Blue Sky
CONSULTING GROUP

IMPACTS OF A PREVAILING WAGE REQUIREMENT FOR MARKET RATE HOUSING IN CALIFORNIA

AN ASSESSMENT OF THE LIKELY IMPACT ON CONSTRUCTION COSTS

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Prepared by

Matthew Newman and Shawn Blosser

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Contents

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EXECUTIVE SUMMARY

Prevailing wages laws have traditionally required that workers building government-funded construction projects be paid specified minimum wage rates. Proponents of prevailing wage laws argue that they increase wages and benefits for construction workers. Opponents claim that they decrease competition by reducing the number of bidders and result in higher costs for publicly-funded construction projects.

Privately financed market rate housing, with very few exceptions, has traditionally not been subject to prevailing wage requirements. Legislation in California earlier this year, however, could have expanded prevailing wage requirements to include most of the new market rate housing produced throughout the state. This study attempts to quantify the impacts of expanding prevailing wage requirements to include the construction of new market rate housing in California.

Impact on Costs

While the differences vary by occupation and county, our analysis indicates that the prevailing wage rates for residential construction workers are generally much higher than the corresponding market wage rates. Overall, we estimate that requiring prevailing wage rates for privately financed residential construction would result in an increase in total hourly rates that range from a low of 39% for electricians up to a high of 116% for construction laborers. Overall, we estimate that hourly labor costs for residential construction statewide would be on average 89% higher if builders were required to pay prevailing wage rates for all residential construction projects.

Labor currently accounts for approximately 41% of the construction costs for a typical single family home in California. Assuming no changes in the use of labor, the estimated 89% increase in hourly labor costs would result in a 37% increase in total construction costs. To put this in dollar terms, the construction cost for a new single family home of average quality is currently about $88 per square foot. A 37% increase in construction costs would thus translate to an increase of more than $32 per square foot. For a typical new home, this would result in a total construction cost increase of just over $84,000.

The results presented above are based on current construction practices and current costs for non-labor elements of the construction process. Prevailing wage proponents often argue, however, that higher labor costs will lead to other changes to the construction process. For example, higher wages may serve to attract more productive workers.[1] Such changes to increase worker productivity could, over time, mitigate some portion of the labor cost increases estimated above (assuming no additional changes that act to increase wages) although research on the impact of prevailing wages for residential construction in California suggests that these productivity increases are not sufficient to offset the cost increases that result from a prevailing wage requirement. In addition, builders may also choose to purchase more prefabricated components from

[1] For a review of the literature on the links between higher wages and productivity, see Wolfers and Zilinsky (2015).

off-site manufacturers. A shift to more prefabricated components could reduce the increase in labor costs (although materials costs would increase). In addition, there may be added costs associated with prevailing wage requirements, including increased administrative and monitoring costs, as well as additional costs from prevailing wage overtime or supplemental pay requirements. And, costs for elements of the construction process that are related to total construction costs, such as financing and insurance costs, could also increase as prevailing wage requirements increase construction costs.

Conclusion

Our analysis shows that expanding prevailing wage requirements to include market rate housing would almost certainly meet its main objective: it would substantially raise wages for the workers who build new homes throughout the state. However, by raising labor costs for residential construction, a prevailing wage requirement could lead to a reduction in the number of new market rate houses built, fewer affordable housing units, and a decrease in the number of construction jobs in the state (as a result of decreased construction activity, increased worker productivity, and a shift to labor savings construction techniques).

Overall, our analysis shows that expanding prevailing wage requirements to include privately financed housing construction in California would also increase the costs of building new homes. Requiring prevailing wage rates for residential construction would increase hourly labor costs by 89% on average, with some parts of the state experiencing increases of more than 125%. We estimate that this increase could translate to a 37% increase in construction costs, or about $84,000 for a typical new home.

INTRODUCTION

Background and Context

Prevailing wages laws have traditionally required that workers building government-funded construction projects be paid specified minimum wage rates, which are typically set equal to unionized workers' rates for the relevant trade and region. Both the federal government and California currently have prevailing wage requirements for projects funded by federal or state sources. Proponents of prevailing wage laws argue that they increase wages and benefits for construction workers and help to ensure a middle class standard of living for workers, while opponents claim that they decrease competition by reducing the number of bidders and result in higher costs for publicly funded construction projects.

Residential construction projects have historically been required to pay prevailing wages only when they involve public money in some way, either directly to build affordable housing units or through low-cost loans or other arrangements. Privately financed market rate housing, with very few exceptions, has traditionally not been subject to prevailing wage requirements. Legislation introduced in California earlier this year, however, could have expanded prevailing wage requirements to include most of the new market rate housing produced throughout the state. This study attempts to quantify the impacts of expanding prevailing wage requirements to include the construction of new market rate housing in California.

