Stucco Masons	\$40,830	\$44,720	\$47,715	\$56,264	\$43,888	\$47,050	\$0	\$46,908
19.6%	4720 82	Tapers	\$56,493	\$48,443	\$48,526	\$56,493	\$47,403	\$45,573	\$0	\$52,270
5.4%	4720 44	Tile and Marble Setters	\$62,442	\$39,208	\$49,067	\$46,030	\$38,896	\$49,858	\$0	\$46,304
56.3%	4722 21	Structural Iron and Steel Workers	\$73,195	\$57,325	\$0	\$68,973	\$0	\$0	\$0	\$66,036
15.7%	4721 21	Glaziers	\$44,637	\$55,494	\$60,050	\$49,962	\$0	\$65,874	\$0	\$52,925
50.2%	4920 94	Electrical and Electronics Repairers, Commercial and Industrial Equipment	\$65,187	\$54,850	\$53,560	\$61,339	\$64,085	\$63,274	\$0	\$57,883
5.4%	4720 41	Carpet Installers	\$54,475	\$49,504	\$44,949	\$44,179	\$0	\$39,354	\$0	\$47,961
34.5%	4740 41	Hazardous Materials Removal Workers	\$39,582	\$44,096	\$39,666	\$47,819	\$35,922	\$0	\$0	\$43,010
21.1%	4720 21	Brickmasons and blockmasons	\$57,242	\$55,474	\$57,408	\$67,933	\$75,899	\$0	\$0	\$58,997

National Union %	OES	Occupation	Inland Empire	Los Angeles	Orange	San Diego	Ventura	Santa Barbara	Imperial	So. CA
10.3%	4730 11	Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	\$36,504	\$31,408	\$34,902	\$45,802	\$0	\$36,234	\$0	\$35,337
10.3%	4730 12	Helpers--Carpenters	\$28,205	\$36,421	\$31,886	\$30,722	\$0	\$0	\$0	\$32,428
10.3%	4730 13	Helpers--Electricians	\$31,387	\$35,381	\$0	\$0	\$0	\$0	\$0	\$34,292
27.4%	4721 51	Pipe layers	\$52,416	\$54,205	\$48,256	\$51,022	\$0	\$0	\$0	\$51,279
30.5%	4740 51	Highway Maintenance Workers	\$45,885	\$51,168	\$57,574	\$51,626	\$53,747	\$55,806	\$0	\$51,255
12.8%	4720 71	Paving, Surfacing, and Tamping Equipment Operators	\$87,110	\$54,891	\$0	\$53,851	\$0	\$0	\$0	\$67,703
1.8%	4740 31	Fence Erectors	\$0	\$56,264	\$38,730	\$48,942	\$0	\$0	\$0	\$49,561
10.3%	4730 19	Helpers, Construction Trades, All Other	\$27,352	\$31,845	\$37,274	\$25,085	\$0	\$0	\$0	\$30,619
59.7%	4721 71	Reinforcing Iron and Rebar Workers	\$31,325	\$44,720	\$35,776	\$50,752	\$0	\$0	\$0	\$40,803
10.3%	4730 15	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	\$29,827	\$31,200	\$34,486	\$0	\$0	\$0	\$0	\$32,312
10.3%	4730 14	Helpers--Painters, Paperhangers, Plasterers, and Stucco Masons	\$36,733	\$27,082	\$0	\$42,141	\$0	\$0	\$0	\$32,995
20.4%	4990 11	Mechanical Door Repairers	\$38,834	\$0	\$0	\$44,554	\$25,355	\$28,226	\$27,518	\$35,649
21.0%	4990 12	Control and Valve Installers and Repairers, Except Mechanical Door	\$67,933	\$0	\$0	\$77,418	\$78,853	\$59,530	\$0	\$71,647
27.3%	4740 71	Septic Tank Servicers and Sewer Pipe Cleaners	\$47,237	\$42,973	\$44,741	\$38,792	\$0	\$0	\$0	\$43,589
5.7%	4740 90	Miscellaneous Construction and Related Workers	\$0	\$42,578	\$48,277	\$36,254	\$45,594	\$0	\$0	\$42,403
63.1%	4740 21	Elevator Installers and Repairers	\$0	\$93,808	\$0	\$0	\$0	\$0	\$0	\$78,370
21.1%	4720 22	Stonemasons	\$43,451	\$0	\$0	\$0	\$0	\$41,808	\$0	\$43,340
7.0%	4750 21	Earth Drillers, Except Oil and Gas	\$85,862	\$0	\$0	\$51,813	\$0	\$0	\$0	\$73,803
5.4%	4720 42	Floor Layers, Except Carpet, Wood, and Hard Tiles	\$36,462	\$0	\$0	\$0	\$0	\$0	\$0	\$36,462
12.6%	4722 31	Solar Photovoltaic Installers	\$39,104	\$0	\$0	\$0	\$0	\$0	\$0	\$39,104
25.3%	4720 53	Terrazzo Workers and Finishers	\$0	\$0	\$53,040	\$0	\$0	\$0	\$0	\$53,040
19.0%	4721 31	Insulation Workers, Floor, Ceiling, and Wall	\$0	\$31,803	\$0	\$0	\$0	\$0	\$0	\$31,803

19.0%	4721 32	Insulation Workers, Mechanical	\$0	\$0	\$0	\$48,922	\$0	\$0	\$0	\$48,922
3.0%	4750 13	Service Unit Operators, Oil, Gas, and Mining	\$0	\$0	\$0	\$0	\$0	\$43,326	\$0	\$43,326
18.9%		Construction Occupations	\$51,287	\$55,579	\$54,530	\$54,625	\$53,133	\$53,535	\$49,255	\$54,116

Source: Occupational Wage (2018-1st Quarter) Data, Occupational Wage Survey, CA Employment Development Department; Union Membership, Coverage, Density and Employment by Combined Statistical Area (CSA) and MSA, 2017 UnionStats, © 2018 by Barry T. Hirsch and David A. Macpherson. Median pay level is shown.

Occupations Able To Afford Median Priced Southern California Homes

Given these data, the question arises as to the extent that workers in the various occupations working in each of the counties could afford the median priced homes in any of Southern California major markets. Incomes required to purchase median homes in four major markets were considered:

- Orange County \$177,050 income for the median home (\$830,000)
- San Diego County \$138,650 income for the median home (\$650,000)
- Los Angeles County \$134,160 income for the median home (\$628,840)
- Inland Empire \$77,330 income for the median home (\$362,500)

Worker pay in each of the 50 construction occupations in the seven Southern California counties were reviewed:

- **Orange County:** No construction workers in any occupation had the \$177,050 income to afford the \$830,000 median priced home.
- **San Diego County:** No construction workers in any occupation had the \$138,650 income to afford the median priced home.
- **Los Angeles County:** No construction workers in any occupation had the \$134,160 income to afford the median priced home.
- **Inland Empire:** Only 7,520 tradesmen and 32,760 supervisors and inspectors from throughout Southern California could afford the \$77,330 income needed to afford the median priced home. These 40,280 workers represented 10.3% of people in the construction industry: tradesmen (1.9%), supervisors and inspectors (8.4%).
 - First-Line Supervisors of Construction Trades and Extraction Workers with jobs in Orange, San Diego and Ventura counties (13,920)

- First-Line Supervisors of Mechanics, Installers, and Repairers with jobs in Los Angeles and Orange counties (12,900)
- Operating Engineers and Other Construction Equipment Operators with jobs in Los Angeles and Orange counties (5,400).
- Construction and Building Inspectors with jobs in every county but Imperial (5,940)
- Paving, Surfacing, and Tamping Equipment Operators with Inland Empire jobs (660)
- Control and Valve Installers and Repairers, Except Mechanical Door with jobs in San Diego and Ventura counties (420)
- Elevator Installers and Repairers with jobs in Los Angeles County (730)
- Earth Drillers, Except Oil and Gas with jobs in the Inland Empire (310)

Median Paid Occupations Ability To Afford First Time Homes

A second question is the extent that workers in the various occupations in each of the counties could afford first time homes in any of Southern California major markets. Incomes required to purchase median homes in the four major markets were considered:

- Orange County \$114,400 income for the median home (\$705,500)
- San Diego County \$89,590 income for the median home (\$552,500)
- Los Angeles County \$86,690 income for the median home (\$534,600)
- Inland Empire \$49,970 income for the median home (\$308,120)

Worker pay for each of the 50 occupations in the seven Southern California counties were reviewed:

- **Orange County:** Again, no construction workers in occupations in the southern counties had the \$114,400 income to afford the \$705,500 entry level priced home.
- **San Diego County:** There were two cases of 4,090 construction workers in occupations that had the \$89,590 income needed to afford the entry level priced home. They represented 1.0% of the 390,867 construction workers:
 - Construction and Building Inspectors in Los Angeles County and the Inland Empire (3,360)

- Elevator Installers and Repairers in Los Angeles County (730)
- **Los Angeles County:** There were three cases of 5,730 construction workers in occupations that had the \$86,690 income needed to afford the entry level priced home. They represented 1.5% of the 390,867 construction workers:
 - Construction and Building Inspectors Los Angeles and Orange counties and the Inland Empire (4,340)
 - Elevator Installers and Repairers in Los Angeles County (730)
 - Paving, Surfacing, and Tamping Equipment Operators in the Inland Empire (660)
- **Inland Empire:** There were 121 cases in which 230,740 construction workers in occupations had the \$49,970 income needed to afford the entry level priced home. They represented workers in 30 of the 50 construction occupations and 59.0% of the 390,867 construction workers. They worked in several Southern California areas:
 - Carpenters in all but Imperial County (36,940)
 - Electricians in every county (34,660)
 - First-Line Supervisors of Construction Trades and Extraction Workers in every county (29,520)
 - Plumbers, Pipefitters, and Steamfitters in all but the Inland Empire (21,480)
 - First-Line Supervisors of Mechanics, Installers, and Repairers in every county (21,080)
 - Operating Engineers and Other Construction Equipment Operators in all but Imperial County (12,540)
 - Heating, Air Conditioning, and Refrigeration Mechanics and Installers in Los Angeles, Orange, San Diego and Ventura counties (10,440)
 - Drywall and Ceiling Tile Installers in Orange and San Diego counties and the Inland Empire (9,860)
 - Cement Masons and Concrete Finishers in all but Orange and Imperial counties (7,830)
 - Mobile Heavy Equipment Mechanics, Except Engines in every county (6,860)
 - Construction and Building Inspectors in every county (5,970)
 - Sheet Metal Workers in Los Angeles, San Diego, Santa Barbara counties and Inland Empire (5,020)
 - Roofers in Los Angeles, Orange and Ventura counties (4,980)
 - Structural Iron and Steel Workers in Los Angeles, San Diego counties and the Inland Empire (3,690)
 - Electrical and Electronics Repairers, Commercial and Industrial Equipment in all but Imperial County (3,530)

- Brick masons and Block masons in all but Santa Barbara and Imperial counties (2,610)
- Tapers in San Diego County and the Inland Empire (2,240)
- Glaziers in Los Angeles, Orange and Santa Barbara counties (2,110)
- Paving, Surfacing, and Tamping Equipment Operators in Los Angeles and San Diego counties and the Inland Empire (1,620)
- Highway Maintenance Workers except in the Inland Empire and Imperial County (1,320)
- Pipe layers in Los Angeles, San Diego counties and the Inland Empire (1,060)
- Control and Valve Installers and Repairers, Except Mechanical Door in San Diego, Ventura, Santa Barbara counties and the Inland Empire (1,010)
- Plasterers and Stucco Masons in San Diego County (780)
- Elevator Installers and Repairers in Los Angeles County (730)
- Fence Erectors in Los Angeles County (710)
- Tile and Marble Setters in the Inland Empire (640)
- Carpet Installers in the Inland Empire (490)
- Earth Drillers, Except Oil and Gas in San Diego County and the Inland Empire (480)
- Reinforcing Iron and Rebar Workers in San Diego County (390)
- Terrazzo Workers and Finishers in Orange County (150)

Summary: All Southern California Construction Workers

Based upon this analysis, it is clear that except for a very few construction workers, primarily in management or inspection occupations, those earning the median annual income in their occupation could not afford the **median priced homes** in Los Angeles, Orange, or San Diego counties and even in the Inland Empire.

This applies as well to **lower priced entry level homes** in Los Angeles, Orange and San Diego counties which remain out of reach for all but a very few median paid construction workers. However, the much lower price for an entry level home in the Inland Empire (*\$308,120*) has created the ability for about half of construction workers in the several counties to buy a home. Most would have to migrate to it from their work in other Southern California counties. Here, it should be noted again that affordable Inland Empire homes tend to be farther from the borders of the adjacent coastal counties, adding to commute times for workers who chose to migrate and drive to work.

Estimated Union Workers by Occupation and County

To estimate union membership by occupation, the national figures on the share of union workers in each occupation were used. Altogether, the result was an estimate of 73,720 union members or 18.9% of the total of 390,867 Southern California construction workers (*Exhibit 9*). Again, data on the occupations is shown in order of numerical importance. For each occupation, the information shows the number of estimated union workers with jobs in each of the seven Southern California counties.

Exhibit 9. – Estimated Union Construction Workers, Occupation, Southern CA, 2017										
National Union %	OES	Occupation	Inland Empire	Los Angeles	Orange	San Diego	Ventura	Santa Barbara	Imperial	So. CA
35.0%	472111	Electricians	2,128	4,092	2,807	2,475	361	196	74	12,131
18.1%	472031	Carpenters	2,527	2,925	1,681	1,490	384	186	20	9,213
27.4%	472152	Plumbers, Pipefitters, and Steamfitters	1,266	2,452	1,534	1,351	370	132	47	7,151
11.4%	472061	Construction Laborers	1,408	1,937	1,289	1,017	212	96	30	5,988
17.7%	471011	First-Line Supervisors of Construction Trades and Extraction Workers	910	1,743	1,313	989	161	94	14	5,225
26.0%	472073	Operating Engineers and Other Construction Equipment Operators	957	881	523	627	177	96	60	3,320
19.6%	472081	Drywall and Ceiling Tile Installers	602	980	729	602	102	0	0	3,014
25.3%	472051	Cement Masons and Concrete Finishers	670	875	875	309	89	38	8	2,864
56.3%	472221	Structural Iron and Steel Workers	636	754	0	687	0	0	0	2,077
14.5%	499021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	436	800	318	332	64	0	9	1,959
27.8%	472211	Sheet Metal Workers	409	473	434	473	75	42	0	1,904
50.2%	492094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	316	542	517	306	30	60	0	1,772
8.0%	472141	Painters, Construction and Maintenance	254	557	325	310	54	46	3	1,549
7.2%	491011	First-Line Supervisors of Mechanics, Installers, and Repairers	295	676	253	208	45	31	10	1,518
12.6%	499099	Installation, Maintenance, and Repair Workers, All Other	237	617	234	340	38	26	8	1,501

