Evaluating Wisconsin's Approach to Determining Prevailing Wages:

- State Methodology
- Regional Market Comparisons
- Local Fiscal Impact

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State Methodology, Regional Market Comparisons, Local Fiscal Impact

wistax

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To the directors:

In early fall of 2014, officials from Associated Builders and Contractors (ABC) approached the Wisconsin Taxpayers Alliance (WISTAX) regarding the feasibility of studying Wisconsin's prevailing wage law. They sought an evaluation of the soundness of Wisconsin's approach to calculating prevailing wages and an estimate of what, if any, additional costs this approach imposes on governments, particularly local ones. Those discussions led to a formal WISTAX study proposal which was subsequently approved by ABC.

From the outset, the goal of the research was not to evaluate the strengths or weaknesses of prevailing wage laws. Rather, our aim was to study the state's method of calculating those amounts from both statistical and sample survey perspective. In performing that analysis, we found at least two methodological "flaws" that tend to raise prevailing wages above market rates. Prevailing wages here tend to be 23% higher than averages from a statistically-valid federal survey of the same Wisconsin employers; and when prevailing wages and benefits are combined, they average 45% more than typical compensation packages estimated from the same federal survey.

This has fiscal implications for state and local governments. In 2014, the state Department of Workforce Development issued prevailing wage determinations for about $1.9 billion in building and heavy construction projects. If prevailing wages had reflected average wages and benefits, state and local governments—and taxpayers—could have saved as much as $299 million on those projects.

The research staff at the Wisconsin Taxpayers Alliance thanks the Department of Workforce Development and its expert staff for their help in navigating the arcane mechanics of Wisconsin's prevailing wage law. We also appreciate ABC's confidence in WISTAX's public-finance expertise to analyze this little-studied and highly-complex issue.

Sincerely,

Todd A. Berry
President

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Executive Summary

Wisconsin has had prevailing wage laws since the 1930s. Yet, Wisconsin's specific approach to calculating prevailing wages has undergone little study.

An in-depth examination of this methodology shows that Wisconsin's employer survey and unique calculations lead to prevailing wages that:

- ❑ Often do not reflect varying county construction wages or regional labor markets;
- ❑ Are more "costly" in low-wage, low-income counties, particularly those northern Wisconsin;
- ❑ Can fluctuate widely and unpredictably from year to year, rather than change slowly and consistently as market wages typically do;
- ❑ Can require contractors to pay unskilled workers more than skilled workers in some situations; and
- ❑ May cost state and local government hundreds of millions of dollars in excess costs.

Method. Wisconsin surveys construction contractors annually to get information on wages and benefits paid to workers on private construction projects. That information is then used to calculate, by county, hourly prevailing wage and benefit rates for public construction projects.

Unfortunately, only about 10% of surveys are completed correctly and returned, a dramatically lower response rate than achieved by the federal government survey of the same employers.

One result of this low return rate is that the union/nonunion split in hours reported in the survey do not reflect the overall construction industry. Approximately 25% of the industry is unionized in Wisconsin, but 87% of the hours reported are covered under union contracts. This tends to raise prevailing wage rates above market rates. Federal wage surveys take care to boost response rates and to ensure the characteristics of survey respondents match the underlying population.

A second methodological "flaw" also tends to inflate prevailing wages. Most states that employ survey averages to calculate prevailing wages use all survey responses. If the desire is to measure the "market," this kind of traditional average makes sense. However, Wisconsin is unique: it selects and averages only the top portion of the wage distribution. This unique method results in prevailing wages that can be 20% to 40% above the rate that results from calculating a true average from all respondents.

Prevailing Wages and the Market. If prevailing wages reflected local markets, one would expect county prevailing wages would, to some extent, mirror patterns in other construction wages. There is no evidence of this. Federal estimates of average weekly wages from the entire construction industry show construction earnings tend to be much higher in urban counties than in rural ones. Earnings differentials can be over 200%.

Yet prevailing wages often vary little from county to county, and when they do vary, the variations do not reflect county differences reflected in overall industry earnings data. For example, in 2014, prevailing wages for carpenters were identical in 57 of the state's 72 counties. Prevailing wages for roofers varied, but the pattern appears "random," with no tie to location.