History of Prevailing Wages

Congress passed the Davis-Bacon Act, the federal prevailing wage law, in 1931. Its purpose was to protect the livelihood of workers during the Great Depression from the bidding process for federal construction projects, which encouraged contractors to win bids by lowering wages, often by bringing in lower-paid workers from other parts of the country. The law initially applied only to base wages, but after 1964 it was amended to require that contractors also provide specified fringe benefits. The Secretary of the Department of Labor is responsible for determining both the prevailing wage rates and the minimum fringe benefits to be paid for federal construction projects.

Following the enactment of the federal law, a number of states passed their own prevailing wage laws. California passed a state prevailing wage law in 1931, the same year as the federal bill. The California statute applies to a broader spectrum of publicly funded projects than the federal bill, including demolition work, job site refuse hauling, street and sewer construction, and building maintenance for public utilities.[2] State prevailing wage rates are determined for each construction trade and region of the state by the Department of Industrial Relations (DIR). To determine these prevailing wage rates, the DIR uses a modal method, meaning the prevailing wage is set to equal the wage paid to the majority, or greatest number, of workers. This is specifically set out in California's Labor Code as follows:

[2] See Theiblot 1995.

> *The basic hourly wage rate being paid to a majority of workers engaged in the particular craft, classification, or type of work within the locality and in the nearest labor market area, if a majority of the workers is paid at a single rate. If no single rate is being paid to a majority of the workers, then the single rate being paid to the greatest number of workers, or modal rate, is prevailing.*[3]

In practice, the prevailing wage rate often equals the wage rate determined by collective bargaining agreements. Indeed, the Labor Code explicitly states that these union wage rates are to be considered in setting the prevailing wage:

> *If a modal rate cannot be determined, then the director shall establish an alternative rate, consistent with the methodology for determining the modal rate, by considering the appropriate collective bargaining agreements, federal rates, rates in the nearest labor market area, or other data such as wage survey data.*[4]

Thus, for a particular region, the prevailing wage determinations are often set equal to the base hourly wage rate and benefits paid to union workers. The prevailing wage requirements may also define the level and conditions under which overtime or supplemental pay is required (e.g., for work performed on holidays, or higher rates for second or third shift workers), as well as travel and subsistence payments, which can also vary by trade and region.

The DIR is responsible for determining separate rates for residential and nonresidential (or "general") construction projects. Residential construction workers typically receive lower wages than nonresidential construction workers in the private market, and it is typically the case that residential prevailing wage rates are lower than general (nonresidential) prevailing wage rates. There are, however, numerous trades and regions for which the DIR has not published a residential determination; in those cases, the employer may either request a residential determination or use the published general prevailing wage rate for that trade.

Purpose of this Report

This report seeks to quantify the impacts of expanding prevailing wage requirements to include privately funded market rate residential housing. The analysis that follows consists of two parts. The first is an empirical analysis that compares prevailing wage rates with market rates to estimate the effective increase in hourly wage rates for residential construction workers. These wage increases are then used to estimate the potential construction cost increases for new housing in California. This is followed by a brief discussion of other economic issues related to the prevailing wage requirements, including how this could affect the production of both market rate housing and affordable housing throughout the state, and how secondary effects may lead to a reduction in the number of jobs in the residential construction sector.

[3] California Labor Code, Section 1773.9(b)(1).
[4] California Labor Code, Section 1773.9(b)(1).

PREVIOUS RESEARCH

While a number of studies have examined the economic impacts of prevailing wage requirements, most of these have analyzed the impact on publicly financed nonresidential construction such as schools, hospitals, and highways, with widely varying results.[5] While these studies are helpful for understanding the way prevailing wages may impact nonresidential construction, there are many reasons to be cautious about assuming the effects would be similar for market rate housing. First, it is not clear that labor would account for the same share of total construction costs in both types of construction (e.g., heavy machinery and equipment may account for a larger share of the budget for public works and infrastructure projects). As a result, the impact of a prevailing wage requirement on total construction costs would be correspondingly smaller. And, particularly where sample sizes are relatively small, such an effect could be beyond the ability of some statistical analysis techniques to detect. Also, building requirements can differ substantially between private homes and public buildings such as schools, courthouses and hospitals.[6] As such, the workers with the skills and experience needed for these types of projects may be more likely to belong to unions, which could diminish or even eliminate any premium for paying prevailing wage rates. For these reasons, it is important to focus on research that has analyzed the impact of prevailing wages on residential construction.

Only recently have researchers studied the impact of prevailing wage requirements on residential construction. These studies have focused on affordable housing, which is more likely to receive some sort of public subsidy and thus be required to pay prevailing wages. These more recent studies focusing on residential construction have consistently found that prevailing wages add to costs.