National Union %	OES	Occupation	Inland Empire	Los Angeles	Orange	San Diego	Ventura	Santa Barbara	Imperial	So. CA
24.0%	4740 11	Construction and Building Inspectors	259	547	235	312	50	22	7	1,433
20.4%	4930 42	Mobile Heavy Equipment Mechanics, Except Engines	369	622	151	153	57	22	24	1,399
34.5%	4740 41	Hazardous Materials Removal Workers	145	462	159	145	24	0	0	935
19.6%	4720 82	Tapers	245	182	159	194	102	10	0	892
59.7%	4721 71	Reinforcing Iron and Rebar Workers	191	185	245	233	0	0	0	854
9.6%	4990 98	Helpers--Installation, Maintenance, and Repair Workers	150	321	100	99	12	14	6	701
15.7%	4721 21	Glaziers	148	214	100	89	0	17	0	568
21.1%	4720 21	Brickmasons and Blockmasons	192	127	150	46	36	0	0	551
63.1%	4740 21	Elevator Installers and Repairers	0	461	82	0	0	0	0	543
11.6%	4721 61	Plasterers and Stucco Masons	82	183	139	90	20	16	0	531
6.5%	4721 81	Roofers	105	175	131	85	18	18	0	530
30.5%	4740 51	Highway Maintenance Workers	92	223	49	82	24	24	0	494
27.4%	4721 51	Pipelayers	123	118	156	49	0	0	0	447
27.3%	4740 71	Septic Tank Servicers and Sewer Pipe Cleaners	33	68	115	44	0	0	0	259
20.4%	4990 11	Mechanical Door Repairers	49	0	0	75	55	6	27	212
21.0%	4990 12	Control and Valve Installers and Repairers, Except Mechanical Door	111	0	0	80	8	13	(1)	211
12.8%	4720 71	Paving, Surfacing, and Tamping Equipment Operators	84	60	0	63	0	0	0	207
5.4%	4720 44	Tile and Marble Setters	35	87	37	24	10	11	0	204
10.3%	4730 11	Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	48	79	36	25	0	13	0	202
10.3%	4730 12	Helpers--Carpenters	36	60	56	33	0	0	0	184
5.4%	4720 41	Carpet Installers	26	73	32	45	0	2	0	179
10.3%	4730 13	Helpers--Electricians	46	124	0	0	0	0	0	170
21.1%	4720 22	Stonemasons	146	0	0	0	0	11	0	156

National Union %	OES	Occupation	Inland Empire	Los Angeles	Orange	San Diego	Ventura	Santa Barbara	Imperial	So. CA
10.3%	473019	Helpers, Construction Trades, All Other	35	37	41	37	0	0	0	150
10.3%	473015	Helpers--Pipefitters, Plumbers, Pipefitters, and Steamfitters	12	73	52	0	0	0	0	137
10.3%	473014	Helpers--Painters, Paperhangers, Plasterers, and Stucco Masons	12	73	0	42	0	0	0	128
5.7%	474090	Miscellaneous Construction and Related Workers	0	9	20	21	3	0	0	54
25.3%	472053	Terrazzo Workers and Finishers	0	0	38	0	0	0	0	38
7.0%	475021	Earth Drillers, Except Oil and Gas	22	0	0	12	0	0	0	34
12.6%	472231	Solar Photovoltaic Installers	29	0	0	0	0	0	0	29
19.0%	472131	Insulation Workers, Floor, Ceiling, and Wall	0	29	0	0	0	0	0	29
1.8%	474031	Fence Erectors	0	13	8	6	0	0	0	26
19.0%	472132	Insulation Workers, Mechanical	0	0	0	23	0	0	0	23
5.4%	472042	Floor Layers, Except Carpet, Wood, and Hard Tiles	21	0	0	0	0	0	0	21
3.0%	475013	Service Unit Operators, Oil, Gas, and Mining	0	0	0	0	0	2	0	2
18.9%		Construction Occupations	15,928	25,424	14,958	13,189	2,573	1,322	326	73,720

Source: National share of union workers multiplied by the number of workers in each occupation in each county.

Reviewing these data, the heaviest concentration of Southern California union construction workers by occupation was in jobs with roughly 1,775 workers or higher. In 2017, they included 56,620 of the estimated 73,720 union construction workers or 76.8%:

- Electricians 12,131 16.5%
- Carpenters 9,213 12.5%
- Plumbers, Pipefitters, and Steamfitters 7,151 9.7%
- Construction Laborers 5,988 8.1%
- First-Line Supervisors of Construction Trades and Extraction Workers 5,225 7.1%
- Operating Engineers and Other Construction Equipment Operators 3,320 4.5%
- Drywall and Ceiling Tile Installers 3,014 4.1%

- Cement Masons and Concrete Finishers 2,864 3.9%
- Structural Iron and Steel Workers 2,077 2.8%
- Heating, Air Conditioning, and Refrigeration Mechanics and Installers 1,959 2.7%
- Sheet Metal Workers 1,904 2.6%
- Electrical and Electronics Repairers, Commercial and Industrial Equipment 1,772 2.4%
- TOTAL 56,620 76.8%

Pay For Union Workers by Occupation

Given the estimated distribution of union workers by occupation, it was next necessary to estimate their pay levels. Here, the same 2018 source was the EDD data on pay scales by occupation. As union workers are assumed to earn more than the median income for their occupation, the information used was for the wage levels of workers making above 75% of those in their occupation (*Exhibit 10*). These data were multiplied by 2,080 hours on the assumption that workers were employed 8-hours a day, 5-days a week, 52-weeks a year. These pay scales are shown for each occupation according to the number of workers in it (*Exhibit 10*). For all 73,720 workers, the median annual pay, weighted by the number of workers in the occupation, the income was \$73,258.

Exhibit 10. – Estimated Union Construction Worker Pay, Occupation, So. CA, 2018										
National Union %	OES	Occupation	Inland Empire	Los Angeles	Orange	San Diego	Ventura	Santa Barbara	Imperial	So. CA
35.0%	4721 11	Electricians	\$68,93 1	\$89,64 8	\$75,71 2	\$84,86 4	\$73,73 6	\$75,50 4	\$56,72 2	\$80,913
18.1%	4720 31	Carpenters	\$62,94 1	\$65,35 4	\$76,96 0	\$63,58 6	\$63,46 1	\$65,66 6	\$54,01 8	\$66,427
27.4%	4721 52	Plumbers, Pipefitters, and Steamfitters	\$61,02 7	\$67,01 8	\$77,48 0	\$62,33 8	\$64,81 3	\$71,98 9	\$51,97 9	\$67,197
11.4%	4720 61	Construction Laborers	\$53,56 0	\$59,94 6	\$56,13 9	\$51,73 0	\$60,71 5	\$59,94 6	\$39,35 4	\$56,155
17.7%	4710 11	First-Line Supervisors of Construction Trades and Extraction Workers	\$89,48 2	\$97,40 6	\$100,2 56	\$100,2 77	\$102,8 14	\$81,70 2	\$78,29 1	\$97,119
26.0%	4720 73	Operating Engineers and Other Construction Equipment Operators	\$95,20 2	\$99,05 0	\$94,53 6	\$88,06 7	\$89,08 6	\$76,29 4	\$65,35 4	\$93,361
19.6%	4720 81	Drywall and Ceiling Tile Installers	\$81,03 7	\$71,36 5	\$80,62 1	\$76,75 2	\$78,68 6	\$0	\$0	\$76,857
25.3%	4720 51	Cement Masons and Concrete Finishers	\$67,26 7	\$73,92 3	\$67,01 8	\$73,46 6	\$67,53 8	\$0	\$55,76 5	\$68,980

National Union %	OES	Occupation	Inland Empire	Los Angeles	Orange	San Diego	Ventura	Santa Barbara	Imperial	So. CA
56.3%	472221	Structural Iron and Steel Workers	\$80,995	\$77,854	\$0	\$86,466	\$0	\$0	\$0	\$81,663
14.5%	499021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	\$56,909	\$81,370	\$67,496	\$64,854	\$61,755	\$68,266	\$50,752	\$70,097
27.8%	472211	Sheet Metal Workers	\$73,507	\$78,936	\$62,150	\$69,597	\$60,237	\$78,936	\$0	\$70,893
50.2%	492094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	\$76,606	\$78,270	\$66,123	\$75,400	\$90,397	\$82,555	\$64,085	\$74,285
8.0%	472141	Painters, Construction and Maintenance	\$56,930	\$60,320	\$50,814	\$57,013	\$46,800	\$53,269	\$39,395	\$56,383
7.2%	491011	First-Line Supervisors of Mechanics, Installers, and Repairers	\$86,445	\$101,982	\$96,741	\$81,286	\$97,302	\$82,701	\$77,002	\$94,553
12.6%	499099	Installation, Maintenance, and Repair Workers, All Other	\$53,352	\$50,898	\$53,560	\$51,792	\$56,472	\$64,397	\$43,784	\$52,246
24.0%	474011	Construction and Building Inspectors	\$110,365	\$101,733	\$102,939	\$96,928	\$92,102	\$95,826	\$78,395	\$101,901
20.4%	493042	Mobile Heavy Equipment Mechanics, Except Engines	\$73,715	\$93,350	\$75,421	\$63,586	\$63,523	\$65,166	\$54,413	\$80,631
34.5%	474041	Hazardous Materials Removal Workers	\$82,867	\$53,227	\$56,805	\$66,643	\$41,538	\$0	\$0	\$60,205
19.6%	472082	Tapers	\$76,003	\$74,589	\$68,411	\$71,469	\$74,589	\$58,490	\$0	\$73,022
59.7%	472171	Reinforcing Iron and Rebar Workers	\$50,814	\$51,771	\$40,643	\$63,024	\$0	\$0	\$0	\$51,435
9.6%	499098	Helpers—Installation, Maintenance, and Repair Workers	\$36,275	\$39,333	\$34,611	\$40,914	\$41,413	\$29,203	\$29,557	\$37,975
15.7%	472121	Glaziers	\$66,768	\$64,522	\$87,048	\$65,874	\$0	\$82,971	\$0	\$69,861
21.1%	472021	Brickmasons and Blockmasons	\$68,536	\$68,952	\$67,434	\$76,586	\$84,510	\$0	\$0	\$70,051
63.1%	474021	Elevator Installers and Repairers	\$0	\$118,539	\$0	\$0	\$0	\$0	\$0	\$100,620
11.6%	472161	Plasterers and Stucco Masons	\$48,776	\$60,819	\$71,302	\$62,234	\$58,157	\$60,819	\$0	\$61,841
6.5%	472181	Roofers	\$58,074	\$68,224	\$66,893	\$55,307	\$62,546	\$68,224	\$0	\$63,641
30.5%	474051	Highway Maintenance Occup.	\$57,574	\$64,230	\$71,282	\$58,510	\$58,739	\$60,653	\$0	\$62,293
27.4%	472151	Pipelayers	\$67,766	\$62,192	\$64,709	\$61,090	\$0	\$0	\$0	\$64,489
27.3%	474071	Septic Tank Servicers and Sewer Pipe Cleaners	\$59,488	\$52,562	\$65,666	\$49,150	\$0	\$0	\$0	\$58,655
21.0%	499012	Control and Valve Installers and Repairers, Except Mechanical Door	\$81,037	\$0	\$0	\$91,499	\$94,869	\$78,749	\$78,853	\$85,404

21.0%	499012	Control and Valve Installers and Repairers, Except Mechanical Door	\$81,037	\$0	\$0	\$91,499	\$94,869	\$78,749	\$78,853	\$85,404
12.8%	472071	Paving, Surfacing, and Tamping Equipment Operators	\$97,843	\$65,874	\$0	\$66,206	\$0	\$0	\$0	\$78,999
5.4%	472044	Tile and Marble Setters	\$109,616	\$49,067	\$57,782	\$61,318	\$49,296	\$67,163	\$0	\$63,361
10.3%	473011	Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	\$46,155	\$38,043	\$39,208	\$73,986	\$0	\$38,958	\$0	\$44,658
10.3%	473012	Helpers--Carpenters	\$39,312	\$44,034	\$36,878	\$42,702	\$0	\$0	\$0	\$40,714
5.4%	472041	Carpet Installers	\$66,414	\$73,133	\$65,125	\$59,384	\$0	\$54,038	\$0	\$67,027
10.3%	473013	Helpers--Electricians	\$39,541	\$44,262	\$0	\$0	\$0	\$0	\$0	\$42,975
21.1%	472022	Stonemasons	\$52,541	\$0	\$0	\$0	\$0	\$53,830	\$0	\$52,628
10.3%	473019	Helpers, Construction Trades, All Other	\$36,046	\$46,634	\$46,530	\$29,016	\$0	\$0	\$0	\$39,796
10.3%	473015	Helpers--Pipefitters, Plumbers, Pipefitters, and Steamfitters	\$32,157	\$37,024	\$39,125	\$0	\$0	\$0	\$0	\$37,375
10.3%	473014	Helpers--Painters, Paperhangers, Plasterers, and Stucco Masons	\$48,069	\$39,416	\$0	\$47,216	\$0	\$0	\$0	\$42,832
5.7%	474090	Miscellaneous Construction and Related Workers	\$0	\$52,520	\$57,179	\$41,829	\$51,522	\$0	\$0	\$49,983
25.3%	472053	Terrazzo Workers and Finishers	\$0	\$0	\$71,885	\$0	\$0	\$0	\$0	\$71,885
7.0%	475021	Earth Drillers, Except Oil and Gas	\$97,864	\$0	\$0	\$68,058	\$0	\$62,878	\$0	\$87,308
12.6%	472231	Solar Photovoltaic Installers	\$53,248	\$0	\$0	\$50,461	\$0	\$0	\$0	\$53,248
19.0%	472131	Insulation Workers, Floor, Ceiling, and Wall	\$0	\$57,782	\$0	\$0	\$0	\$0	\$0	\$57,782
1.8%	474031	Fence Erectors	\$0	\$72,592	\$49,878	\$65,187	\$0	\$0	\$0	\$64,390
19.0%	472132	Insulation Workers, Mechanical	\$0	\$0	\$0	\$65,603	\$0	\$0	\$0	\$65,603
5.4%	472042	Floor Layers, Except Carpet, Wood, and Hard Tiles	\$47,736	\$0	\$0	\$0	\$0	\$0	\$0	\$47,736
3.0%	475013	Service Unit Operators, Oil, Gas, and Mining	\$0	\$0	\$0	\$0	\$0	\$49,941	\$0	\$49,941
18.9%		Construction Occupations	\$69,292	\$74,827	\$74,285	\$75,459	\$71,224	\$64,476	\$60,140	\$73,259

Source: Occupational Wage (2018-1st Quarter) Data, Occupational Wage Survey, CA Employment Development Department; Union Membership, Coverage, Density and Employment by Combined Statistical Area (CSA) and MSA, 2017 UnionStats, © 2018 by Barry T. Hirsch and David A. Macpherson. 75% pay threshold is shown.