A more specific example is instructive. Average wages for the entire construction industry averaged $1,119 in Waukesha County and $569 in Washburn County. Despite this large difference, the prevailing

wage for a roofer was higher in Washburn than in Waukesha ($30.50 vs. $29.40).

Ability to Pay. Since prevailing wages typically do not vary with local market rates, residents of Wisconsin's income-poor counties end up devoting a greater share of their incomes to public construction projects than residents of more prosperous counties. This analysis uses an hour-cost ratio that measures how many hours an average worker must work in order to pay for one hour of prevailing wage work.

For example, the prevailing wage and benefit rate (total package) for a carpenter was $46.38 in both Dane and Florence counties. While the average Dane County worker across all industries earned $23.68 per hour, the average Florence County worker earned only $11.45. Thus, it would take four average Florence County workers an hour's work to pay for a carpenter on a public project, but only two Dane County workers to pay that same carpenter. In general, prevailing wages were most burdensome in Bayfield, Burnett, Florence, Iron, and Marquette counties, all remote counties mostly in the north.

Anomalies. Wisconsin's unique prevailing wage methodology also created some unexpected results. For example, prevailing wages and benefits for a carpenter in Adams county fluctuated between $12 per hour and $49 per hour during 2011-15. In Lafayette county during 2013-15, the range was $17.95 to $45.47. Market wages do not show this kind of volatility.

Sometimes, Wisconsin methodology results in compensation rates that do not reflect skill levels. In 2014, the prevailing wage and benefit package for an electrician in Lafayette County was $21.00 per hour; for an unskilled clean-up worker, it was $37.97.

These anomalies further indicate that prevailing wages here often bear little resemblance to the local economies where public projects are occurring.

Excess Costs. Local data from a statistically-valid federal wage survey show that prevailing wages here are, on average, 23% higher than local averages. Adding estimated benefits to the federal figures enables calculation of the difference in total packages. Wisconsin's prevailing package rates are, on average, about 45% higher than market rates.

In 2014, state and local governments requested prevailing wage determinations for about $1.9 billion in building or heavy construction projects. Estimated labor costs on these projects range from 20% to 30% of the total. Those figures can be used to estimate that state and local governments could have saved between $199.7 million (9.0% of total costs) and $299.5 million (13.5%) on these projects if market averages, rather than prevailing wages, were used.

Background. About six months ago, long before the current legislative session, Associated Builders and Contractors (ABC) approached the Wisconsin Taxpayers Alliance (WISTAX), asking if it could study Wisconsin's approach to calculating prevailing wages and the resulting impact, if any, on local government finance.

ABC asked WISTAX to answer two questions:

1. Do the prevailing wages determined by the state Department of Workforce Development accurately reflect wages and benefits in Wisconsin counties? and

2. If they overestimate area wages, what is the additional cost to local governments and taxpayers?

Remember: This study does not address whether Wisconsin should or should not have a prevailing wage law, but only how it calculates those wages. □

1. Background

In early October 2014, Associated Builders and Contractors of Wisconsin, Inc. (ABC) approached the Wisconsin Taxpayers Alliance (WISTAX) regarding a possible study of Wisconsin's prevailing wage law and its impact on local government finance. Now in its eighth decade, WISTAX is a nonprofit, nonpartisan organization dedicated to public-policy research and citizen education.

In particular, the study was to answer two questions:

1. Do the prevailing wages determined by the state Department of Workforce Development (DWD) accurately reflect wages and benefits in the area? and

2. If they overestimate area wages, what is the additional cost to local governments and taxpayers?

WISTAX submitted a research proposal to ABC in late October. The study was approved several weeks later.

It is important to note that this study does not address whether Wisconsin should or should not have a prevailing wage law. Rather, Wisconsin's method of calculating prevailing wages is examined. To the degree that prevailing wages exceed local market wages, the additional costs to state and local governments and taxpayers is then estimated.