A 2004 study by Newman, Blosser and Haycock analyzed data for 365 projects that had applied for federal Low Income Housing Tax Credits (LIHTC) to build affordable rental units in California.[7] The authors used multivariate regression analysis to estimate the impact of requiring prevailing wages and found that overall project costs (i.e., all project costs except for land) were 11.0% higher for the prevailing wage projects after controlling for other project characteristics such as size and location. The authors estimated that – if no additional money was allocated to cover these higher costs – requiring all affordable housing construction projects to pay prevailing wages would have resulted in close to 1,400 fewer units being produced annually.

[5] For example, Fraundorf et al. (1984) estimated a 26% cost increase from prevailing wages using a variety of public nonresidential buildings. Prus (1996) replicated this study with an added control for public vs. private buildings and found that the increase from prevailing wages was no longer statistically significant. Fisher and Sheehan (1985) examined bids for government contracts for both highways and public buildings, estimating that prevailing wage requirements would raise construction costs 1% for highways and 3.5% for buildings. Many researchers who have studied prevailing wages have focused exclusively on school construction, usually analyzing bids rather than final costs. These include Prus (1999), Bilginsoy and Philips (2000), Philips (2001), Azari-Rad et al. (2002 and 2003), none of which found a statistically significant increase in construction associated with prevailing wage requirements.

[6] Indeed, as Azari-Rad, Philips and Prus warned in their 2003 study of the impact of prevailing wages on school construction, "The effect of prevailing wage regulations on the cost of construction may vary with the type of construction."

[7] See Newman, Blosser and Haycock (2004).

A similar study by Dunn, Quigley and Rosenthal from 2005 also used data from projects that received tax credits to build affordable housing in California.[8] This research, funded by a grant from the U.S. Department of Housing and Urban Development and by the Berkeley Program on Housing and Urban Policy, examined 205 residential projects, some built with prevailing wages and others with market wages. The authors found that projects subject to prevailing wage requirements had construction costs that were 9% to 37% higher, depending upon the statistical model and cost measure utilized, and estimated that over 3,100 fewer units would be constructed annually statewide under the prevailing wage requirement.

More recently, the California Affordable Housing Cost Study (2014) published by the California Department of Housing and Community Development, the California Tax Credit Allocation Committee, the California Housing Finance Agency, and the California Debt Limit Allocation Committee examined the factors that are correlated with higher and lower development costs for multifamily affordable housing units.[9] Using project cost data from the Tax Credit Allocation Committee (TCAC), survey responses from the developers, and public sources such as the Census and the Federal Reserve, the authors compiled a comprehensive data set of 402 multifamily affordable housing projects. This study found that the project costs (net of land) were 11% higher for prevailing wage projects, all else equal.

Finally, a 2016 report by the New York City Independent Budget Office used budgeted cost data from the city's Department of Housing Preservation and Development to estimate the impact of prevailing wages on the cost of constructing affordable housing units.[10] This study compiled a data set of over 200 affordable housing development projects financed from 2010 through 2015, 57 of which were prevailing wage projects. Using regression analysis to control for other project characteristics such as size, location, and timing, they tested two models. The first used total construction costs (i.e., all development costs including construction hard costs, soft costs, developer fees, and project reserves, but excluding all costs associated with land acquisition) as the dependent variable. The second used just hard construction costs (labor and materials). Both models found a statistically significant impact from a prevailing wage requirement, with a 13% increase for total construction costs and a 19% increase for just hard costs. The authors estimated that the prevailing wage requirement added approximately $45,000 on average to the cost of an affordable housing unit.

ANALYSIS

Overview and Methodology

The goal of this study is to quantify the impact of expanding prevailing wage requirements to include market rate residential construction projects in California. To do this we first estimate the current wage differential between prevailing wage rates and market wage rates for the most common residential construction trades.

[8] See Dunn, Quigley and Rosenthal (2005).
[9] See Newman, Blosser and Woodward (2014).
[10] See New York City Independent Budget Office (2016).

These differentials are calculated by trade and by county and include both base wages and benefits. Next, we estimate the overall labor cost increase for a typical residential construction project by computing a weighted average increase, using construction cost estimation software to determine the weights to assign to each trade based on its share of the labor costs for a typical single family home. We then use the same cost estimation software and a survey of national home builders to estimate the total potential increase in construction costs.