For all 73,720 Southern California union construction workers, the estimated annual pay, weighted by the number of workers in each occupation was \$73,258. For the 12 largest occupations, it was \$74,719:

• Electricians	12,131	\$80,913
• Carpenters	9,213	\$66,427
• Plumbers, Pipefitters, and Steamfitters	7,151	\$67,197
• Construction Laborers	5,988	\$56,155
• First-Line Supervisors of Construction Trades and Extraction Workers	5,225	\$97,119
• Operating Engineers and Other Construction Equipment Operators	3,320	\$93,361
• Drywall and Ceiling Tile Installers	3,014	\$76,857
• Cement Masons and Concrete Finishers	2,864	\$68,980
• Structural Iron and Steel Workers	2,077	\$81,663
• Heating, Air Conditioning, and Refrigeration Mechanics and Installers	1,959	\$70,097
• Sheet Metal Workers	1,904	\$70,893
• Electrical and Electronics Repairers, Commercial and Industrial Equipment	1,772	\$74,285
• Largest 12 Employing Occupations	56,620	\$74,719

Ability To Afford Median Priced Homes at Union Pay

Given these data, the question arises as to the extent that better paid union workers in the various construction occupations in each of the counties could afford the median priced homes in any of Southern California major markets. Again, the incomes required to purchase median homes in four major markets were considered:

• Orange County	\$177,050 income for the median home (\$830,000)
• San Diego County	\$138,650 income for the median home (\$650,000)
• Los Angeles County	\$134,160 income for the median home (\$628,840)
• Inland Empire	\$77,330 income for the median home (\$362,500)

Pay for each of the 50 occupations in the seven Southern California counties were considered:

- **Orange County:** No union member in any occupation had the \$177,050 income to afford the \$830,000 median priced home.
- **San Diego County:** No union construction worker in any occupation had the \$138,650 income to afford the \$650,000 median priced home.
- **Los Angeles County:** No union construction worker in any occupation had the \$134,160 income to afford the \$628,840 median priced home.
- **Inland Empire:** There were 52 cases of union construction workers in occupations that had the \$77,330 income needed to afford the median priced home. They were in 19 occupations and included 25,140 workers or 34.1% of 73,720 estimated union workers in the construction industry:
 - Electricians in Los Angeles, San Diego counties (6,566)
 - First-Line Supervisors of Construction Trades and Extraction Workers in every county (5,225)
 - Operating Engineers and Other Construction Equipment Operators in all but Santa Barbara, Imperial counties(3,164)
 - Structural Iron and Steel Workers in Los Angeles, San Diego counties and the Inland Empire (2,077)
 - First-Line Supervisors of Mechanics, Installers, and Repairers in all but Imperial County (1,508)
 - Construction and Building Inspectors in every county (1,433)
 - Drywall and Ceiling Tile Installers in Orange, Ventura counties and the Inland Empire (1,433)
 - Heating, Air Conditioning, and Refrigeration Mechanics and Installers in Los Angeles County (800)
 - Electrical and Electronics Repairers, Commercial and Industrial Equipment in Los Angeles, Ventura, Santa Barbara counties (633)
 - Mobile Heavy Equipment Mechanics, Except Engines in Los Angeles County (622)
 - Elevator Installers and Repairers in Los Angeles County (461)
 - Sheet Metal Workers in Los Angeles, Santa Barbara counties (514)
 - Control and Valve Installers and Repairers, Except Mechanical Door in San Diego, Ventura, Santa Barbara counties and the Inland Empire (212)
 - Hazardous Materials Removal Workers in the Inland Empire(145)
 - Glaziers in Orange and Santa Barbara counties (118)
 - Tile and Marble Setters in the Inland Empire (87)

- Paving, Surfacing, and Tamping Equipment Operators in the Inland Empire (84)
- Brick masons and Block masons in Ventura County (36)
- Earth Drillers, Except Oil and Gas in the Inland Empire (22)

Union Construction Workers Ability To Afford First Time Homes

Another question is the extent that union workers in the various occupations in each of the counties could afford the lower priced first time homes in any of Southern California major markets. Incomes required to purchase median homes in four areas were considered:

- Orange County \$114,400 income for the median home (\$705,500)
- San Diego County \$89,590 income for the median home (\$552,500)
- Los Angeles County \$86,690 income for the median home (\$534,600)
- Inland Empire \$49,970 income for the median home (\$308,120)

Pay for each of the 50 occupations in the seven Southern California counties were considered:

- **Orange County:** Only one union occupation with 461 union workers yielded sufficient income to meet the \$114,400 income to afford the \$705,500 entry level priced home. It represented 0.6% of the 73,720 union construction workers.
 - Elevator Installers and Repairers in Los Angeles County (461)
- **San Diego County:** There were 24 cases in 11 occupations with 10,309 union construction workers that had the \$89,590 income needed to afford the \$552,500 entry level priced home. It represented 14.0% of the 73,720 union construction workers:
 - First-Line Supervisors of Construction Trades and Extraction Workers in Los Angeles, Orange, San Diego, Ventura counties (4,207)
 - Operating Engineers and Other Construction Equipment Operators in Los Angeles, Orange counties and the Inland Empire (2,361)
 - Construction and Building Inspectors in all but Imperial County (1,426)
 - First-Line Supervisors of Mechanics, Installers, and Repairers in Los Angeles, Orange, Ventura counties (973)

- Mobile Heavy Equipment Mechanics, Except Engines in Los Angeles County (622)
- Elevator Installers and Repairers in Los Angeles County (461)
- Control and Valve Installers and Repairers, Not Mechanical Door in San Diego, Ventura counties (88)
- Paving, Surfacing, and Tamping Equipment Operators in the Inland Empire (84)
- Tile and Marble Setters in the Inland Empire (35)
- Electrical and Electronics Repairers, Commercial and Industrial Equipment in Ventura County (30)
- Earth Drillers, Except Oil and Gas in the Inland Empire (22)
- **Los Angeles County:** There were 28 cases in 12 occupations with 16,114 union construction workers in occupations that had the \$86,690 income needed to afford the \$534,600 entry level priced home. This represented 21.9% of the 73,720 union workers:
 - First-Line Supervisors of Construction Trades and Extraction Workers in all but Santa Barbara and Imperial counties (5,117)
 - Electricians in Los Angeles County (4,092)
 - Operating Engineers and Other Construction Equipment Operators in all but Santa Barbara and Imperial counties (3,164)
 - Construction and Building Inspectors in all but Imperial County (1,426)
 - First-Line Supervisors of Mechanics, Installers, and Repairers in Los Angeles, Orange, Ventura counties (973)
 - Mobile Heavy Equipment Mechanics, Except Engines in Los Angeles County (622)
 - Elevator Installers and Repairers in Los Angeles County (461)
 - Control and Valve Installers and Repairers, Not Mechanical Door in San Diego, Ventura counties (88)
 - Paving, Surfacing, and Tamping Equipment Operators in the Inland Empire (84)
 - Tile and Marble Setters in the Inland Empire (35)
 - Electrical and Electronics Repairers, Commercial and Industrial Equipment in Ventura County (30)
 - Earth Drillers, Except Oil and Gas in the Inland Empire (22)
- **Inland Empire:** There were 191 cases in 42 of 50 occupations with 71,316 construction workers earned at least the \$49,970 income needed to afford the entry level priced home. They represented 96.7% of the 73,570 union construction workers:
 - Electricians in every county (12,131)

- Carpenters in every county (9,213)
- Plumbers, Pipefitters, and Steamfitters in every county (7,151)
- Construction Laborers in every county but Imperial (5,959)
- First-Line Supervisors of Construction Trades and Extraction Workers in every county (5,225)
- Operating Engineers and Other Construction Equipment Operators in every county (3,320)
- Drywall and Ceiling Tile Installers in every county but Santa Barbara, Imperial (3,014)
- Cement Masons and Concrete Finishers in every county but Santa Barbara (2,826)
- Structural Iron and Steel Workers in Los Angeles, San Diego counties and the Inland Empire (2,077)
- Heating, Air Conditioning, and Refrigeration Mechanics and Installers in every county (1,959)
- Sheet Metal Workers in every county but Imperial (1,904)
- Electrical and Electronics Repairers, Commercial and Industrial Equipment in every county (1,772)
- Painters, Construction and Maintenance in every county but Ventura and Imperial (1,491)
- First-Line Supervisors of Mechanics, Installers, and Repairers in every county (1,518)
- Installation, Maintenance, and Repair Workers, All Other in every county but Imperial (1,493)
- Construction and Building Inspectors in every county (1,433)
- Mobile Heavy Equipment Mechanics, Except Engines in every county (1,399)
- Hazardous Materials Removal Workers in Los Angeles, Orange and San Diego counties and the Inland Empire (911)
- Tapers in every county but Imperial (892)
- Reinforcing Iron and Rebar Workers in Los Angeles, San Diego counties and the Inland Empire (609)
- Glaziers (568) in every county but Ventura and Imperial
- Brick Masons and Block Masons in every county but Santa Barbara and Imperial (551)
- Elevator Installers and Repairers in Los Angeles County (461)
- Plasterers and Stucco Masons in every market but Inland Empire and Imperial County (449)
- Roofers in every county but Imperial (530)
- Highway Maintenance Workers in every county but Imperial (494)

- Pipe Layers in Los Angeles, Orange, San Diego counties and the Inland Empire (447)
- Septic Tank Servicers and Sewer Pipe Cleaners in Los Angeles, Orange counties, and the Inland Empire (216)
- Mechanical Door Repairers in every county but Los Angeles, Orange (212)
- Control and Valve Installers and Repairers, Except Mechanical Door in San Diego, Ventura, Santa Barbara counties and the Inland Empire (212)
- Paving, Surfacing, and Tamping Equipment Operators in Los Angeles, San Diego counties and the Inland Empire (207)
- Tile and Marble Setters in Orange, San Diego, Santa Barbara counties and the Inland Empire (107)
- Helpers-Brickmasons, Blockmasons, Stonemasons, & Tile & Marble Setters in San Diego County (25)
- Carpet Installers every county but Ventura and Imperial (179)
- Stonemasons in Santa Barbara County and the Inland Empire (156)
- Miscellaneous Construction and Related Workers in Los Angeles, Orange, Ventura counties (32)
- Terrazzo Workers and Finishers in Orange County(38)
- Earth Drillers, Except Oil and Gas in San Diego County and the Inland Empire (34)
- Solar Photovoltaic Installers in the Inland Empire (29)
- Insulation Workers, Floor, Ceiling, and Wall in Los Angeles County (29)
- Fence Erectors in Los Angeles, San Diego counties (19)
- Insulation Workers, Mechanical in San Diego County (23)

The only sectors where no union workers in any county could qualify to buy the entry level Inland Empire home were:

- Helpers — Installation, Maintenance, and Repair Workers
- Helpers — Carpenters
- Helpers — Electricians
- Helpers, Construction Trades, All Other
- Helpers — Pipelayers, Plumbers, Pipefitters, and Steamfitters
- Helpers — Painters, Paperhangers, Plasterers, and Stucco Masons
- Floor Layers, Except Carpet, Wood, and Hard Tiles
- Service Unit Operators, Oil, Gas, and Mining

Summary Southern California Union Construction Workers



Given the assumption that Southern California’s unionized construction workers earn more than 75% of their colleagues, this analysis showed that there is still a problem in the ability of construction workers to afford homes in the coastal counties. Union members workers in construction occupations throughout the Southland could still not afford median priced homes in Los Angeles, Orange and San Diego Counties. Even for the Inland Empire’s lower median price, union workers in just 19 of 50 occupations could do so.

With lower priced first time homes, the situation changed somewhat in the coastal counties. Union construction workers in just one occupation could buy an “affordable” first time home in Orange County. Those in 11 occupations could do so in San Diego County. It was true for workers in 12 occupations with regards to Los Angeles County prices. The situation changed dramatically for the lower cost Inland Empire. There, over 95% of union workers in 42 of 50 occupations were able to afford lower priced first time homes. The difficulty is that the area’s affordable homes are largely located deep inside the region, away from the areas adjacent to the coastal counties, making for very long commutes.

San Francisco Bay Area Construction Workers

A similar, if more dire, set of situations exists between the Bay Area and the northern portion of the Central Valley. To address housing affordability, the starting point was again the 2017 EDD data on employment by occupational category, whether union or not. Here, the data were compiled for the San Francisco (SF) Bay Area’s nine counties (*Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties*). Statistics were available for 164,210 SF Bay Area construction workers in 50 different occupations (*Exhibit 11*).

In addition, the U.S. Bureau of Labor Statistics reported data on the share of unionization for each U.S. construction occupation was assumed to also apply to the SF Bay Area. As indicated earlier, to the extent that was true,

Exhibit 11. – Number of Workers by Construction Occupation, SF Bay Area, 2017

National Union %	OES	Occupation	Alameda Contra Costa	Marin	Napa	San Francisco San Mateo	Santa Clara	Solano	Sonoma	SF Bay Area
18.1%	472031	Carpenters	9,420	1,660	690	6,510	4,650	1,300	1,570	25,800
11.4%	472061	Construction Laborers	8,740	690	420	5,680	4,730	1,300	1,520	23,080
35.0%	472111	Electricians	4,760	330	210	3,280	5,560	950	870	15,960
27.4%	472152	Plumbers, Pipefitters, and Steamfitters	5,050	230	200	3,990	2,150	290	620	12,530

17.7%	4710 11	First-Line Supervisors of Construction Trades and Extraction Workers	4,590	350	200	2,230	3,150	620	640	11,780
8.0%	4721 41	Painters, Construction and Maintenance	3,580	690	290	1,590	2,420	330	680	9,580
7.2%	4910 11	First-Line Supervisors of Mechanics, Installers, and Repairers	2,970	340	170	2,180	2,280	510	530	8,980
19.6%	4720 81	Drywall and Ceiling Tile Installers	1,770	220	50	1,130	2,280	90	380	5,920
26.0%	4720 73	Operating Engineers and Other Construction Equipment Operators	2,810	80	100	770	1,100	290	430	5,580
14.5%	4990 21	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	1,320	130	0	670	1,970	230	560	4,880
6.5%	4721 81	Roofers	1,650	110	80	800	1,320	190		4,150
12.6%	4990 99	Installation, Maintenance, and Repair Workers, All Other	1,460	110	140	710	1,250	200	230	4,100
25.3%	4720 51	Cement Masons and Concrete Finishers	1,360	170	120		1,120	300	280	3,350
9.6%	4990 98	Helpers--Installation, Maintenance, and Repair Workers	1,270	90		450	690	90	310	2,900
24.0%	4740 11	Construction and Building Inspectors	1,070	40	30	970	580	60	130	2,880
5.4%	4720 44	Tile and Marble Setters	310	80	80	790	650	90	200	2,200
34.5%	4740 41	Hazardous Materials Removal Workers	1,280			190	290		120	1,880
27.8%	4722 11	Sheet Metal Workers	980	0		320	560			1,860
20.4%	4930 42	Mobile Heavy Equipment Mechanics, Except Engines	950		60	140	320	170	120	1,760
56.3%	4722 21	Structural Iron and Steel Workers	790				420	300	100	1,610
50.2%	4920 94	Electrical and Electronics Repairers, Commercial and Industrial Equipment	560			140	670	100	110	1,580
19.6%	4720 82	Tapers	260			220	840		170	1,490
15.7%	4721 21	Glaziers	490		0	490				980
30.5%	4740 51	Highway Maintenance Workers	470		50	100	250		30	900
12.6%	4722 31	Solar Photovoltaic Installers	540	120		40			80	780
11.6%	4721 61	Plasterers and Stucco Masons	700		0					700
10.3%	4730 12	Helpers--Carpenters	150	0		200	220		80	650
5.4%	4720 42	Floor Layers, Except Carpet, Wood, and Hard Tiles	220			380				600

5.7%	4740 90	Miscellaneous Construction and Related Workers	260			190	80			530
1.8%	4740 31	Fence Erectors	320				180			500
5.4%	4720 41	Carpet Installers	480							480
59.7%	4721 71	Reinforcing Iron and Rebar Workers	0				440			440
10.3%	4730 13	Helpers--Electricians	440							440
20.4%	4990 11	Mechanical Door Repairers	250		0	190				440
10.3%	4730 11	Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	0			120	180		140	440
27.3%	4740 71	Septic Tank Servicers and Sewer Pipe Cleaners	240			110			40	390
21.0%	4990 12	Control and Valve Installers and Repairers, Except Mechanical Door	140		0		70	30	70	310
21.1%	4720 21	Brickmasons and Blockmasons	300		0					300
19.0%	4721 31	Insulation Workers, Floor, Ceiling, and Wall	300							300
12.8%	4720 71	Paving, Surfacing, and Tamping Equipment Operators	0			100	170			270
21.1%	4720 22	Stonemasons	190							190
27.4%	4721 51	Pipelayers	150	30						180
100.0 %	4720 72	Pile-Driver Operators	150							150
10.3%	4730 19	Helpers, Construction Trades, All Other	150							150
63.1%	4740 21	Elevator Installers and Repairers	140							140
7.0%	4750 21	Earth Drillers, Except Oil and Gas	60							60
10.3%	4730 14	Helpers--Painters, Paperhangers, Plasterers, and Stucco Masons	0					40		40
3.0%	4750 13	Service Unit Operators, Oil, Gas, and Mining	0							0
10.3%	4730 15	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	0							0
19.0%	4721 32	Insulation Workers, Mechanical	0							0
18.9%		Construction Occupations	63,090	5,470	2,890	34,680	40,590	7,480	10,010	164,210

Source: Occupational Employment (May 2017) Data, Occupational Wage Survey, CA Employment Development Department; Union Membership, Coverage, Density and Employment by Combined Statistical Area (CSA) and MSA, 2017 UnionStats © 2018 by Barry T. Hirsch and David A. Macpherson.