History

Although not familiar to much of the public, prevailing wage laws have a long history in both Wisconsin and the United States. These laws vary by state, but all require a minimum wage or wage and benefit package for workers employed on government construction projects.

The first prevailing wage law was approved in Kansas in 1891 as part of an effort by the American Federation of Labor to shorten the workday to eight hours. Similar laws were subsequently passed in New York (1894), Oklahoma (1909), Idaho (1911), Arizona (1912), New Jersey (1913), Massachusetts (1914) and Nebraska (1923).

Then, in 1927, an Alabama firm brought construction workers from that state to Long Island, New York to work on a hospital building project. Rather than pay the going rate on Long Island, the firm paid its workers a lower wage commensurate with what they would earn in Alabama. Worried that the importation of low-wage workers would become commonplace, New York businesses complained to Congress.

Soon thereafter (1931), Congress passed and President Hoover signed the Davis-Bacon Act, the prevailing wage law for federally-funded construction projects. The

Table 1: Prevailing Wage Laws by State
Year Approved, Repealed

With P.W.L.		*Without P.W.L.*		
State	**App'd**	**State**	**App'd**	**Rep.**
New York	1894	Florida	1933	1979
New Jersey	1913	Alabama	1941	1980
Mass.	1914	Utah	1933	1981
Nebraska	1923	Arizona	1912	1984
Alaska	1931	Colorado	1933	1985
California	1931	Idaho	1911	1985
Illinois	1931	N. Hamp.	1941	1985
Montana	1931	Kansas	1891	1987
Ohio	1931	Louisiana	1968	1988
Wisconsin	**1931**	Oklahoma	1909	1995
Maine	1933			
Texas	1933	Georgia	Never	
W. Virginia	1933	Iowa	Never	
Conn.	1935	Mississippi	Never	
Indiana	1935	N. Carolina	Never	
Rh. Island	1935	N. Dakota	Never	
Nevada	1937	S. Carolina	Never	
N. Mexico	1937	S. Dakota	Never	
Kentucky	1940	Virginia	Never	
Maryland	1945			
Washington	1945			
Tennessee	1953			
Arkansas	1955			
Hawaii	1955			
Missouri	1957			
Oregon	1959			
Penn.	1961			
Delaware	1962			
Michigan	1965			
Wyoming	1967			
Minnesota	1973			
Vermont	1998			

law was designed to prevent low-wage, out-of-market (typically, out-of-state) contractors from underbidding local contractors, which could drive down local wages or encourage local contractors to relocate.

Within four years after, 15 states (including Wisconsin) passed prevailing wage laws. Currently, 32 states have such laws (see Table 1 on page 1). Of the 18 remaining states, eight have never had one. The other 10 either repealed their laws or had them invalidated by courts. All except Oklahoma's (1995) were eliminated during 1979-88.

Wisconsin Law

Although often viewed as one law, Wisconsin actually has three prevailing wage laws: one covers projects funded by a local government (Wis. Stat. § 66.0903); a second covers state highway and bridge projects (Wis. Stat. § 103.50); and the third applies to all other state building projects (Wis. Stat. § 103.49). The laws underwent major revision in 1996. Detail on Wisconsin's law begins on page five.

Study Scope and Approach

Among the many public sector projects subject to Wisconsin's prevailing wage law are buildings, roads and highways, sewers, sidewalks, curbs, and gutters. This study is limited to public construction associated with buildings such as schools, fire and police stations, and municipal buildings. Residential and agricultural buildings funded with public money are not included.

The study first reviews other research on prevailing wages and then describes Wisconsin's law in some detail. The empirical portion of the study follows and is composed of three major parts. First, we evaluate Wisconsin's method of determining prevailing wages. We find two "flaws" which tend to inflate required compensation.

Second, we compare prevailing wages by counties to local labor markets and the public's "ability to pay." We find that Wisconsin's prevailing wages are generally above market rates. Further, local governments and taxpayers are affected more in rural and low-income counties. Third, we estimate the annual "cost" to local governments, and ultimately taxpayers, of prevailing wages when they are above market rates.

Data

Most of the data used for this study are from DWD's Labor Standards Bureau. The bureau was not able to provide data files electronically; however, we were able to copy needed data from their website and format them in a way that could be analyzed.