Data Sources

To compare market wage rates to prevailing wage rates, we first collected detailed market wage rate data for the base hourly rate and the level of benefits currently paid to residential construction workers in California for the following seven occupations: carpenter, drywall installer, electrician, plumber, sheet metal worker, roofer, and construction laborer. The base hourly wage rates for the first quarter of 2016, the most current data available, were provided by the California Employment Development Department (EDD).[11]

To estimate the level of benefits currently provided to residential construction workers, we used data derived from the Bureau of Labor Statistics' 2012 National Compensation Survey.[12] According to this survey, employer costs for health insurance, retirement savings, and paid leave represented 15.1% of base wages and salaries for residential construction workers. We applied this benefit cost to base hourly wage rates reported by the EDD to estimate a total hourly wage cost for residential construction workers in California.

As mentioned above, prevailing wage rates are determined by the Department of Industrial Relations (DIR). The DIR website publishes prevailing wage rates by county and trade for both residential and nonresidential construction.[13] These determinations include the hourly base rate and benefits, which include the following categories: Health & Welfare, Pension, Vacation/Dues, Training, and Other. To ensure that contemporaneous wage rates were analyzed, we used the prevailing wage and benefit requirements that were in effect during the first quarter of 2016.

To estimate the potential overall increase in labor costs, it was necessary to determine the relative share of labor costs accounted for by each of the seven trades analyzed for a typical residential construction project.

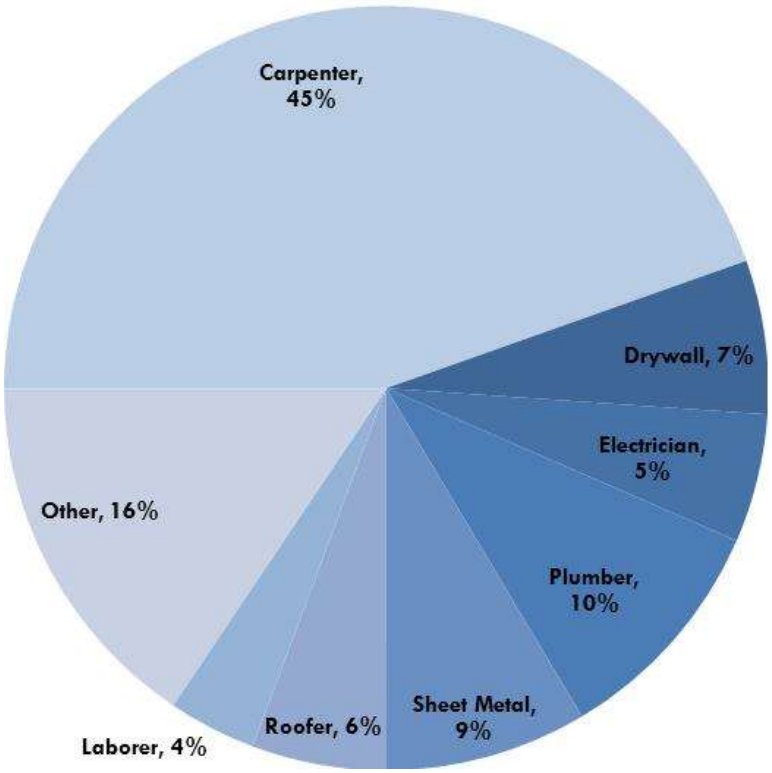
[11] The EDD publishes employment and wage estimates by Metropolitan Statistical Area (MSA) and county for over 800 occupations. The data published by the EDD do not distinguish by type of construction; however, we requested and received the detail data for NAICS codes 2361 (Residential Building Construction) and 2362 (Nonresidential Building Construction). Wherever possible we used the market wage rate for a given trade associated with residential construction, but if this was not available we used the combined wage rate for that occupation/region and adjusted it using the ratio of (a) the wage rate for all construction occupations in the residential construction sector to (b) the wage rate for all construction occupations for all construction types for that region.

[12] These data were published in "The construction chart book: The US construction industry and its workers," by CPWR – The Center for Construction Research and Training (April 2013), available at http://www.cpwr.com/publications/construction-chart-book. See specifically Table 24e.

[13] According to the DIR website: "As defined under the California Code of Regulations Section 16001(d), residential projects consist of single-family homes and apartments up to and including four stories." (see http://www.dir.ca.gov/OPRL/Residential/ResNotices/01-26-2009(Res).pdf).

This allocation was based on output from the Craftsman Book Company's online Construction Cost Calculator.[14] Using the Calculator, we estimated the cost details for a new home of average size and quality at various locations throughout California.[15] The average across these projects is shown in Figure 1. As shown in the chart, the seven trades account for 84% of the total labor costs for an average single family home built in California, with carpenters representing the largest share of construction labor costs at 45%.