18.9% of construction workers were in unions. This compared to 8.0% of workers in all private sector occupations in the SF Bay Area market.¹²

Reviewing these data, the heaviest concentration of SF Bay Area construction workers by occupation was in the 12 job categories with 4,100 workers or more. In 2017, they included 132,340 of the estimated 164,210 construction workers or 80.6%:

• Carpenters	25,800	15.7%
• Construction Laborers	23,080	14.1%
• Electricians	15,960	9.7%
• Plumbers, Pipefitters, and Steamfitters	12,530	7.6%
• First-Line Supervisors of Construction Trades and Extraction Workers	11,780	7.2%
• Painters, Construction and Maintenance	9,580	5.8%
• First-Line Supervisors of Mechanics, Installers, and Repairers	8,980	5.5%
• Drywall and Ceiling Tile Installers	5,920	3.6%
• Operating Engineers and Other Construction Equipment Operators	5,580	3.4%
• Heating, Air Conditioning, and Refrigeration Mechanics and Installers	4,880	3.0%
• Roofers	4,150	2.5%
• Installation, Maintenance, and Repair Workers, All Other	4,100	2.5%
	132,340	80.6%

Median Pay

EDD's hourly wage data on the median pay for each occupation in first quarter 2018 was next used. For clarity, that is the level where 50% of workers in an occupation made more and 50% made less than other workers in each job category. These data were multiplied by 2,080 hours on the assumption that workers were employed 8-hours a day, 5-days a week, 52-weeks a year. Below, these pay scales are shown by occupation according to the number of workers in it for the SF Bay Area (*Exhibit 12*). For all 164,210 construction workers in the region, the median annual pay weighted by the number of workers in each occupation was \$65,448. For the 12 largest occupations, it was \$67,264. The twelve occupations included:

• Carpenters	25,800	\$64,289
• Construction Laborers	23,080	\$52,575

- Electricians 15,960 \$82,383
- Plumbers, Pipefitters, and Steamfitters 12,530 \$60,070
- First-Line Supervisors of Construction Trades and Extraction Workers 11,780 \$92,974
- Painters, Construction and Maintenance 9,580 \$55,167
- First-Line Supervisors of Mechanics, Installers, and Repairers 8,980 \$81,926
- Drywall and Ceiling Tile Installers 5,920 \$73,249
- Operating Engineers and Other Construction Equipment Operators 5,580 \$80,478
- Heating, Air Conditioning, and Refrigeration Mechanics and Installers 4,880 \$62,144
- Roofers 4,150 \$54,003

Exhibit 12. – Median Pay by Construction Occupation, SF Bay Area, 2018

National Union %	OES	Occupation	Alameda Contra Costa	Marin	Napa	San Francisco San Mateo	Santa Clara	Solano	Sonoma	SF Bay Area
18.1%	472031	Carpenters	\$66,186	\$72,238	\$73,320	\$61,443	\$61,651	\$57,970	\$65,374	\$64,289
11.4%	472061	Construction Laborers	\$57,013	\$42,141	\$48,963	\$51,397	\$52,042	\$49,171	\$41,766	\$52,575
35.0%	472111	Electricians	\$87,942	\$79,893	\$81,162	\$94,390	\$76,253	\$63,565	\$67,662	\$82,383
27.4%	472152	Plumbers, Pipefitters, and Steamfitters	\$63,419	\$52,416	\$49,005	\$57,595	\$54,850	\$70,741	\$68,245	\$60,070
17.7%	471011	First-Line Supervisors of Construction Trades and Extraction Workers	\$91,458	\$94,806	\$75,774	\$99,320	\$95,326	\$79,934	\$87,173	\$92,974
8.0%	472141	Painters, Construction and Maintenance	\$55,120	\$49,982	\$55,890	\$57,699	\$55,058	\$48,110	\$58,261	\$55,167
7.2%	491011	First-Line Supervisors of Mechanics, Installers, and Repairers	\$81,286	\$80,392	\$84,968	\$79,706	\$83,034	\$89,357	\$82,742	\$81,926
19.6%	472081	Drywall and Ceiling Tile Installers	\$92,373	\$0	\$66,664	\$64,501	\$69,659	\$48,194	\$80,933	\$73,249
26.0%	472073	Operating Engineers and Other Construction Equipment Operators	\$83,949	\$76,960	\$65,146	\$82,992	\$77,480	\$79,768	\$65,666	\$80,478
14.5%	499021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	\$52,499	\$73,154	\$0	\$60,715	\$69,326	\$45,198	\$65,728	\$62,144
6.5%	472181	Roofers	\$48,797	\$60,341	\$47,070	\$54,766	\$58,219	\$65,957	\$0	\$54,003
12.6%	499099	Installation, Maintenance, and Repair Workers, All Other	\$51,917	\$60,050	\$38,251	\$48,838	\$41,662	\$35,443	\$48,090	\$46,991

National Union %	OES	Occupation	Alameda Contra Costa	Marin	Napa	San Francisco San Mateo	Santa Clara	Solano	Sonoma	SF Bay Area
25.3%	4720 51	Cement Masons and Concrete Finishers	\$54,080	\$48,755	\$52,125	\$0	\$49,421	\$45,573	\$54,995	\$51,497
9.6%	4990 98	Helpers--Installation, Maintenance, and Repair Workers	\$31,907	\$42,203	\$0	\$47,882	\$38,584	\$25,210	\$30,222	\$35,906
24.0%	4740 11	Construction and Building Inspectors	\$100,984	\$99,237	\$77,584	\$106,891	\$96,262	\$83,346	\$102,190	\$101,442
5.4%	4720 44	Tile and Marble Setters	\$44,221	\$60,008	\$53,227	\$50,232	\$49,608	\$47,757	\$48,547	\$49,411
34.5%	4740 41	Hazardous Materials Removal Workers	\$44,616	\$0	\$0	(\$8,320)	\$40,061	\$0	\$37,336	\$38,099
27.8%	4722 11	Sheet Metal Workers	\$50,648	\$0	\$0	\$0	\$65,000	\$0	\$0	\$46,255
20.4%	4930 42	Mobile Heavy Equipment Mechanics, Except Engines	\$73,133	\$0	\$59,925	\$72,821	\$68,390	\$63,835	\$60,611	\$70,044
56.3%	4722 21	Structural Iron and Steel Workers	\$57,138	\$0	\$0	\$0	\$57,616	\$63,731	\$48,547	\$57,957
50.2%	4920 94	Electrical and Electronics Repairers, Commercial and Industrial Equipment	\$73,549	\$0	\$0	\$67,142	\$51,293	\$75,088	\$75,026	\$63,744
19.6%	4720 82	Tapers	\$95,763	\$0	\$0	\$77,106	\$62,837	\$0	\$67,288	\$71,197
15.7%	4721 21	Glaziers	\$55,952	\$0	\$63,274	\$89,378	\$0	\$0	\$0	\$72,665
30.5%	4740 51	Highway Maintenance Workers	\$65,624	\$0	\$59,363	\$72,467	\$61,485	\$0	\$57,595	\$64,619
12.6%	4722 31	Solar Photovoltaic Installers	\$39,395	\$49,525	\$0	\$49,650	\$0	\$0	\$57,387	\$43,325
11.6%	4721 61	Plasterers and Stucco Masons	\$53,019	\$0	\$59,446	\$0	\$0	\$0	\$0	\$53,019
10.3%	4730 12	Helpers--Carpenters	\$36,712	\$0	\$0	\$37,211	\$31,970	\$0	\$49,774	\$36,868
5.4%	4720 42	Floor Layers, Except Carpet, Wood, and Hard Tiles	\$53,040	\$0	\$0	\$56,472	\$0	\$0	\$0	\$55,214
5.7%	4740 90	Miscellaneous Construction and Related Workers	\$42,890	\$0	\$0	\$54,995	\$62,982	\$0	\$0	\$50,262
1.8%	4740 31	Fence Erectors	\$35,693	\$0	\$0	\$0	\$36,670	\$0	\$0	\$36,045
5.4%	4720 41	Carpet Installers	\$90,085	\$0	\$0	\$0	\$0	\$0	\$0	\$90,085
59.7%	4721 71	Reinforcing Iron and Rebar Workers	\$45,677	\$0	\$0	\$0	\$51,563	\$0	\$0	\$51,563
10.3%	4730 13	Helpers--Electricians	\$41,350	\$0	\$0	\$0	\$0	\$0	\$0	\$41,350
20.4%	4990 11	Mechanical Door Repairers	\$43,347	\$0	\$0	\$44,346	\$0	\$0	\$0	\$43,778
10.3%	4730 11	Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	\$69,763	\$0	\$0	\$32,552	\$34,882	\$0	\$41,101	\$36,225
27.3%	4740 71	Septic Tank Servicers and Sewer Pipe Cleaners	\$50,544	\$0	\$0	\$79,394	\$0	\$0	\$48,880	\$58,510

21.0%	4990 12	Control and Valve Installers and Repairers, Except Mechanical Door	\$79,331	\$0	\$0	\$0	\$82,118	\$75,442	\$63,398	\$75,986
21.1%	4720 21	Brickmasons and Blockmasons	\$63,003	\$0	\$60,466	\$0	\$0	\$0	\$0	\$63,003
19.0%	4721 31	Insulation Workers, Floor, Ceiling, and Wall	\$87,402	\$0	\$0	\$0	\$0	\$0	\$0	\$87,402
12.8%	4720 71	Paving, Surfacing, and Tamping Equipment Operators	\$54,330	\$0	\$0	\$79,477	\$52,187	\$0	\$0	\$62,294
21.1%	4720 22	Stonemasons	\$57,054	\$0	\$0	\$0	\$0	\$0	\$0	\$57,054
27.4%	4721 51	Pipelayers	\$57,283	\$77,355	\$0	\$0	\$0	\$0	\$0	\$60,629
100.0 %	4720 72	Pile-Driver Operators	\$93,454	\$0	\$0	\$0	\$0	\$0	\$0	\$93,454
10.3%	4730 19	Helpers, Construction Trades, All Other	\$30,618	\$0	\$0	\$0	\$0	\$0	\$0	\$30,618
63.1%	4740 21	Elevator Installers and Repairers	\$84,365	\$0	\$0	\$0	\$0	\$0	\$0	\$84,365
7.0%	4750 21	Earth Drillers, Except Oil and Gas	\$62,546	\$0	\$0	\$0	\$0	\$0	\$0	\$62,546
10.3%	4730 14	Helpers--Painters, Paperhangers, Plasterers, and Stucco Masons	\$0	\$0	\$0	\$0	\$0	\$34,528	\$0	\$34,528
3.0%	4750 13	Service Unit Operators, Oil, Gas, and Mining	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10.3%	4730 15	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
19.0%	4721 32	Insulation Workers, Mechanical	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
		Construction Occupations	\$66,858	\$62,239	\$63,038	\$66,193	\$64,943	\$60,835	\$61,931	\$65,448

Source: Occupational Wage (2018-1st Quarter) Data, Occupational Wage Survey, CA Employment Development Department; Union Membership, Coverage, Density and Employment by Combined Statistical Area (CSA) and MSA, 2017 UnionStats, © 2018 by Barry T. Hirsch and David A. Macpherson. 75% pay threshold is shown.

- Installation, Maintenance, and Repair Workers, All Other

4,100	\$46,991
132,340	\$67,264

Estimated Union Workers by Occupation and County

To estimate union membership by occupation, the national figures on the share of union workers in each occupation were used. Altogether, the result was an estimate of 31,269 union members or 19.0% of the total of 164,210 SF Bay Area construction workers in 2017 (*Exhibit 13*). As above, data on

Exhibit 13. – Estimated Union Construction Workers, by Occupation, SF Bay Area, 2017

National Union %	OES	Occupation	Alameda Contra Costa	Marin	Napa	San Francisco San Mateo	Santa Clara	Solano	Sonoma	SF Bay Area
12.6%	4721 11	Electricians	1,666	116	74	1,148	1,946	333	305	5,586
11.4%	4720 31	Carpenters	1,705	300	125	1,178	842	235	284	4,670
9.6%	4721 52	Plumbers, Pipefitters, and Steamfitters	1,384	63	55	1,093	589	79	170	3,433
14.5%	4720 61	Construction Laborers	996	79	48	648	539	148	173	2,631
35.0%	4710 11	First-Line Supervisors of Construction Trades and Extraction Workers	812	62	35	395	558	110	113	2,085
50.2%	4720 73	Operating Engineers and Other Construction Equipment Operators	731	21	26	200	286	75	112	1,451
8.0%	4720 81	Drywall and Ceiling Tile Installers	347	43	10	221	447	18	74	1,160
6.5%	4722 21	Structural Iron and Steel Workers	445	0	0	0	236	169	56	906
25.3%	4720 51	Cement Masons and Concrete Finishers	344	43	30	0	283	76	71	848
7.0%	4920 94	Electrical and Electronics Repairers, Commercial and Industrial Equipment	281	0	0	70	336	50	55	793
19.6%	4721 41	Painters, Construction and Maintenance	286	55	23	127	194	26	54	766
19.0%	4990 21	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	191	19	0	97	286	33	81	708
10.3%	4740 11	Construction and Building Inspectors	257	10	7	233	139	14	31	691
10.3%	4740 41	Hazardous Materials Removal Workers	442	0	0	66	100	0	41	649
25.3%	4910 11	First-Line Supervisors of Mechanics, Installers, and Repairers	214	24	12	157	164	37	38	647
11.6%	4722 11	Sheet Metal Workers	272	0	0	89	156	0	0	517
3.0%	4990 99	Installation, Maintenance, and Repair Workers, All Other	184	14	18	89	158	25	29	517
12.6%	4930 42	Mobile Heavy Equipment Mechanics, Except Engines	194	0	12	29	65	35	24	359
7.2%	4720 82	Tapers	51	0	0	43	165	0	33	292
5.4%	4990 98	Helpers--Installation, Maintenance, and Repair Workers	122	9	0	43	66	9	30	278
21.1%	4740 51	Highway Maintenance Workers	143	0	15	31	76	0	9	275

63.1%	4721 81	Roofers	107	7	5	52	86	12	0	270
21.1%	4721 71	Reinforcing Iron and Rebar Workers	0	0	0	0	263	0	0	263
24.0%	4721 21	Glaziers	77	0	0	77	0	0	0	154
27.8%	4720 71	Paving, Surfacing, and Tamping Equipment Operators	150	0	0	0	0	0	0	150
19.6%	4720 44	Tile and Marble Setters	17	4	4	43	35	5	11	119
10.3%	4740 71	Septic Tank Servicers and Sewer Pipe Cleaners	66	0	0	30	0	0	11	106
30.5%	4722 31	Solar Photovoltaic Installers	68	15	0	5	0	0	10	98
19.0%	4990 11	Mechanical Door Repairers	51	0	0	39	0	0	0	90
10.3%	4740 21	Elevator Installers and Repairers	88	0	0	0	0	0	0	88
15.7%	4721 61	Plasterers and Stucco Masons	81	0	0	0	0	0	0	81
27.3%	4730 12	Helpers--Carpenters	15	0	0	21	23	0	8	67
1.8%	4990 12	Control and Valve Installers and Repairers, Except Mechanical Door	29	0	0	0	15	6	15	65
18.1%	4720 21	Brickmasons and Blockmasons	63	0	0	0	0	0	0	63
20.4%	4721 31	Insulation Workers, Floor, Ceiling, and Wall	57	0	0	0	0	0	0	57
59.7%	4721 51	Pipelayers	41	8	0	0	0	0	0	49
27.4%	4730 11	Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	0	0	0	12	19	0	14	45
20.4%	4730 13	Helpers--Electricians	45	0	0	0	0	0	0	45
27.4%	4720 22	Stonemasons	40	0	0	0	0	0	0	40
100.0 %	4720 72	Pile-Driver Operators	0	0	0	13	22	0	0	35
26.0%	4720 42	Floor Layers, Except Carpet, Wood, and Hard Tiles	12	0	0	21	0	0	0	32
10.3%	4740 90	Miscellaneous Construction and Related Workers	15	0	0	11	5	0	0	30
17.7%	4720 41	Carpet Installers	26	0	0	0	0	0	0	26
5.4%	4730 19	Helpers, Construction Trades, All Other	15	0	0	0	0	0	0	15
5.4%	4740 31	Fence Erectors	6	0	0	0	3	0	0	9
5.7%	4750 21	Earth Drillers, Except Oil and Gas	4	0	0	0	0	0	0	4

21.0%	4730 14	Helpers--Painters, Paperhangers, Plasterers, and Stucco Masons	0	0	0	0	0	4	0	4
34.5%	4721 32	Insulation Workers, Mechanical	0	0	0	0	0	0	0	0
10.3%	4750 13	Service Unit Operators, Oil, Gas, and Mining	0	0	0	0	0	0	0	0
12.8%	4730 15	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	0	0	0	0	0	0	0	0
18.6%		Construction Occupations	12,142	892	500	6,280	8,100	1,500	1,855	31,269

the occupations is shown in order of numerical importance. For each job category, the information shows the number of estimated union workers with jobs in each of the SF Bay Area's seven metropolitan areas.