Currently, 32 states have a prevailing wage law. Of the remaining 18, eight never had one. The other 10 either repealed their law or had it invalidated by a court.

We use two sets of information from DWD. The first is raw data from the 2013 survey of construction contractors. These are hourly wage and benefit figures for contractors working on building construction projects in the *private sector*. This information was used to calculate prevailing wages for 2014.

The second set of data contains the 2014 prevailing wages calculated by DWD. These are minimum wage and benefit combinations that must be paid to workers on *public* construction projects.

We also use separate information on employment, wages, and incomes from the federal Bureau of Labor Statistics.

2. Previous Research

Research on prevailing wage laws is extensive. Many of the early studies focused on the federal Davis-Bacon Act; more recently, the attention has shifted to examining state prevailing wage laws. Findings from these studies vary, from the laws increasing public construction costs to them having little impact. Some research has also examined ancillary effects of prevailing wages.

Federal Davis-Bacon Act

Early research on prevailing wage laws examined the impact of the Davis-Bacon Act on federal government costs. Conducted mostly in the 1970s and 1980s, these studies generally found that the Act increased government's labor costs, with estimates ranging from 4% to nearly 40%.

In a 2000 report to the House and Senate Committees on the Budget, the Congressional Budget Office estimated that federal construction outlays during 2001-10 would be $10.5 billion lower without the Davis-Bacon Act. One of the most recent (2008) studies of that Act found federal prevailing wages were, on average, 22% above wage estimates from another federal survey. The authors suggested that the differential could raise construction costs by almost 10%.

State Laws

Findings from state studies fall into three groups. Prevailing wage laws: (1) raise costs; (2) have little or no cost impacts; or (3) have other impacts (e.g. injury rates).

Raises Costs? Over the past 20 years, state law changes have created "natural experiments," allowing researchers to analyze the impacts of local prevailing wage laws. The first was a temporary lapse in Michigan's law during 1994-97 that enabled study of public sector construction costs, both with and without prevailing wage requirements. Researchers estimated that the state saved about $275 million in 1995 because the prevailing wage law was not in force.

A second "natural experiment" occurred in Ohio in 1997 when the state exempted school construction from its prevailing wage law. Five years later, the Ohio Legislative Service studied the impact, finding that Ohio schools had saved $488 million (10.7%) on construction spending.

In 2001, California expanded its prevailing wage law to cover construction of state-subsidized housing. A study of 205 low-income housing projects concluded that the California prevailing wage law raised construction costs at least 9%, and as much as 37%.

While some researchers find prevailing wage laws increase construction costs between 4% and 40%, others find the laws have little or no impact on the cost of public construction.

Other research on state prevailing wage laws also shows higher costs associated with the laws. A 2001 study in Pennsylvania found a 17% wage differential between public and private construction contracts and attributed the difference to the state prevailing wage law. The authors estimated this difference, combined with higher benefit costs, would lead to school construction costs that were 2.25% higher due to the prevailing wage. A 2007 study of Michigan's law found that prevailing wages there were, on average, 39% higher than median wages reported in federal surveys.

Little or No Impact? Not all research finds higher costs due to prevailing wage laws. A 1996 study examined public and private construction projects in states with and without prevailing wage laws. It found public projects in all states were, on average, significantly more expensive than similar private projects. However, the difference could not be attributed to prevailing wage laws.

A 1998 study of school construction in Great Plains states found no cost difference in states with or without prevailing wage laws. A 1999 study of school construction costs in three states with prevailing wage laws (Delaware, Pennsylvania, and West Virginia) and two states without such laws (North Carolina and Virginia) found a small, but statistically insignificant, increase in costs in the states with prevailing wages.

A 2002 study of school construction costs from across the country could not find prevailing wage effects. A 2003 study by the same authors examined school construction costs in all 50 states during 1991-99. After controlling for the business cycle, building size, school type, and other variables, the authors could find no cost effect of prevailing wage laws.