FIGURE 1: ALLOCATION OF LABOR COSTS BY TRADE



To calculate the potential impact of a prevailing wage requirement on the total construction cost for new housing, we also needed a reliable estimate of the share of total construction cost represented by labor. The detailed cost estimates from the Craftsman Construction Cost Calculator provided an estimate of 41%. This estimate is very close to other published estimates, such as a 2002 survey of the nation's largest homebuilders, which found that labor accounted for 42% of the total hard costs associated with home construction. Similarly, in their 2005 study, Dunn, Quigley and Rosenthal published estimates for various California cities ranging from 42.6% to 45.0%. And, our own survey of California contractors reported an average value of 45% for labor's share of construction costs. Finally, to calculate a statewide average impact across all 58 counties, we used each county's share of the total value of building permits for single family homes issued in 2016, the most recent year for which the data are available. These data are presented in Figure 2 below.

[14] The online Construction Cost Calculator is available at http://www.building-cost.net/Valuation.

[15] The Census Bureau reports that the average size of a new single family home in the Western Region was approximately 2,600 sq ft in 2014.

FIGURE 2: CALIFORNIA SINGLE FAMILY RESIDENTIAL BUILDING PERMITS BY COUNTY (2016)

County	Units	Value	% Value	County	Units	Value	% Value
Alameda	2,111	$730,672,242	4.75%	Orange	4,195	$1,450,801,632	9.43%
Alpine	2	$429,566	0.00%	Placer	2,104	$777,701,528	5.05%
Amador	46	$8,662,976	0.06%	Plumas	44	$7,735,759	0.05%
Butte	429	$93,382,519	0.61%	Riverside	5,627	$1,516,788,804	9.86%
Calaveras	140	$35,659,009	0.23%	Sacramento	2,676	$611,073,555	3.97%
Colusa	56	$12,523,201	0.08%	San Benito	441	$116,781,443	0.76%
Contra Costa	1,851	$605,524,708	3.93%	San Bernardino	2,806	$681,472,636	4.43%
Del Norte	19	$5,071,189	0.03%	San Diego	2,412	$832,479,091	5.41%
El Dorado	799	$315,047,363	2.05%	San Francisco	127	$73,734,714	0.48%
Fresno	2,553	$686,150,516	4.46%	San Joaquin	1,782	$476,350,395	3.10%
Glenn	54	$11,438,108	0.07%	San Luis Obispo	531	$181,893,710	1.18%
Humboldt	155	$29,460,036	0.19%	San Mateo	455	$355,954,790	2.31%
Imperial	231	$48,376,629	0.31%	Santa Barbara	334	$136,564,460	0.89%
Inyo	17	$3,266,524	0.02%	Santa Clara	1,608	$660,301,615	4.29%
Kern	2,181	$489,908,431	3.18%	Santa Cruz	108	$29,890,380	0.19%
Kings	418	$102,205,370	0.66%	Shasta	261	$61,436,047	0.40%
Lake	242	$56,836,481	0.37%	Sierra	13	$2,197,117	0.01%
Lassen	13	$2,911,131	0.02%	Siskiyou	50	$12,250,715	0.08%
Los Angeles	4,654	$2,127,267,021	13.82%	Solano	822	$234,951,990	1.53%
Madera	328	$58,661,931	0.38%	Sonoma	581	$122,079,034	0.79%
Marin	104	$68,694,882	0.45%	Stanislaus	678	$156,444,532	1.02%
Mariposa	31	$8,861,647	0.06%	Sutter	58	$15,372,001	0.10%
Mendocino	69	$11,441,259	0.07%	Tehama	64	$13,172,391	0.09%
Merced	750	$156,282,831	1.02%	Trinity	14	$2,108,762	0.01%
Modoc	3	$377,000	0.00%	Tulare	1,159	$435,293,582	2.83%
Mono	44	$16,453,653	0.11%	Tuolumne	41	$9,179,038	0.06%
Monterey	453	$141,983,946	0.92%	Ventura	650	$236,183,623	1.53%
Napa	147	$61,558,195	0.40%	Yolo	611	$171,498,726	1.11%
Nevada	250	$76,376,560	0.50%	Yuba	190	$41,863,715	0.27%
				State Totals	**48,592**	**$15,389,040,709**	**100.00%**

Source: Construction Industry Research Board (see http://www.mychf.org/cirb.html).

FINDINGS

Wage Differentials

While the differences vary by occupation and county, our analysis indicates that the prevailing wage rates for residential construction workers are generally much higher than the corresponding market wage rates. The statewide average wage rate and benefits for the seven construction trades analyzed are presented in Figure 3 below. As shown in the table, prevailing wage base rates for residential construction workers in the first quarter of 2016 were generally higher than the market base wage rates, with the exception of sheet metal workers for which the prevailing wage base rate was slightly lower. However, the benefits required by the prevailing wage determinations are much higher than the average value of healthcare, retirement/pension and

paid time off benefits currently being paid. In some cases the prevailing wage benefits are more than five times higher. Overall, we estimate requiring prevailing wage rates for residential construction would result in an increase in total hourly rates that ranges from a low of 39% for electricians up to a 116% for construction laborers.