Reviewing these data, the heaviest concentration of SF Bay Area construction union workers by occupation was in 12 job categories with over 700 workers. In 2018, they included 25,037 of the estimated 31,269 union construction workers or 80.1%:

• Electricians	5,586	17.9%
• Carpenters	4,670	14.9%
• Plumbers, Pipefitters, and Steamfitters	3,433	11.0%
• Construction Laborers	2,631	8.4%
• First-Line Supervisors of Construction Trades and Extraction Workers	2,085	6.7%
• Operating Engineers and Other Construction Equipment Operators	1,451	4.6%
• Drywall and Ceiling Tile Installers	1,160	3.7%
• Structural Iron and Steel Workers	906	2.9%
• Cement Masons and Concrete Finishers	848	2.7%
• Electrical and Electronics Repairers, Commercial and Industrial Equipment	793	2.5%
• Painters, Construction and Maintenance	766	2.5%
• Heating, Air Conditioning, and Refrigeration Mechanics and Installers	708	2.3%
	25,037	80.1%

Pay For Union Workers by Occupation

Given the distribution of union workers by occupation, their pay levels are next shown. The 2018 EDD data on pay by occupation were used assuming

wages above 75% of those working in an occupation (Exhibit 14). Workers were again assumed to work 2,080 hours per year. Pay scales are shown for each occupation according to the number of workers in it from the exhibit above. For all 31,269 union construction workers, the median annual pay, weighted by the workers in each occupation, was \$89,015 versus \$65,448 for all construction workers. For the 12 largest occupations employing union workers, the weighted pay level was \$92,040:

• Electricians	5,586	\$109,069
• Carpenters	4,670	\$85,346
• Plumbers, Pipefitters, and Steamfitters	3,433	\$91,441
• Construction Laborers	2,631	\$65,302
• First-Line Supervisors of Construction Trades and Extraction Workers	2,085	\$118,931
• Operating Engineers and Other Construction Equipment Operators	1,451	\$94,299
• Drywall and Ceiling Tile Installers	1,160	\$107,439
• Structural Iron and Steel Workers	906	\$73,178
• Cement Masons and Concrete Finishers	848	\$64,238
• Electrical and Electronics Repairers, Commercial and Industrial Equipment	793	\$84,397
• Painters, Construction and Maintenance	766	\$71,297
• Heating, Air Conditioning, and Refrigeration Mechanics and Installers	708	\$83,483
	25,037	\$92,040

Exhibit 14. – Estimated Union Construction Workers Pay, by Occupation, SF Bay Area, 2018

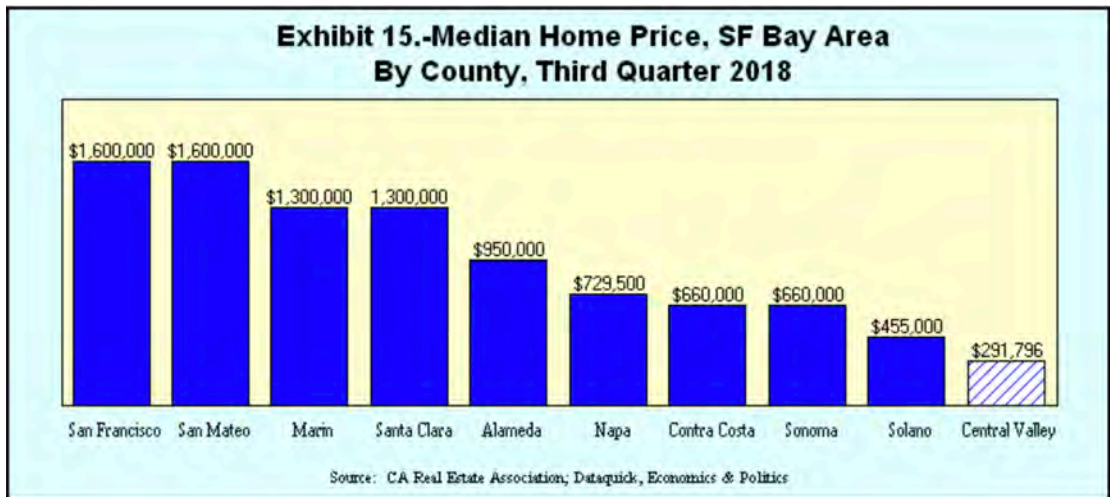
National Union %	OES	Occupation	Alameda Contra Costa	Marin	Napa	San Francisco San Mateo	Santa Clara	Solano	Sonoma	SF Bay Area
12.6%	47211	Electricians	\$114,275	\$116,022	\$96,574	\$124,259	\$103,459	\$80,808	\$90,397	\$109,069
11.4%	472031	Carpenters	\$87,090	\$88,109	\$88,670	\$85,862	\$81,286	\$76,773	\$87,485	\$85,346
9.6%	472152	Plumbers, Pipefitters, and Steamfitters	\$97,053	\$64,438	\$65,416	\$94,786	\$78,354	\$79,227	\$93,725	\$91,441
14.5%	472061	Construction Laborers	\$67,933	\$59,779	\$66,539	\$64,418	\$65,166	\$64,813	\$56,493	\$65,302
35.0%	471011	First-Line Supervisors of Construction Trades and Extraction Workers	\$114,920	\$113,485	\$94,058	\$123,843	\$129,875	\$102,274	\$103,605	\$118,931
50.2%	472073	Operating Engineers and Other Construction Equipment Operators	\$97,698	\$83,366	\$74,339	\$95,805	\$90,002	\$94,141	\$87,173	\$94,299

27.8%	472071	Paving, Surfacing, and Tamping Equipment Operators	\$63,253	\$0	\$0	\$98,134	\$68,286	\$0	\$0	\$63,253
19.6%	472044	Tile and Marble Setters	\$62,629	\$64,210	\$60,195	\$64,314	\$63,045	\$59,093	\$61,027	\$63,035
National Union %	OES	Occupation	Alameda Contra Costa	Marin	Napa	San Francisco San Mateo	Santa Clara	Solano	Sonoma	SF Bay Area
25.3%	472051	Cement Masons and Concrete Finishers	\$63,731	\$58,656	\$59,634	\$0	\$66,893	\$61,506	\$64,376	\$64,238
7.0%	492094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	\$94,411	\$0	\$0	\$79,435	\$77,334	\$82,763	\$84,240	\$84,397
19.6%	472141	Painters, Construction and Maintenance	\$75,546	\$58,781	\$62,754	\$70,782	\$72,883	\$61,214	\$65,728	\$71,297
19.0%	499021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	\$66,477	\$104,166	\$0	\$81,286	\$96,013	\$50,482	\$90,875	\$83,483
10.3%	474011	Construction/Bldg Inspectors	\$118,373	\$118,643	\$90,459	\$129,605	\$111,987	\$98,363	\$147,514	\$121,481
10.3%	474041	Hazardous Materials Removal Workers	\$51,501	\$0	\$0	\$0	\$49,608	\$0	\$41,330	\$45,355
25.3%	491011	First-Line Supervisors of Mechanics, Installers, and Repairers	\$106,621	\$103,064	\$100,464	\$105,914	\$108,846	\$104,874	\$101,712	\$106,374
11.6%	472211	Sheet Metal Workers	\$73,320	\$0	\$0	\$0	\$100,610	\$0	\$0	\$68,922
3.0%	499099	Installation, Maintenance, and Repair Workers, All Other	\$65,499	\$70,907	\$46,072	\$63,752	\$55,411	\$53,435	\$60,902	\$60,756
12.6%	493042	Mobile Heavy Equipment Mechanics, Except Engines	\$89,253	\$0	\$69,118	\$84,198	\$91,062	\$75,462	\$74,090	\$86,127
7.2%	472082	Tapers	\$112,611	\$0	\$0	\$93,350	\$83,075	\$0	\$89,336	\$90,461
5.4%	499098	Helpers--Installation, Maintenance, and Repair	\$37,066	\$48,131	\$0	\$73,507	\$47,715	\$31,429	\$38,626	\$45,589
21.1%	474051	Highway Maintenance Workers	\$88,920	\$0	\$72,696	\$113,090	\$75,920	\$0	\$73,570	\$86,581
63.1%	472181	Roofers	\$57,200	\$69,285	\$53,331	\$62,421	\$69,576	\$74,194	\$0	\$63,167
21.1%	472171	Reinforcing Iron and Rebar Workers	\$56,368	\$0	\$0	\$0	\$71,510	\$0	\$0	\$71,510
24.0%	472121	Glaziers	\$62,650	\$0	\$78,645	\$101,338	\$0	\$0	\$0	\$81,994
27.8%	472071	Paving, Surfacing, and Tamping Equipment Operators	\$63,253	\$0	\$0	\$98,134	\$68,286	\$0	\$0	\$63,253
19.6%	472044	Tile and Marble Setters	\$62,629	\$64,210	\$60,195	\$64,314	\$63,045	\$59,093	\$61,027	\$63,035
10.3%	474071	Septic Tank Servicers and Sewer Pipe Cleaners	\$62,629	\$0	\$0	\$96,034	\$0	\$0	\$58,760	\$71,654
30.5%	472231	Solar Photovoltaic Installers	\$47,507	\$60,258	\$0	\$59,093	\$0	\$0	\$64,834	\$51,840
19.0%	499011	Mechanical Door Repairers	\$53,186	\$0	\$0	\$51,355	\$0	\$0	\$0	\$52,395

10.3%	4740 21	Elevator Installers and Repairers	\$102,29 4	\$0	\$0	\$0	\$0	\$0	\$0	\$102,29 4
15.7%	4721 61	Plasterers and Stucco Masons	\$70,512	\$0	\$70,242	\$0	\$0	\$0	\$0	\$70,512
27.3%	4730 12	Helpers--Carpenters	\$43,722	\$0	\$0	\$43,514	\$44,82 4	\$0	\$59,218	\$45,938
1.8%	4990 12	Control and Valve Installers and Repairers, Except Mechanical Door	\$103,48 0	\$0	\$0	\$0	\$97,61 4	\$83,782	\$76,565	\$94,172
18.1%	4720 21	Brickmasons and Blockmasons	\$76,794	\$0	\$64,667	\$0	\$0	\$0	\$0	\$76,794
20.4%	4721 31	Insulation Workers, Floor, Ceiling, and Wall	\$107,32 8	\$0	\$0	\$0	\$0	\$0	\$0	\$107,32 8
59.7%	4721 51	Pipelayers	\$64,168	\$82,805	\$0	\$0	\$0	\$0	\$0	\$67,274
27.4%	4730 11	Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	\$77,522	\$0	\$0	\$38,230	\$42,37 0	\$0	\$48,797	\$43,286
20.4%	4730 13	Helpers--Electricians	\$47,965	\$0	\$0	\$0	\$0	\$0	\$0	\$47,965
27.4%	4720 22	Stonemasons	\$62,046	\$0	\$0	\$0	\$0	\$0	\$0	\$62,046
100.0%	4720 72	Pile-Driver Operators	\$100,75 5	\$0	\$0	\$0	\$0	\$0	\$0	\$0
26.0%	4720 42	Floor Layers, Except Carpet, Wood, and Hard Tiles	\$70,200	\$0	\$0	\$68,058	\$0	\$0	\$0	\$68,843
10.3%	4740 90	Miscellaneous Construction and Related Workers	\$52,000	\$0	\$0	\$61,776	\$93,72 5	\$0	\$0	\$61,803
17.7%	4720 41	Carpet Installers	\$99,778	\$0	\$0	\$0	\$0	\$0	\$0	\$99,778
5.4%	4730 19	Helpers, Construction Trades,	\$43,930	\$0	\$0	\$0	\$0	\$0	\$0	\$43,930
5.4%	4740 31	Fence Erectors	\$46,426	\$0	\$0	\$0	\$46,46 7	\$0	\$0	\$46,441
5.7%	4750 21	Earth Drillers, Except Oil and Gas	\$73,278	\$0	\$0	\$0	\$0	\$0	\$0	\$73,278
21.0%	4730 14	Helpers--Painters, Paperhangers, Plasterers, and Stucco Masons	\$0	\$0	\$0	\$0	\$0	\$39,562	\$0	\$39,562
34.5%	4721 32	Insulation Workers, Mechanical	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10.3%	4750 13	Service Unit Operators, Oil, Gas, and Mining	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
12.8%	4730 15	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	\$39,520	\$0	\$0	\$0	\$0	\$0	\$0	\$0
18.6%		Construction Occupation	\$90,094	\$81,346	\$78,833	\$93,658	\$88,84 0	\$77,752	\$82,547	\$89,015

Construction Worker Comparison

Looking at the data on construction workers, union and non-union, in SF Bay Area's nine counties, several facts emerge. The area has fewer construction workers (164,210) than Southern California (390,867). However, they are better paid. For all construction workers, the median pay in the SF Bay Area was \$65,448 versus \$54,116 in the Southern California's counties. For union construction workers, the pay was \$89,015 in the SF Bay Area compared to \$73,259 in the southern counties. With higher home prices in the SF Bay Area and higher pay, the affordability for total and union construction workers needs to be addressed.



SF Bay Area Median Home Prices

In the nine SF Bay Area counties, median prices in third quarter 2018 were very high. They varied from \$455,000 in Solano County to \$1.6 million in both San Francisco and San Mateo counties (*Exhibit 15*). For the entire area, the median price was \$950,000. This compared to a range of \$362,500 to \$830,000 in Southern California.