☐ *Other Impacts?* Impacts of prevailing wage laws other than direct costs have also been examined. A 2006 study reported higher productivity (about 15%) and higher rates of construction training programs in prevailing wage states. The author suggested the additional training and higher productivity helped explain why some studies found no cost differences.

Some researchers find that workplace injuries rise after repeal of the laws, while others show accident rates are higher in prevailing wage states compared to states that never had such laws.

This study is different from others in that the main focus is on how Wisconsin calculates its prevailing wages and the implications of that method. We begin by outlining state law in some detail and showing how prevailing wages are calculated here.

3. Wisconsin's Law and Method

State Law

Wisconsin's prevailing wage law for state-funded projects, including highways and bridges, was enacted in 1931. Two years later, the law for local construction projects was approved. These laws underwent significant change in 1996.

The laws do not apply to all publicly-funded projects. Projects must meet financial thresholds before the law applies. The prevailing wage law affects publicly-funded:

- ❑ multi-trade projects costing $234,000 or more in towns and in cities or villages with populations less than 2,500;
- ❑ multi-trade projects costing $100,000 or more in all other municipalities or for other local governments;
- ❑ single-trade projects—those in which one trade accounts for more than 85% of the cost—of $48,000 or more.

State highway and bridge projects have no threshold; i.e., the prevailing wage law applies to all these projects.

Wisconsin's thresholds are generally in line with those in most other states. Seven states have no thresholds, and two have very low thresholds for specific projects; i.e., nearly all publicly-funded projects are subject to the law. In another nine states, prevailing wage laws are triggered at costs of $25,000 or less. The highest thresholds are in Maryland ($500,000), Connecticut ($400,000), Indiana ($350,000), and Kentucky ($250,000).

In Wisconsin, prevailing wages (and total compensation) are set by occupation, by county, and by project type. State law defines five project types:

A. building and heavy construction;

B. sewer, water, or tunnel construction;

C. airport pavement or state highway construction;

D. local street or miscellaneous pavement construction; and

E. residential or agricultural construction.

Thus, a prevailing wage exists for a carpenter working on a building or heavy construction project in Dane County. A separate prevailing wage (which may or may not be the same) applies to a carpenter working on a publicly-funded residential or agricultural project in Dane County. DWD defines about 200 occupations commonly used on public sector construction projects.

Although referred to as the prevailing wage law, Wisconsin's law covers more than wages. It sets minimum hourly amounts that must be paid for wages and benefits combined, as well as a prevailing wage rate.

Wisconsin's prevailing wage law sets, for over 200 occupations, minimum compensation that must be paid to workers on publicly-funded construction projects.

DWD Method

Data Source. Each year, DWD surveys approximately 18,000 construction companies throughout the state, using a database of construction firms that report wages and employment for unemployment insurance (UI) purposes.

The survey asks for information on hours, wages, and benefits by occupation for each project worked on in the prior year. Respondents also report the project location, particularly the county, and whether the employee was covered under a collective bargaining agreement. The county is the civil division on which prevailing wages are calculated. Although information is requested for both public and private projects, data from the latter are primarily used to determine prevailing wages in Wisconsin.

Survey Response. State law requires employers to complete the survey but provides no penalty for noncompliance. As a result, only about 4,000 of the 18,000 surveys are returned, and approximately half of those returned are invalid.

Surveys are invalid when they are not fully completed or are filled out incorrectly. Over the past nine years, the number of valid, returned surveys has averaged about 10.5% of those mailed.

By comparison, the federal Bureau of Labor Statistics (BLS) uses the same group of firms to conduct its own wage survey twice annually using the same UI database. Nationally, the response rate for that survey is over 70%.