FIGURE 3: STATEWIDE AVERAGE RESIDENTIAL CONSTRUCTION MARKET WAGES VS. PREVAILING WAGES

	Market Wages			Prevailing Wages [3]			Percent
Occupation	Base Rate[1]	Benefits[2]	Total	Base Rate	Benefits	Total	Difference
Carpenter	$24.18	$3.66	$27.83	$32.99	$21.44	$54.43	96%
Drywall Installer	$25.13	$3.80	$28.93	$29.48	$21.61	$51.09	77%
Electrician	$27.06	$4.09	$31.15	$29.03	$14.19	$43.22	39%
Plumber	$26.06	$3.94	$30.01	$36.26	$21.26	$57.52	92%
Sheet Metal Worker	$23.91	$3.62	$27.53	$22.60	$15.87	$38.47	40%
Roofer	$20.81	$3.15	$23.96	$29.92	$14.87	$44.79	87%
Construction Laborer	$18.96	$2.87	$21.82	$28.86	$18.28	$47.14	116%

Notes:

[1] Market wage rates by MSA for 2016-Q1 were provided by the Employment Development Department (EDD) for all construction trades for NAICS 2361 (Residential Building Construction), along with the list of counties included in each MSA. Values for each county were weighted by the value of single family home permits in 2016.

[2] The BLS's 2012 National Compensation Survey reports that benefits for residential construction workers are 15.1% of base wages (see specifically "The construction chart book: The US construction industry and its workers," published by the Center for Construction Research and Training (April 2013)).

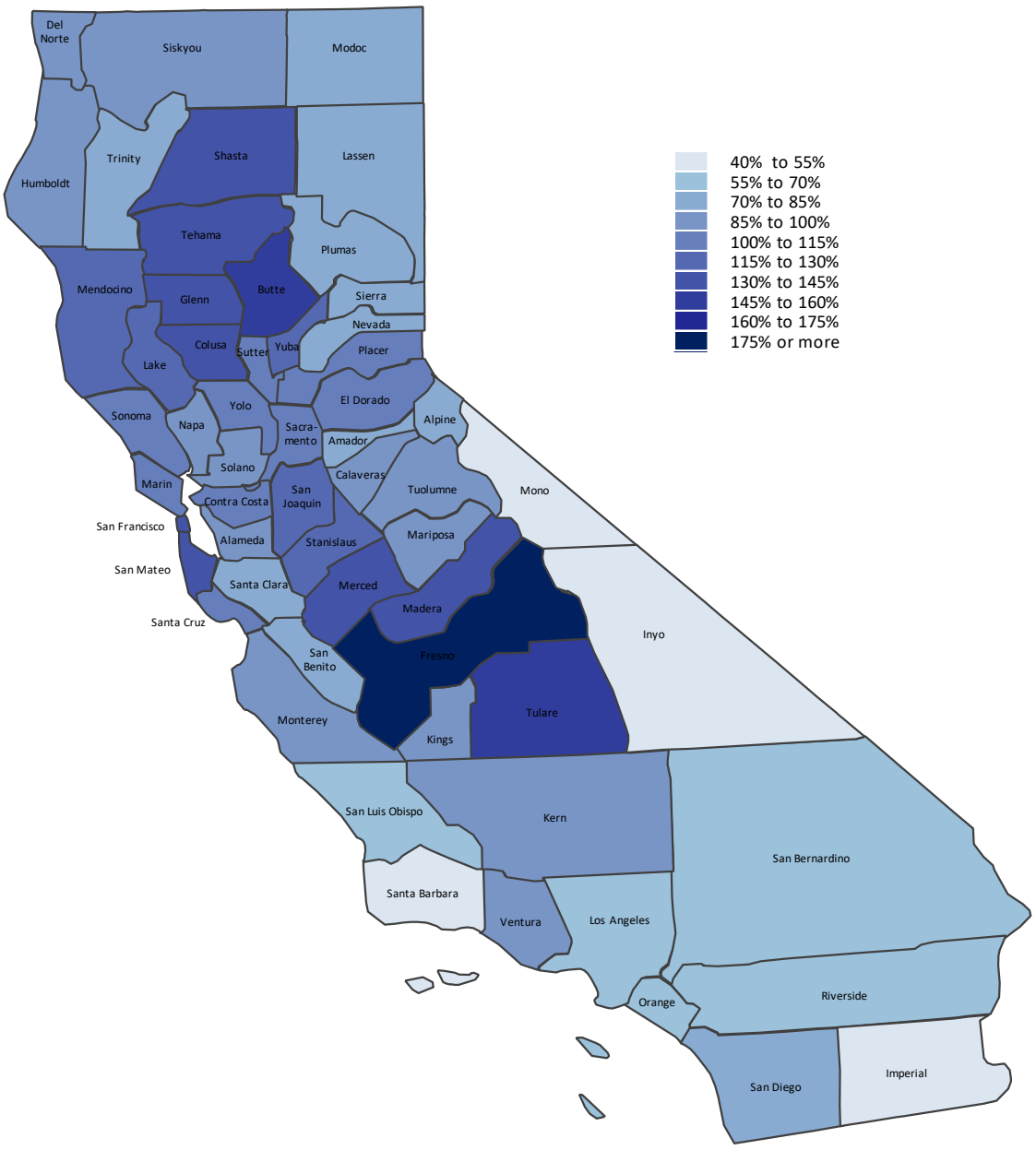
[3] Residential prevailing wage rates and benefits as published by the Department of Industrial Relations were used whenever available, otherwise commercial wage rates and benefits were used. Again, county values were weighted by the value of single family home permits issued in 2016 to estimate the statewide average.