According to the CA Real Estate Association, the annual incomes required by market to buy these median priced homes were as follows:

- San Francisco: \$341,300 for monthly payments of \$8,530 on the \$1,600,000 median priced home
- San Mateo: \$341,300 for monthly payments of \$8,530 on the \$1,600,000 median priced home
- Marin: \$277,310 for monthly payments of \$6,930 on the \$1,300,000 median priced home
- Santa Clara: \$277,310 for monthly payments of \$6,930 on the \$1,300,000 median priced home

- Alameda: \$202,650 for monthly payments of \$5,070 on the \$950,000 median priced home
- Napa: \$155,610 for monthly payments of \$3,890 on the \$729,500 median priced home
- Contra Costa \$140,790 for monthly payments of \$3,520 on the \$660,000 median priced home
- Sonoma: \$140,790 for monthly payments of \$3,520 on the \$660,000 median priced home
- Solano: \$97,060 for monthly payments of \$2,430 on the \$455,000 median priced home
- Central Valley: \$62,241 for monthly payments of 1,560 on the \$291,796 median priced home

Construction Workers Able To Afford Median Homes

Looking at the array of incomes for all construction workers, union or not, the ability to purchase these homes by construction workers in the various markets was:

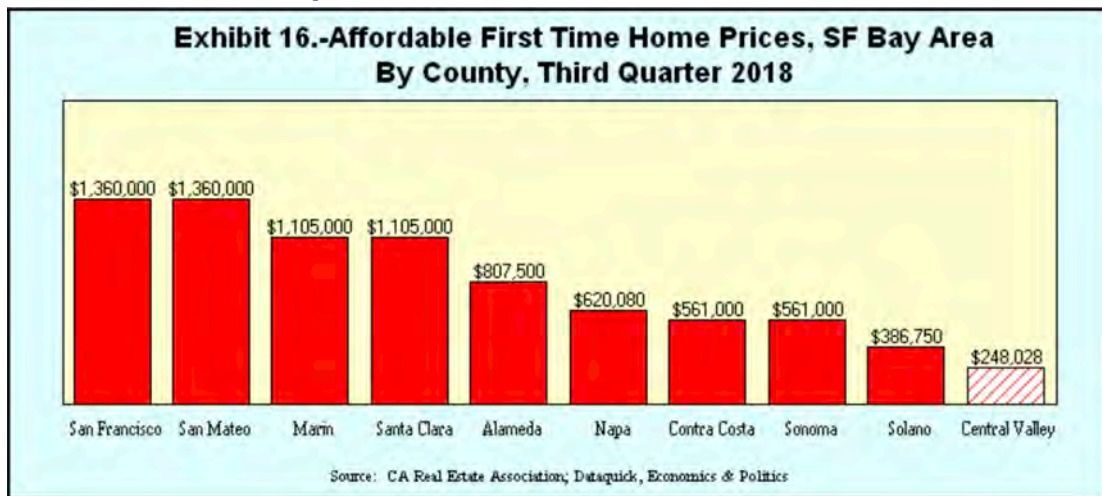
- **San Francisco and San Mateo counties:** No construction workers in any occupation in any county had the \$341,300 income to afford the \$1.6 million median priced home.
- **Marin and Santa Clara counties:** No construction workers in any occupation in any county had the \$277,310 income to afford the \$1.3 million median priced home.
- **Alameda County:** No construction worker in any occupation in any county had the \$202,650 income to afford the \$950,000 median priced home.
- **Napa County:** No construction worker in any occupation in any county had the \$155,610 income to afford the \$729,500 median priced home.
- **Contra Costa and Sonoma counties:** No construction worker in any occupation in any county had the \$140,790 income to afford the \$660,000 median priced home.
- **Solano County:** There were five cases in two occupational categories where 4,440 supervisors and inspectors earned the \$97,060 income to afford the \$455,000 median home:
 - Front Line Supervisors in Construction Trades and Extraction in San Francisco, San Mateo (2,230)
 - Construction and Building Inspectors in every county but Napa, Santa Clara, Solano (2,210)

- **If Choosing to Migrate to the Central Valley for Median Priced Homes:** In the adjacent seven county Central Valley, construction workers can find affordable homes if they chose to migrate inland. In that market, there were 84 cases in 29 occupations with 80,080 construction workers who could afford the \$62,241 income needed for the \$291,796 median priced home. That was 48.8% of the 164,210 construction workers. The workers by occupation and the counties in which they worked included:

- Carpenters in Alameda, Contra Costa, Napa, Marin, Sonoma (13,340)
- Electricians in every county (15,960)
- First-Line Supervisors of Construction Trades and Extraction Workers in every county (11,780)
- First-Line Supervisors of Mechanics, Installers, and Repairers in every county (8,980)
- Plumbers, Pipefitters, and Steamfitters in Alameda, Contra Costa, Solano, Sonoma (5,960)
- Operating Engineers and Other Construction Equipment Operators in every county (5,580)
- Drywall and Ceiling Tile Installers every county but Marin, Solano (4,790)
- Construction and Building Inspectors in every county (2,880)
- Heating, Air Conditioning, and Refrigeration Mechanics and Installers in Marin, Santa Clara, Sonoma (2,660)
- Mobile Heavy Equipment Mechanics, Except Engines in all counties but Marin, Napa, Sonoma (1,580)
- Tapers in every county but Marin, Napa, Solano (1,490)
- Electrical and Electronics Repairers, Commercial and Industrial Equipment in all counties by Marin, Napa, Sonoma (910)
- Highway Maintenance Workers in Alameda, Contra Costa, San Francisco, San Mateo (570)
- Sheet Metal Workers in Santa Clara (560)
- Glaziers in Napa, San Francisco, San Mateo (490)
- Carpet Installers in Alameda, Contra Costa (480)
- Control and Valve Installers and Repairers, Except Mechanical Door in Alameda, Contra Costa, Santa Clara, Solano, Sonoma (310)
- Brickmasons and Blockmasons in Alameda, Contra Costa (300)
- Insulation Workers, Floor, Ceiling, and Wall in Alameda, Contra Costa (300)
- Structural Iron and Steel Workers in Solano (300)
- Roofers in Solano (190)
- Pile-Driver Operators in Alameda, Contra Costa (150)

- Elevator Installers and Repairers in Alameda, Contra Costa (140)
- Septic Tank Servicers and Sewer Pipe Cleaners in San Francisco, San Mateo (110)
- Paving, Surfacing, and Tamping Equipment Operators in San Francisco, San Mateo (100)
- Miscellaneous Construction and Related Workers in Santa Clara (80)
- Earth Drillers, Except Oil and Gas in Alameda, Contra Costa (60)
- Pipelayers in Marin (30)
- Earth Drillers, Except Oil and Gas in Alameda, Contra Costa (60)

SF Bay Area First Time Home Prices



In the nine counties, lower priced starter homes in third quarter 2018 were still very high. They varied from \$386,750 in Solano County to \$1.36 million in both San Francisco and San Mateo counties (Exhibit 16). For the entire area, the median price was \$807,500. This compared to a range of \$362,500 to \$830,000 in Southern California.

According to the CA Real Estate Association, by market, the annual incomes required to buy these “lower priced” first time homes were:

- San Francisco: \$220,540 for monthly payments of \$7,350 on \$1,360,000 lower priced first home
- San Mateo: \$220,540 for monthly payments of \$7,350 on \$1,360,000 lower priced first home
- Marin: \$179,190 for monthly payments of \$5,970 on \$1,105,000 lower priced first home
- Santa Clara: \$179,190 for monthly payments of \$5,970 on \$1,105,000 lower priced first home

- Alameda: \$130,940 for monthly payments of \$4,360 on \$807,500 lower priced first home
- Napa: \$100,550 for monthly payments of \$3,350 on \$620,080 lower priced first time home
- Contra Costa \$90,970 for monthly payments of \$3,030 on \$561,000 lower priced first time home
- Sonoma: \$90,970 for monthly payments of \$3,030 on \$561,000 lower priced first time home
- Solano: \$62,720 for monthly payments of \$2,090 on \$386,750 lower price first time home
- Central Valley: \$40,213 for monthly payments of \$1,368 on \$248,028 lower priced first time home

Construction Workers Able To Afford First Time Homes

Looking at the array of incomes for all construction workers, union or not, the ability to purchase “more affordable” first time homes by construction workers in the various markets was:

- **San Francisco and San Mateo counties:** No construction worker in any occupation or county had the \$220,540 income to afford the \$1.36 million “lower priced” first time home.
- **Marin and Santa Clara counties:** No construction worker in any occupation or county had the \$179,190 income to afford the \$1.105 million “lower priced” first time home.
- **Alameda County:** No construction worker in any occupation or county had the \$130,940 income to afford the \$807,500 “lower priced” first time home.
- **Napa County:** There were three cases of building inspectors including 1.7% of construction workers with the \$100,550 income to afford the \$620,080 low priced first time home.
 - Construction and Building Inspectors in Alameda-Contra Costa, San Francisco-San Mateo, Sonoma (2,790)
- **Contra Costa and Sonoma counties:** There were 13 cases in six occupational categories where 18,570 or 11.3% of 164,210 construction workers could earned the \$90,970 income to afford the \$561,000 lower priced first time home. Many were administrators and inspectors. The workers by occupation and counties in which they worked were:
 - First-Line Supervisors of Construction Trades and Extraction Workers in Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara (10,320)

- Electricians in San Francisco, San Mateo (3,280)
- Construction and Building Inspectors in every county but Napa, Solano (2,790)
- Drywall and Ceiling Tile Installers in Alameda, Contra Costa (1,770)
- Tapers in Alameda, Contra Costa (260)
- Pile-Driver Operators in Alameda, Contra Costa (150)
- **Solano County:** There were 83 cases in 28 occupational categories where 80,020 or 48.8% of construction workers could earned the \$62,720 income to afford the \$386,750 lower priced first time home. The workers by occupation and counties in which they worked were:
 - Carpenters in Alameda, Contra Costa, Napa, Marin, Sonoma (13,340)
 - Electricians in every county (15,960)
 - First-Line Supervisors of Construction Trades and Extraction Workers in every county (11,780)
 - First-Line Supervisors of Mechanics, Installers, and Repairers in every county (8,980)
 - Plumbers, Pipefitters, and Steamfitters in Alameda, Contra Costa, Solano, Sonoma (5,960)
 - Operating Engineers and Other Construction Equipment Operators in every county (5,580)
 - Drywall and Ceiling Tile Installers every county but Marin, Solano (4,790)
 - Construction and Building Inspectors in every county (2,880)
 - Heating, Air Conditioning, and Refrigeration Mechanics and Installers in Marin, Santa Clara, Sonoma (2,660)
 - Mobile Heavy Equipment Mechanics, Except Engines in all counties but Marin, Napa, Sonoma (1,580)
 - Tapers in every county but Marin, Napa, Solano (1,490)
 - Electrical and Electronics Repairers, Commercial and Industrial Equipment in all counties by Marin, Napa, Sonoma (910)
 - Highway Maintenance Workers in Alameda, Contra Costa, San Francisco, San Mateo (570)
 - Sheet Metal Workers in Santa Clara (560)
 - Glaziers in Napa, San Francisco, San Mateo (490)
 - Carpet Installers in Alameda, Contra Costa (480)
 - Control and Valve Installers and Repairers, Except Mechanical Door in Alameda, Contra Costa, Santa Clara, Solano, Sonoma (310)
 - Brickmasons and Blockmasons in Alameda, Contra Costa (300)
 - Insulation Workers, Floor, Ceiling, and Wall in Alameda, Contra Costa (300)

- Structural Iron and Steel Workers in Solano (300)
- Roofers in Solano (190)
- Pile-Driver Operators in Alameda, Contra Costa (150)
- Elevator Installers and Repairers in Alameda, Contra Costa (140)
- Septic Tank Servicers and Sewer Pipe Cleaners in San Francisco, San Mateo (110)
- Paving, Surfacing, and Tamping Equipment Operators in San Francisco, San Mateo (100)
- Miscellaneous Construction and Related Workers in Santa Clara (80)
- Pipelayers in Marin (30)
- **If Choosing to Migrate to the Central Valley for First Time Homes:**
 For those choosing to migrate to the seven county Central Valley, there were 169 cases in 44 of the 50 occupations in which 158,080 of 164,210 construction workers could afford the \$40,213 income needed for the \$248,028 lower priced first time home. That was 96.3% of all such workers. Only 6,130 SF Bay Area construction workers could not afford the Central Valley's affordable homes. The workers by occupation and counties in which they worked:
 - Carpenters in every county (25,800)
 - Construction Laborers in every county (23,080)
 - Electricians in every county (15,960)
 - Plumbers, Pipefitters, and Steamfitters in every county 12,530)
 - First-Line Supervisors of Construction Trades and Extraction Workers in every county (11,780)
 - Painters, Construction and Maintenance in every county 9,580)
 - First-Line Supervisors of Mechanics, Installers, and Repairers in every county (8,980)
 - Drywall and Ceiling Tile Installers in every county (5,700)
 - Operating Engineers and Other Construction Equipment Operators in every county (5,580)
 - Heating, Air Conditioning, and Refrigeration Mechanics and Installers in every county but Marin (4,880)
 - Roofers in every county but Sonoma (4,150)
 - Installation, Maintenance, and Repair Workers, All Other in every county but Napa, Solano (3,760)
 - Cement Masons and Concrete Finishers in every county but San Francisco, San Mateo (3,350)
 - Helpers — Installation, Maintenance, and Repair Workers in Marin, San Francisco, San Mateo (540)

- Construction and Building Inspectors in every county (2,880)
- Tile and Marble Setters in every county (2,200)
- Hazardous Materials Removal Workers in Alameda, Contra Costa (1,280)
- Sheet Metal Workers in Alameda, Contra Costa, Santa Clara (1,540)
- Mobile Heavy Equipment Mechanics, Except Engines in every county but Marin (1,760)
- Structural Iron and Steel Workers in Alameda, Contra Costa, Santa Clara, Solano, Sonoma (1,610)
- Electrical and Electronics Repairers, Commercial and Industrial Equipment in every county but Napa, Marin (1,580)
- Tapers in every county but Napa, Marin, Solano (1,490)
- Glaziers in Alameda, Contra Costa, Napa, San Francisco, San Mateo (980)
- Highway Maintenance Workers in every county but Marin, Solano (900)
- Solar Photovoltaic Installers in Marin, San Francisco, San Mateo (240)
- Plasterers and Stucco Masons in Alameda, Contra Costa, Napa (700)
- Floor Layers, Except Carpet, Wood, and Hard Tiles in Alameda, Contra Costa, San Francisco, San Mateo (600)
- Miscellaneous Construction and Related Workers in Alameda, Contra Costa, San Francisco, San Mateo (530)
- Carpet Installers in Alameda, Contra Costa (480)
- Reinforcing Iron and Rebar Workers in Alameda, Contra Costa (440)
- Helpers — Electricians in Alameda, Contra Costa (440)
- Mechanical Door Repairers in Alameda, Contra Costa (250)
- Helpers — Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters in Alameda, Contra Costa (140)
- Septic Tank Servicers and Sewer Pipe Cleaners in Alameda, Contra Costa (390)
- Control and Valve Installers and Repairers, Except Mechanical Door in Alameda, Contra Costa (310)
- Brickmasons and Blockmasons in Alameda, Contra Costa, Napa (300)
- Insulation Workers, Floor, Ceiling, and Wall in Alameda, Contra Costa (300)
- Paving, Surfacing, and Tamping Equipment Operators in Alameda, Contra Costa (270)
- Stonemasons in Alameda, Contra Costa (190)
- Pipelayers in Alameda, Contra Costa, Marin (180)
- Pile-Driver Operators in Alameda, Contra Costa (150)

- Elevator Installers and Repairers in Alameda, Contra Costa (140)
- Helpers — Carpenters in Sonoma (80)
- Earth Drillers, Except Oil and Gas in Alameda, Contra Costa (60)

Union Construction Workers Able To Afford Median Price Homes

Looking at the array of incomes for the more highly paid union construction workers employed in the various counties, the ability to purchase SF Bay Area median price homes was:

- **San Francisco and San Mateo counties:** No union construction worker in any occupation or county had the \$341,300 income to afford the \$1.6 million median priced home.
- **Marin and Santa Clara counties:** No construction worker in any occupation or county had the \$277,310 income to afford the \$1.3 million median priced home.
- **Alameda County:** No construction worker in any occupation or county had the \$202,650 income to afford the \$950,000 median priced home.
- **Napa County:** No construction worker in any occupation or county had the \$155,610 income to afford the \$729,500 median priced home.
- **Contra Costa and Sonoma counties:** There were two cases in two occupations with 378 workers that earned the \$140,710 income to afford the \$660,000 median priced home:
 - Drywall and Ceiling Tile Installers in Alameda, Contra Costa (347)
 - Construction and Building Inspectors in Sonoma (31)
- **Solano County:** There were 50 cases from 16 occupations where 10,040 union construction workers earned the \$97,060 income to afford the \$455,000 median priced home. They represented 32.1% of the 31,269 union construction workers:
 - Electricians in Alameda, Contra Costa, Marin , San Francisco, San Mateo , Santa Clara (4,876)
 - First-Line Supervisors of Construction Trades and Extraction Workers in every county (2,050)
 - Operating Engineers and Other Construction Equipment Operators in every county Alameda, Contra Costa (731)
 - Drywall and Ceiling Tile Installers in Alameda, Contra Costa, Santa Clara (794)
 - Heating, Air Conditioning, and Refrigeration Mechanics and Installers in Marin (19)



- Construction and Building Inspectors in every county but Napa (396)
- First-Line Supervisors of Mechanics, Installers, and Repairers in every county (647)
- Sheet Metal Workers in Santa Clara (156)
- Tapers in Alameda, Contra Costa (51)
- Highway Maintenance Workers in San Francisco, San Mateo (31)
- Glaziers in San Francisco, San Mateo (77)
- Elevator Installers and Repairers in Alameda, Contra Costa (88)
- Control and Valve Installers and Repairers, Except Mechanical Door in Alameda, Contra Costa, Santa Clara (44)
- Insulation Workers, Floor, Ceiling, and Wall in Alameda, Contra Costa (57)
- Carpet Installers in Alameda, Contra Costa (26)
- **Union Members Choosing to Migrate to the Central Valley for Median Homes:** For those migrating to the adjacent seven county Central Valley, there were 130 cases in 37 of 50 occupations with 28,675 construction workers who could afford the \$62,241 income needed for the \$291,796 median priced home. That was 91.7% of all such workers. Only 2,954 SF Bay Area construction workers could not afford the Central Valley's median. The workers by occupation and counties in which they worked:
 - Electricians in every county (5,586)
 - Carpenters in every county (4,670)
 - Plumbers, Pipefitters, and Steamfitters in every county (3,433)
 - Construction Laborers in every county but Napa, Sonoma (2,439)
 - First-Line Supervisors of Construction Trades and Extraction Workers in every county (2,085)
 - Operating Engineers and Other Construction Equipment Operators in every county (1,451)
 - Drywall and Ceiling Tile Installers in Alameda, Contra Costa, Napa, San Francisco, San Mateo, Sonoma (1,100)
 - Structural Iron and Steel Workers in every county Alameda, Contra Costa, Santa Clara, Solano (850)
 - Cement Masons and Concrete Finishers in every county Alameda, Contra Costa, Santa Clara, Sonoma (698)
 - Electrical and Electronics Repairers, Commercial and Industrial Equipment in very county but Marin, Napa (793)
 - Painters, Construction and Maintenance in very county but Marin, Napa (685)

- Heating, Air Conditioning, and Refrigeration Mechanics and Installers in very county but Marin, Solano (674)
- Construction and Building Inspectors in every county (691)
- First-Line Supervisors of Mechanics, Installers, and Repairers in every county (647)
- Sheet Metal Workers in Alameda, Contra Costa, Santa Clara (428)
- Installation, Maintenance, and Repair Workers, All Other in Alameda, Contra Cost, Marin, San Francisco, San Mateo (287)
- Mobile Heavy Equipment Mechanics, Except Engines in very county but Marin (359)
- Tapers in Alameda, Contra Costa, San Francisco, San Mateo, Santa Clara, Sonoma (292)
- Helpers — Installation, Maintenance, and Repair Workers in San Francisco, San Mateo (43)
- Highway Maintenance Workers in very county but Marin, Solano (275)
- Roofers in Marin, Santa Clara, Solano (105)
- Reinforcing Iron and Rebar Workers in Santa Clara (263)
- Glaziers in Napa, San Francisco, San Mateo (77)
- Pile-Driver Operators in Alameda, Contra Costa, San Francisco, San Mateo, Santa Clara (150)
- Tile and Marble Setters in Marin, San Francisco, San Mateo (82)
- Septic Tank Servicers and Sewer Pipe Cleaners in San Francisco, San Mateo (30)
- Solar Photovoltaic Installers in Sonoma (10)
- Elevator Installers and Repairers in Alameda, Contra Costa (88)
- Plasterers and Stucco Masons in Alameda, Contra Costa, Napa (81)
- Control and Valve Installers and Repairers, Except Mechanical Door in Alameda, Contra Costa, Santa Clara, Solano, Sonoma (65)
- Brickmasons and Blockmasons in Alameda, Contra Costa, Napa (63)
- Insulation Workers, Floor, Ceiling, and Wall in Alameda, Contra Costa (57)
- Pipelayers in Alameda, Contra Costa , Marin (49)
- Floor Layers, Not Carpet, Wood, Hard Tiles in Alameda, Contra Costa, San Francisco, San Mateo (32)
- Miscellaneous Construction and Related Workers in Santa Clara (5)
- Carpet Installers in Alameda, Contra Costa (26)
- Earth Drillers, Except Oil and Gas in Alameda, Contra Costa (4)

Union Construction Workers Able To Afford First Time Lower Priced Homes.

Using the data on incomes in each occupation for the more highly paid union construction workers in the various counties, the ability to purchase SF Bay Area's lower priced first time homes was:

- **San Francisco and San Mateo counties:** No union construction worker in any occupation or county had the \$220,540 income to afford the \$1.36 million "lower priced" first time home.
- **Marin and Santa Clara counties:** No union construction worker in any occupation or county had the \$179,190 income to afford the \$1.105 million "lower priced" first time home.
- **Alameda County:** There were two cases in two occupations where 378 union construction workers had sufficient income to afford the \$130,940 income for the \$807,500 "lower priced" first time home:
 - Drywall and Ceiling Tile Installers in Alameda, Contra Costa (347)
 - Construction and Building Inspectors in Sonoma (31)
- **Napa County:** There were 29 cases in 12 occupations where 8,682 union construction workers had the \$100,550 income to afford the \$620,080 lower priced first time home. They represented 27.8% of the 31,269 such people. The workers by occupation and counties in which they worked were:
 - Electricians in Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara (4,876)
 - First-Line Supervisors of Construction Trades and Extraction Workers in very county but Napa (1,791)
 - Drywall and Ceiling Tile Installers in Alameda, Contra Costa (347)
 - Heating, Air Conditioning, and Refrigeration Mechanics and Installers In Marin (19)
 - Construction and Building Inspectors in very county but Napa, Solano (670)
 - First-Line Supervisors of Mechanics, Installers, and Repairers in very county but Napa (647)
 - Tapers in Alameda, Contra Costa (51)
 - Highway Maintenance Workers in San Francisco, San Mateo (31)
 - Glaziers in San Francisco, San Mateo (77)
 - Elevator Installers and Repairers in Alameda, Contra Costa (88)
 - Control and Valve Installers and Repairers, Except Mechanical Door in Alameda, Contra Costa (29)
 - Insulation Workers, Floor, Ceiling, and Wall in Alameda, Contra Costa (57)

- **Contra Costa and Sonoma counties:** There were 51 cases in 20 occupational categories where 14,450 union construction workers could earn the \$90,970 income to afford the \$561,000 lower priced first time home. They made up 46.2% of the 31,269 union construction workers. The occupations and counties in which they worked were:
 - Electricians in Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara (4,949)
 - Plumbers, Pipefitters, and Steamfitters in Alameda, Contra Costa, San Francisco, San Mateo, Sonoma (2,647)
 - First-Line Supervisors of Construction Trades and Extraction Workers in every county (2,085)
 - Operating Engineers and Other Construction Equipment Operators in Alameda, Contra Costa, San Francisco, San Mateo, Solano (1,006)
 - Drywall and Ceiling Tile Installers in Alameda, Contra Costa, San Francisco, San Mateo, Santa Clara, Sonoma (1,090)
 - Electrical and Electronics Repairers, Commercial and Industrial Equipment in Alameda, Contra Costa (281)
 - Heating, Air Conditioning, and Refrigeration Mechanics and Installers in Marin, Santa Clara (305)
 - Construction and Building Inspectors in every county but Napa (684)
 - First-Line Supervisors of Mechanics, Installers, and Repairers in every county (647)
 - Sheet Metal Workers in Santa Clara (156)
 - Tapers in Alameda, Contra Costa, San Francisco, San Mateo (94)
 - Highway Maintenance Workers in San Francisco, San Mateo (31)
 - Glaziers in San Francisco, San Mateo (77)
 - Pile-Driver Operators in San Francisco, San Mateo (150)
 - Septic Tank Servicers and Sewer Pipe Cleaners in San Francisco, San Mateo (30)
 - Elevator Installers and Repairers in Alameda, Contra Costa (88)
 - Control and Valve Installers and Repairers, Except Mechanical Door in Alameda, Contra Costa, Santa Clara (44)
 - Insulation Workers, Floor, Ceiling, and Wall in Alameda, Contra Costa (57)
 - Miscellaneous Construction and Related Workers in Santa Clara (5)
 - Carpet Installers in Alameda, Contra Costa (26)
- **Solano County:** There were 130 cases in 37 occupational categories where 28,556 union construction workers could earn the \$62,720 income to afford the \$386,750 lower priced first time home. They were 91.3% of the 31,269 union workers. Only 2,713 union construction members

could not afford the county's affordable homes. By occupation and county, they worked as follows:

- Electricians in every county (5,586)
- Carpenters in every county (4,670)
- Plumbers, Pipefitters, and Steamfitters in every county (3,433)
- Construction Laborers in every county but Marin, Sonoma (2,379)
- First-Line Supervisors of Construction Trades and Extraction Workers in every county (2,085)
- Operating Engineers and Other Construction Equipment Operators in every county (1,451)
- Drywall and Ceiling Tile Installers in every county but Marin, Solano (1,100)
- Structural Iron and Steel Workers in Alameda, Contra Costa, Santa Clara, Solano (850)
- Cement Masons and Concrete Finishers in Alameda, Contra Costa, Santa Clara, Sonoma (698)
- Electrical and Electronics Repairers, Commercial and Industrial Equipment in every county but Marin, Napa (793)
- Painters, Construction and Maintenance in Alameda, Contra Costa, San Francisco, San Mateo, Santa Clara, Sonoma (662)
- Heating, Air Conditioning, and Refrigeration Mechanics and Installers in every county but Napa, Solano (674)
- Construction and Building Inspectors in every county (691)
- First-Line Supervisors of Mechanics, Installers, and Repairers in every county (647)
- Sheet Metal Workers in Alameda, Contra Costa, Santa Clara (428)
- Installation, Maintenance, and Repair Workers, All Other in Alameda, Contra Costa, Marin, San Francisco, San Mateo (287)
- Mobile Heavy Equipment Mechanics, Except Engines in every county but Marin (359)
- Tapers in Alameda, Contra Costa, San Francisco, San Mateo, Santa Clara, Sonoma (292)
- Helpers — Installation, Maintenance, and Repair Workers in San Francisco, San Mateo (43)
- Highway Maintenance Workers in every county but Marin, Solano (275)
- Roofers in Marin, Santa Clara, Solano (105)
- Reinforcing Iron and Rebar Workers in Santa Clara (263)
- Glaziers in Napa, San Francisco, San Mateo (77)
- Pile-Driver Operators in Alameda, Contra Costa, San Francisco, San Mateo, Santa Clara (150)

- Tile and Marble Setters in Marin, San Francisco, San Mateo (47)
- Septic Tank Servicers and Sewer Pipe Cleaners in San Francisco, San Mateo (30)
- Solar Photovoltaic Installers in Sonoma (10)
- Elevator Installers and Repairers in Alameda, Contra Costa (88)
- Plasterers and Stucco Masons in Alameda, Contra Costa, Napa (81)
- Control and Valve Installers and Repairers, Except Mechanical Door in Alameda, Contra Costa, Santa Clara, Solano, Sonoma (65)
- Brickmasons and Blockmasons in Alameda, Contra Costa, Napa (63)
- Insulation Workers, Floor, Ceiling, and Wall in Alameda, Contra Costa (57)
- Pipelayers in Alameda, Contra Costa, Marin (49)
- Floor Layers, Except Carpet, Wood, and Hard Tiles in Alameda, Contra Costa, San Francisco, San Mateo (32)
- Miscellaneous Construction and Related Workers in Santa Clara (5)
- Carpet Installers in Alameda, Contra Costa (26)
- Earth Drillers, Except Oil and Gas in Alameda, Contra Costa (4)
- **If Union Members Chose to Migrate to the Central Valley for First Time Homes:** In the seven county Central Valley, there were 177 cases in 43 of the 50 occupations in which 30,787 union construction workers could afford the \$40,213 income needed for the \$248,028 lower priced first time home. They represented 98.5% of all such workers. Only 482 SF Bay Area union construction workers could not afford the Central Valley's affordable homes. The workers by occupation and counties in which they worked:
 - Electricians in every county (5,586)
 - Carpenters in every county (4,670)
 - Plumbers, Pipefitters, and Steamfitters in every county (3,433)
 - Construction Laborers in every county (2,631)
 - First-Line Supervisors of Construction Trades and Extraction Workers in every county (2,085)
 - Operating Engineers and Other Construction Equipment Operators in every county (1,451)
 - Drywall and Ceiling Tile Installers in very county but Marin (1,117)
 - Structural Iron and Steel Workers in Alameda, Contra Costa, Santa Clara, Solano, Sonoma (906)
 - Cement Masons and Concrete Finishers in very county but San Francisco, San Mateo (848)

- Electrical and Electronics Repairers, Commercial and Industrial Equipment in very county but Marin, Napa (793)
- Painters, Construction and Maintenance in every county (766)
- Heating, Air Conditioning, and Refrigeration Mechanics and Installers in very county but Napa (708)
- Construction and Building Inspectors in every county (691)
- Hazardous Materials Removal Workers in Alameda, Contra Costa, Santa Clara, Sonoma (583)
- First-Line Supervisors of Mechanics, Installers, and Repairers in every county (647)
- Sheet Metal Workers in Alameda, Contra Costa, Santa Clara (428)
- Installation, Maintenance, and Repair Workers, All Other in every county (517)
- Mobile Heavy Equipment Mechanics, Except Engines in very county but Marin (359)
- Tapers in Alameda, Contra Costa, San Francisco, San Mateo, Santa Clara, Sonoma (292)
- Helpers — Installation, Maintenance, and Repair Workers in Marin, San Francisco, San Mateo, Santa Clara (118)
- Highway Maintenance Workers in very county but Marin, Solano (275) Roofers in very county but Sonoma (270)
- Reinforcing Iron and Rebar Workers in Alameda, Contra Costa, Santa Clara (263)
- Glaziers in Alameda, Contra Costa, Napa, San Francisco, San Mateo (154)
- Pile-Driver Operators in Alameda, Contra Costa, San Francisco, San Mateo, Santa Clara (150)
- Tile and Marble Setters in every county (119)
- Septic Tank Servicers and Sewer Pipe Cleaners in Alameda, Contra Costa, San Francisco, San Mateo, Sonoma (106)
- Solar Photovoltaic Installer in Alameda, Contra Costa, Marin, San Francisco, San Mateo, Sonoma (98)
- Mechanical Door Repairers in Alameda, Contra Costa, San Francisco, San Mateo (90)
- Elevator Installers and Repairers in Alameda, Contra Costa (88)
- Plasterers and Stucco Masons in Alameda, Contra Costa, Napa (81)
- Helpers — Carpenters in Alameda, Contra Costa, San Francisco, San Mateo, Santa Clara, Sonoma (67)
- Control and Valve Installers and Repairers, Except Mechanical Door in Alameda, Contra Costa, Santa Clara, Solano, Sonoma (65)

- Brickmasons and Blockmasons in Alameda, Contra Costa, Napa (63)
- Insulation Workers, Floor, Ceiling, and Wall in Alameda, Contra Costa (57)
- Pipelayers in Alameda, Contra Costa, Marin (49)
- Helpers — Electricians in Alameda, Contra Costa (45)
- Floor Layers, Except Carpet, Wood, and Hard Tiles in Alameda, Contra Costa, San Francisco, San Mateo (32)
- Miscellaneous Construction and Related Workers in Alameda, Contra Costa, San Francisco, San Mateo, Santa Clara (30)
- Carpet Installers in Alameda, Contra Costa (26)
- Helpers, Construction Trades, All Other in Alameda, Contra Costa (15)
- Fence Erectors in Alameda, Contra Costa, Santa Clara (9)
- Earth Drillers, Except Oil and Gas in Alameda, Contra Costa (4)

Summary: Construction Workers

For construction workers generally, the high **median prices** in the SF Bay Area have shut them out of the ability to afford homes in eight of nine county markets. The lone exception was for only supervisor and inspector positions in Solano County. For those willing to migrate to the Central Valley, about half of workers could afford median homes in that market. For more highly paid union construction workers, this continues to apply to eight of nine counties. The exception was more outlying Solano County where about one-third of union construction workers could afford the median home. If union workers are willing to migrate to the Central Valley, over 90% of SF Bay Area union workers could afford that area's median home price.