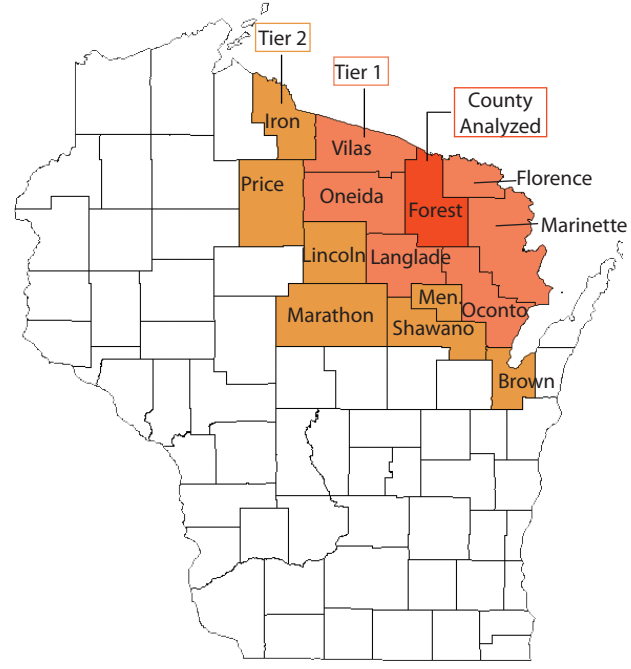
One characteristic of Wisconsin's prevailing wage survey responses is that union contractors are more likely to respond than their nonunion counterparts. In 2014, across all project types, about 80% of hours reported were covered under a collective bargaining agreement. For project type A (building and heavy construction), union hours were 87% of all hours reported. By contrast, in project type E (residential and agricultural construction), only 10% of hours were covered by a collective bargaining agreement.

These percentages both vary from state averages. In 2014, 25% of Wisconsin workers in the construction industry were union members; 26% were covered by union contracts.

The 500-Hour Rule. To calculate a county's prevailing wage for a particular occupation/project-type combination, at least 500 hours must be reported. If that threshold is not reached, information from surrounding counties ("Tier 1") is combined with data for the county being calculated.

The map below shows how a prevailing wage for Forest County might be calculated. If 500 hours for a particular occupation/project type (e.g., marble finisher in building and heavy construction) were not reported for Forest County, then information from Florence, Marinette, Oconto, Langlade, Oneida, and Vilas counties is combined with Forest County data.

Figure 1: Tier 1 and Tier 2 Counties
Forest County Prevailing Wage Calculation



More than 80% of reported survey hours are covered under a collective bargaining agreement, yet only 25% of Wisconsin construction workers are union members.

For some occupations, the 500-hour threshold is still not achieved using surrounding Tier 1 counties. Then, survey data from the next set of surrounding counties (Iron, Price, Lincoln, Marathon, Menominee, Shawano, and Brown) are added (Tier 2). If, as in some situations, the 500-hour threshold is still not achieved, statewide data are used for the calculation.

This "tiering" has implications for prevailing wages for some occupations. In the Forest County example, some prevailing wages might be calculated using information from Brown and Marathon counties—two counties with labor markets that differ from Forest's. For some more obscure occupations, statewide information, which would be dominated by large urban counties in southern Wisconsin, would be used. In such cases, the prevailing wage that results for small, rural counties is unlikely to reflect market wages there.

The Calculation. Once the 500-hour threshold is met, calculating a prevailing wages is a multiple-step process, repeated for each occupation/project-type combination in each county.

First, using survey information from private projects, a prevailing "total package" is calculated. The total package is the hourly amount paid for combined salaries and benefits. For contractors, this is the critical figure, as it is the total compensation they must provide employees working on public projects.

To calculate that amount, DWD first looks to see if a majority of total hours reported were at one total package amount (to the penny). If so, that amount becomes the prevailing package rate.

This approach is illustrated in example 1 of Figure 2. A total of 800 hours were reported for a particular occupation/project combination in a county. The same rate ($32.65) was reported for 442 of those hours. Since that rate comprises more than half of the 800 total hours, $32.65 becomes the prevailing total-package rate. Employers must pay workers this amount in some combination of wages and benefits.

If one total package rate does not account for a majority of the hours reported, then total package amounts are sorted from highest to lowest (see example 2 in graphic). Beginning at the top and moving down, hours are summed until they account for at least 51% of the total (i.e., when they exceed 408 if 800 total hours are reported). In this example, the 51% threshold is crossed at Project 11, and the total number of hours used is 432. A weighted average (based on hours) of these hours is then calculated and used for the prevailing package amount ($33.01 in this example).