Impact on Costs

To estimate how changes in hourly wage rates could impact total construction costs, we first estimated the average hourly increase in labor costs for each county. We calculated the average of the prevailing wage differential for each county by weighting each trade by its share of labor costs as presented in Figure 1 (page 10). The estimated average increase in labor costs by county is presented in Figure 4 below, along with a map to show how these values differ across the state. As Figure 4 shows, these wage differentials vary considerably by county, from a 48% increase in Imperial County up to a 184% increase in Fresno County. According to our analysis there are 25 counties that would see hourly residential construction labor costs at least double, and 12 counties where the increase would be more than 125%. We estimate that hourly labor costs for residential construction statewide would be on average 89% higher if builders were required to pay prevailing wage rates for all residential construction projects.

FIGURE 4: AVERAGE INCREASE IN RESIDENTIAL CONSTRUCTION LABOR COSTS BY COUNTY

Alameda	92%
Alpine	84%
Amador	71%
Butte	147%
Calaveras	93%
Colusa	137%
Contra Costa	105%
Del Norte	92%
El Dorado	108%
Fresno	184%
Glenn	137%
Humboldt	92%
Imperial	48%
Inyo	52%
Kern	88%
Kings	86%
Lake	119%
Lassen	77%
Los Angeles	55%
Madera	130%
Marin	110%
Mariposa	93%
Mendocino	130%
Merced	139%
Modoc	79%
Mono	52%
Monterey	100%
Napa	88%
Nevada	75%
Orange	64%
Placer	108%
Plumas	84%
Riverside	58%
Sacramento	114%
San Benito	76%
San Bernardino	58%
San Diego	77%
San Francisco	135%
San Joaquin	122%
San Luis Obispo	60%
San Mateo	133%
Santa Barbara	52%
Santa Clara	81%
Santa Cruz	103%
Shasta	134%
Sierra	84%
Siskiyou	85%
Solano	93%
Sonoma	110%
Stanislaus	116%
Sutter	111%
Tehama	137%
Trinity	85%
Tulare	148%
Tuolumne	93%
Ventura	90%
Yolo	114%
Yuba	123%



As discussed above, labor currently accounts for approximately 41% of the construction costs for a typical single family home in California. Assuming no changes in the use of labor, the estimated 89% increase in hourly labor costs would result in a 37% increase in total construction costs. To put this in dollar terms, consider the example in Figure 5 below. According to the Craftsman cost calculator, the average construction cost for a new single family home of average quality is currently about $88 per square foot. A 37% increase in construction

costs would thus translate to an increase of more than $32 per square foot. For a typical new home, this would result in a total construction cost increase of just over $84,000.

FIGURE 5: EXAMPLE OF COST INCREASE ASSOCIATED WITH PREVAILING WAGE REQUIREMENT

Construction Cost per Sq Ft	$88.03	[a]
Potential Construction Cost Increase per Sq Ft (37%)	$32.44	
Average Size of New Home (Sq Ft)	2,600	[b]
Potential Total Construction Cost Increase	$84,344	

[a] From Craftsman's Building Cost Calculator (see http://www.building-cost.net/Valuation).
[b] According to the Census Bureau, the average new single family home in the Western Region was 2,603 sq ft in 2014 (see https://www.census.gov/construction/chars/pdf/c25ann2014.pdf)

The results presented above are based on current construction practices and current costs for non-labor elements of the construction process. Prevailing wage proponents often argue, however, that higher labor costs will lead to other changes to the construction process. For example, higher wages may serve to attract more productive workers.[16] Higher labor costs might also incentivize employers to invest more heavily in the capital, building components, automation and equipment needed to increase their workers' productivity (in order to reduce the overall amount of labor needed to build a home). Such changes to increase worker productivity could, over time, mitigate some portion of the labor cost increases estimated above (assuming no additional changes that act to increase wages) although research on the impact of prevailing wages for residential construction in California suggests that any productivity improvements would not be sufficient to offset the cost increases brought about by a prevailing wage requirement.