If **lower priced first time homes** can be found, construction workers generally could still not afford prices in six of the SF Bay Area counties. About one in ten could do so in Contra Costa and Sonoma. About half could afford first time homes in Solano County. If workers are willing to migrate to the Central Valley, over 95% of combined union and non-union workers could afford that area's median home price. In the case of union workers, "affordable" homes in the five largest counties would still be too expensive (*San Francisco, San Mateo, Marin, Santa Clara, Alameda*). About one-quarter of union workers could afford a lower priced home in Napa County. About half of union workers could do so in Contra Costa and Sonoma counties. Over 90% could do so in Solano county. If union workers are willing to migrate to the Central Valley for an affordable level home, almost all of SF Bay Area union workers could afford that area's median home price.

Commuting

According to data from the Census Bureau’s 2014 American Community Survey released in late 2015, U.S. construction workers had the longest average one-way commute time of any occupation (33.4 minutes). They also ranked third among professions in their likelihood of being commuters (93.6%). These data are relevant to California’s construction workers in that the cost of housing in Southern California’s coastal counties and the SF Bay Area has essentially made it impossible for them to afford homes inside those markets. Many existing workers may be homeowners or renters in these markets today. However looking ahead, those seeking to quit renting as well as new workers entering the sector will be unlikely to be able to live near their work. In the south, construction workers can only afford to buy affordable homes deep inside the Inland Empire. In the SF Bay Area, they are increasingly having to look to the Central Valley for homes.

Exhibit 17. – Commuting by Occupation			
Occupation	Commute Time	Drive to Work	Share
Construction & Mining	33.4	Health Practitioners	94.6%
Commuter Science & Math	31.8	Installation, Repair	94.5%
Business Operations Specialists	30.2	Construction & Mining	93.6%
Architecture & Engineering	30.2	Industrial Production	93.3%
Finance	29.4	Police, Firefighters etc	92.4%

Source: 2014 American Community Survey data compiled by Priceconomics

This means that California’s construction workers, whether union or non-union, are already long distance commuters or will be in the future. Looking at five examples of the drive times from the Southern California’s coastal counties to the Inland Empire shows the problem in that part of the state. In each case, the one-way commutes are measured in hours not minutes. This, despite using early morning commute times (4:00 am or 5:00 am) and 3:00 pm return times outside typical commuter hours. The cities chosen are the areas of the Inland Empire in which population growth is the strongest and where new residents are likely to work in the coastal counties. The internal commute from Hesperia to Eastvale/So. Ontario is included as it is from the fast growing and affordable High Desert to the part of the Inland Empire adjacent to Los Angeles County:¹³

- Beaumont (S. Bernardino) to City of Industry (Los Angeles), 61.2 miles, 80 min. at 5:00 am. City of Industry to Beaumont at 3:00 pm, 100 min. Total: 180 minutes or **3 hours**
- Lake Elsinore (Riverside) to Irvine (Orange), 47.0 miles 70 min. at

5:00 am. Irvine to Lake Elsinore at 3:00 pm, 70 min. at 3:00 pm. Total 140 min. or **2 hours, 20 min.**

- Menifee (*Riverside*) to San Diego, 70 min. at 4:00 am. San Diego to Menifee, 120 min. at 3:00 pm. Total: 190 min. or **3 hours 10 min.**
- Hesperia (*San Bernardino*) to Eastvale/So. Ontario (*Riverside*), 47.3 miles, 55 min. at 5 am. Eastvale/So. Ontario to Hesperia, 75 min. at 3:00 pm. Total 165 min. or **2 hour 45 min.**
- San Bernardino to Los Angeles, 61.3 miles, 90 min. at 5:00 am. Los Angeles to San Bernardino, 120 min. Total: 210 min. or **3 hours 30 min.**

Similarly, five examples of the driving times to the SF Bay Area from the Central Valley are used to show the commuting difficulty in Northern California. In each case, the one-way commutes are also measured in hours not minutes. This, despite also using early morning commute times (4:00 am or 5:00 am) and 3:00 pm return times outside typical commuting hours. The internal commute from Fairfield to San Francisco is included as that city is located in somewhat affordable Solano County:

- Tracy (*San Joaquin*) to Hayward (*Alameda*), 39.2 miles, 70 min. at 5:00 am. Hayward to Tracy, 75 min. at 3:00 pm. Total: 145 min. or **2 hours 25 min.**
- Stockton (San Joaquin) to San Jose (Santa Clara), 75.6 miles, 100 min. at 4:00 am. San Jose to Stockton at 3:00 pm, 140 min. Total: 240 minutes or **4 hours.**
- Modesto (Stanislaus) to Palo Alto (San Mateo), 91.0 miles, 140 min. at 5:00 am. Palo Alto to Modesto, 180 min. at 3:00 pm. Total: 320 min. or **5 hours 20 min.**
- Fairfield (Solano) to San Francisco, 47.4 miles, 65 minutes at 5:00 am. San Francisco to Fairfield, 100 min. at 3:00 pm. Total: 165 min. or 2 hours 45 min.
- Lodi (San Joaquin) to Concord (Contra Costa), 54.0 miles, 75 min. at 5:00 am. Concord to Lodi at 75 min. at 3:00 pm. Total 150 min. or 2 hours 30 min.

Long commutes take a serious toll on the health of workers:¹⁴

- “Studies have shown that long commutes negatively impact our physical health in several ways, including decreased cardiorespiratory fitness, weight gain, musculoskeletal pain, higher blood sugar levels, and increased blood pressure.
- Studies report that mega commuters have a lower perception of their personal wellness—and tend to visit their primary care physician more frequently.

- Studies show that many mega commuters, especially men, choose their commute over sleep.”
- In addition, daily absences from home due to long distance commuters take a toll of families.

These things said, workers often value their time sitting in traffic at zero. What can be measure is the out of pocket costs of their fuel consumption and the wear and tear on their vehicles. Here, the American Automobile Association (AAA) has conducted research on driving costs for years. Their research includes the cost of driving pickup trucks: Chevrolet Silverado 1500, Ford F-150, Nissan Titan, Ram 1500 and Toyota Tundra. For 2018, they found the cost to be \$0.23 per mile for fuel and maintenance for driving over 20,000 miles a year, plus \$0.18 per mile for depreciation, a total of \$0.41 per mile:¹⁵

Doubling the one-way miles shown in the ten examples above yields the daily round trip mileage for each trip. Using the \$0.41 per mile cost for pickup trucks from AAA gives the cost of driving per day. Assuming driving occurs for five days a week, 50 weeks a year, the annual cost would be based upon 250 days. The results show the least expensive drive in the SF Bay Area region would be from Tracy to Hayward at \$8,036; the most expensive from Modesto to Palo Alto at \$18,655 per year. In Southern California, the least expensive drive would be from Lake Elsinore to Irvine at \$9,635; the most expensive would be from Menifee to San Diego at \$14,350. These are conservative estimates in that the miles per gallon would likely be lower as most commuting is in heavy traffic. Importantly, despite the environmental impact of longer, slower commutes, no cost of that impact is included in the analysis.

To put these commuting costs into perspective, the annual weight median

Exhibit 18. – Operations & Ware & Tear Cost of Commuting by Pick-up Truck, 2018						
Commute		Round Trip	Cost Per Mile	Daily Cost	Workdays	Total Cost
No.	Modesto to Palo Alto	182.0	\$0.41	\$74.62	250	\$18,655
No.	Stockton to San Jose	151.2	\$0.41	\$61.99	250	\$15,498
So.	Menifee to San Diego	140.0	\$0.41	\$57.40	250	\$14,350
So.	San Bernardino to Los Angeles	122.6	\$0.41	\$50.27	250	\$12,567
So.	Beaumont to City of Industry	122.4	\$0.41	\$50.18	250	\$12,546
No.	Lodi to Concord	108.0	\$0.41	\$44.28	250	\$11,070
No.	Fairfield to San Francisco	94.8	\$0.41	\$38.87	250	\$9,717
So.	Hesperia to Eastvale/So. Ontario	94.6	\$0.41	\$38.79	250	\$9,697
So.	Lake Elsinore to Irvine	94.0	\$0.41	\$38.54	250	\$9,635
No.	Tracy to Hayward	78.4	\$0.41	\$32.14	250	\$8,036

pay across all occupations for construction workers was \$65,448 in 2018 for the SF Bay Area and \$54,116 in Southern California. If the commuting costs are deducted from these amounts it lowers the net pay to between \$39,766 for the Menifee to San Diego commute to \$57,412 for Tracy to Hayward. The share of income lost to commuting varies from 12.3% for Tracy to Hayward to 28.5% from Modesto to Palo Alto (*Exhibit 19*).

The annual weight median pay across all occupations for union construction workers was \$89,015 in the SF Bay Area and \$73,259 in Southern California. If the commuting costs are deducted from these amounts it lowers the net pay to between \$58,909 for the Menifee to San Diego commute to \$80,979 for Tracy to Hayward. The share of income lost to commuting varies from 9.0% for Tracy to Hayward to 21.0% from Modesto to Palo Alto (*Exhibit 19*).

Exhibit 19. – Net Construction Earnings After Commuting Cost, All Workers					
Commute		All Construction	Commuting Cost	Net	% Commuting Loss
No	Tracy to Hayward	\$65,448	\$8,036	\$57,412	12.3%
No	Fairfield to San Francisco	\$65,448	\$9,717	\$55,731	14.8%
No	Lodi to Concord	\$65,448	\$11,070	\$54,378	16.9%
No	Stockton to San Jose	\$65,448	\$15,498	\$49,950	23.7%
No	Modesto to Palo Alto	\$65,448	\$18,655	\$46,793	28.5%
So.	Lake Elsinore to Irvine	\$54,116	\$9,635	\$44,481	17.8%
So.	Hesperia to Eastvale/So. Ontario	\$54,116	\$9,697	\$44,420	17.9%
So.	Beaumont to City of Industry	\$54,116	\$12,546	\$41,570	23.2%
So.	San Bernardino to Los Angeles	\$54,116	\$12,567	\$41,550	23.2%
So.	Menifee to San Diego	\$54,116	\$14,350	\$39,766	26.5%

Source: Economics & Politics, Inc.

Summary: Commuting Costs

If the housing shortage will cause housing prices continue to remain at their very high prices or continue rising in the SF Bay Area and the coastal counties of Southern California, it will have a detrimental impact on the lives of all construction workers as well as those in construction unions. Commuting will impact their health and lifestyles. The cost of driving will significantly lower their net incomes.

Exhibit 20. — Net Construction Earnings After Commuting Cost, Union Workers

Commute		Union Construction	Commuting Cost	Net	% Commuting Loss
No.	Tracy to Hayward	\$89,015	\$8,036	\$80,979	9.0%
No.	Fairfield to San Francisco	\$89,015	\$9,717	\$79,298	10.9%
No.	Lodi to Concord	\$89,015	\$11,070	\$77,945	12.4%
No.	Stockton to San Jose	\$89,015	\$15,498	\$73,517	17.4%
No.	Modesto to Palo Alto	\$89,015	\$18,655	\$70,360	21.0%
So.	Lake Elsinore to Irvine	\$73,259	\$9,635	\$63,624	13.2%
So.	Hesperia to Eastvale/So. Ontario	\$73,259	\$9,697	\$63,563	13.2%
So.	Beaumont to City of Industry	\$73,259	\$12,546	\$60,713	17.1%
So.	San Bernardino to Los Angeles	\$73,259	\$12,567	\$60,693	17.2%
So.	Meniffee to San Diego	\$73,259	\$14,350	\$58,909	19.6%

Source: Economics & Politics, Inc.

Note: The lowering of incomes due to commutes was not included in determining the ability of construction workers to afford homes. It was a consequence of them being forced to migrate inland if they wanted to buy homes or rent given the circumstances in nearby coastal areas.

Summary

In this report, a very detailed look was taken at the ability of construction workers, in 50 occupational specialties, whether unionized or not, to buy median priced or low priced first time homes in the markets where they work. It found very few cases in which they could afford to do so. They are caught in this situation because of extremely high housing prices in each of Southern California's three main coastal county markets and in each of the SF Bay Area's nine counties. This situation has been created by a shortage of new housing units that has often resulted from the residential market's reaction to state laws and policies. For the vast majority of construction workers looking to buy or rent dwelling units, their only options are to try and find first time lower priced affordable homes in often distant outlying markets such as the Inland Empire and the Central Valley. As a result, these workers already face, or will increasingly find themselves facing very long, time consuming and expensive commutes with the resulting wear and tear on their vehicles, themselves and the environment. The cost of commuting will also seriously reduce their disposable incomes. The only exceptions are those who already own homes or have long term apartment leases.

ENDNOTES

- 1 2018 Progress Report, California’s Sustainable Communities and Climate Protection Act, California Air Quality Resources Board (CARB), p. 39
- 2 2018 Progress Report, CARB, p. 64-65
- 3 CA Association of Realtors Affordability Index (see page 2 discussion)
- 4 These data were from DataQuick which obtains its pricing information from county recorders offices.
- 5 The pay information on workers was derived from the CA Employment Development Department’s (EDD) publication of pay scales by occupation, by market for 2018.
- 6 The income requirements were taken from CA Association of Realtors data on income requirements.
- 7 Some families have a second working parent often in a lower wage sector. Making allowance for this would raise serious child care issues. According to the National Association of Child Care Resource & Referral Agencies, California’s 2018 child care costs in at a licensed child care center were \$16,542 (infant), \$11,202 (4-year old), \$3,736 (in school). For licensed family care homes, they were respectively \$10,609; \$9,984 and \$3,845.
- 8 Sacramento omitted as a special case since it is the state capitol
- 9 2018 Progress Report, CARB
- 10 The lowering of incomes due to commutes was not included in determining the ability of construction workers to afford homes. It was a consequence of them being forced to migrate inland if they wanted to buy homes or rent given the circumstances in nearby coastal areas.
- 11 Union Membership, Coverage, Density and Employment by Combined Statistical Area (CSA) and MSA, 2017, © 2018 by Barry T. Hirsch and David A. Macpherson, UnionStats.com.
- 12 Union Membership, Coverage, Density and Employment by Combined Statistical Area (CSA) and MSA, 2017, © 2018 by Barry T. Hirsch and David A. Macpherson, UnionStats.com
- 13 Times and distances from Google Maps
- 14 Are Mega Commutes Leading to More Stress Among Your Employees, Canopy Health, January 11, 2018
- 15 How Much Are You Really Paying to Drive?, American Automobile Association, 2018