In addition, builders may also choose to purchase more prefabricated components from off-site manufacturers. A study recently published by the Terner Center for Housing Innovation at U.C. Berkeley looked closely at the potential for off-site manufacturing to reduce the cost of affordable housing in California.[17] They found that off-site manufacturing as it is currently practiced could reduce the construction costs of a typical three or four story wood frame multifamily apartment building by up to 20%. A shift to more prefabricated components would result in lower labor costs (although materials costs would increase).

Finally, there may also be additional costs from expanding prevailing wage requirements, including increased administrative and monitoring costs, as well as additional costs associated with prevailing wage overtime or supplemental pay requirements. In addition, costs for elements of the construction process that are related to total construction costs, such as financing and insurance costs, could also increase as prevailing wage requirements increase construction costs.

[16] For a review of the literature on the links between higher wages and productivity, see Wolfers and Zilinsky (2015).
[17] See Galante, Draper-Zivetz, and Stein (2017).

OTHER POTENTIAL IMPACTS

Our analysis has shown that expanding prevailing wage requirements to include market rate housing would almost certainly meet its main objective: it would substantially raise wages for the workers who build new homes throughout the state. However, by raising labor costs for residential construction, a prevailing wage requirement could have other important economic effects as well. Higher costs could lead to a reduction in the number of new market rate houses built, fewer affordable housing units, and a decrease in the number of construction jobs in the state. These potential impacts are discussed in more detail below.

Reduction in New Home Construction

To the extent that the prevailing wage requirements lead to higher construction costs, many market rate housing projects may become infeasible, resulting in fewer new homes being built. This could occur in one of two ways. First, if the increased costs are passed on to the home purchaser, there would be less demand for these higher priced homes. According to the National Association of Home Builders (NAHB), as of 2016 for every $1,000 increase in housing 15,328 California households get priced out of purchasing a home, as their income levels do not allow them to qualify for the higher mortgages.[18] Alternatively, if the increased construction costs cannot be passed on to the home purchaser, the developer will be forced to offer less to landowners for their land. This reduction would likely lead to fewer landowners being willing to sell their land for residential development, especially if the land is currently in productive use (e.g., agriculture) or has alternative development potential (e.g., commercial or retail development). This reduction in the amount of land available for residential development would result in fewer new homes being built (which would in turn further increase housing prices as a result of the reduction in supply).

Increased Costs for and Reduced Production of Affordable Housing

Expanding prevailing wage requirements could also result in fewer affordable units being built. Not all affordable housing construction projects are currently required to pay prevailing wages. If this were to change, however, the associated increase in construction costs would mean that more public funds would be needed to cover these additional costs. To the extent more money is not made available, this would almost certainly lead to a reduction in the production of affordable housing units.

Fewer Construction Jobs

As shown in the analysis above, expanding prevailing wage requirements to include market rate residential housing would raise wages substantially for residential construction workers. However, it is also likely to result in fewer jobs in the residential construction industry for a number of reasons. First, the decrease in demand for

[18] See http://www.nahb.org/en/research/housing-economics/housings-economic-impact/households-priced-out-by-higher-house-prices-and-interest-rates.aspx.

both market rate and affordable housing will lead to a decrease in the demand for residential construction workers as fewer homes get built. Second, as described above, prevailing wage requirements are likely to result in a more productive workforce, both because the higher wages will attract and retain more highly skilled workers, and because employers will be incentivized to spend more on capital investments to boost productivity. These productivity increases will also result in the need for fewer residential construction workers. Finally, the higher cost of labor will also provide greater incentives for builders to use building components from off-site manufacturers (and other labor-saving techniques) rather than building the entire structures on-site. Thus, while wages for residential construction workers will be higher, this will almost certainly be offset by a decrease in the number of jobs in the residential construction sector.

CONCLUSIONS

Our analysis shows that expanding prevailing wage requirements to include privately financed housing construction in California would have its desired effect of increasing wages for construction workers; however, these requirements would also increase the costs of building new homes. Requiring prevailing wage rates for residential construction would increase hourly labor costs by 89% on average, with some parts of the state experiencing increases of more than 125%. We estimate that this increase could translate to a 37% increase in construction costs, or about $84,000 for a typical new home. In addition to increasing construction costs, other effects could include a decrease in the number of new market rate homes built, a reduction in new affordable housing units for the state, and fewer construction jobs.

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