Once the prevailing package amount is calculated, the wage portion is then determined. In both cases, the prevailing wage is the most commonly occurring (the statistical mode) wage from among packages used. In both examples below, the wage component is $24.20.

Figure 2: Examples of Prevailing Wage Calculation
Majority Rule and Average of Highest 51%

Example 1: Majority of Hours at Same Rate

Proj.	Wage	Total Pkg.	Hrs.
1	$27.95	$34.40	50
2	$28.95	$33.65	50
3	$24.20	$32.65	165
4	$24.20	$32.65	60
5	$24.20	$32.65	50
6	$24.20	$32.65	42
7	$24.20	$32.65	28
8	$24.20	$32.65	22
9	$24.20	$32.65	20
10	$24.20	$32.65	28
11	$24.20	$32.65	27
12	$21.25	$25.25	100
13	$19.75	$21.75	61
14	$16.85	$19.65	35
15	$17.25	$18.50	62
Prev. Wage	**$24.20**	**$32.65**	**442**

1. More than 50% of hours (442/800) at same total package rate ($32.65); that rate becomes prevailing total package rate.

2. Wage component is most common wage among data used (shaded).

Example 2: Use Highest 51% of Hours

Proj.	Wage	Total Pkg.	Hrs.
1	$27.95	$34.40	60
2	$28.95	$33.65	50
3	$24.20	$32.65	65
4	$24.20	$32.65	40
5	$24.20	$32.65	50
6	$24.20	$32.65	42
7	$24.20	$32.65	28
8	$24.20	$32.65	22
9	$24.20	$32.65	20
10	$24.20	$32.65	28
11	$24.20	$32.65	27
12	$21.25	$25.25	210
13	$19.75	$21.75	31
14	$16.85	$19.65	35
15	$17.25	$18.50	92
Prev. Wage	**$24.20**	**$33.01**	**432**

1. Use highest total package amounts until at least 51% of hours accounted for. Prevailing package ($33.01) is weighted average of hose amounts.

2. Wage component is most common wage among data used (shaded).

4. Evaluating Wisconsin's Method

States with prevailing wage laws calculate them in a variety of ways. Six states, including Michigan, use wages and benefits from collective bargaining agreements. Five states, including neighboring Minnesota, use the most commonly reported wage (mode) from a survey. Two states use the average of survey data.

Wisconsin and 14 other states use a combination of mode and average. Wisconsin and eight other states require the mode to comprise more than 50% of reported hours for it to become the prevailing wage. In other states, that percentage is as low as 30% of reported hours.

Where Wisconsin differs significantly from the other 14 states is in the data it uses to calculate the average. Typically, states average all survey data; Alaska excludes the top and bottom 5% of hours before making its calculation. Wisconsin is the only state that uses only the upper part of the wage distribution to calculate its average.

The combination of Wisconsin's low survey response rate, the difference between union and nonunion response rates, and the unique way it calculates an average can lead to prevailing wage rates that do not reflect local labor markets.

A Unique "Average"

It is common sense that averaging only the highest wages from a survey will produce a higher figure than averaging over all wages. The magnitude of the difference between the two will vary with the distribution of wages.

To explore the nature of this methodological "flaw," we collected the actual prevailing wage survey data for roofers and carpenters in 15 counties, including Wisconsin's 10 largest. Average wages were calculated in two ways: First, as an average of all the data; and second, using DWD's method.

If all or nearly all of the reported compensation are the same, there will be little or no difference between the two calculations. This can occur when union hours are 90% or more of total reported hours. For example, all hours reported were union hours for roofers in Kenosha County and for carpenters in Winnebago County, and there was no difference between the two averages (Table 2). Union hours were 94% or more of total hours for carpenters in Brown, Racine, Kenosha, Eau Claire, and La Crosse counties, and differences were minimal.

Wisconsin's practice of averaging only the top portion of the wage distribution returns prevailing wages that can be 20% or more higher than if a traditional average were used.

However, in those occupations where a variety of compensation amounts are

Table 2:
Measuring Wisconsin's "Calculation Bias"
Statistical Average vs. DWD Method, Roofer and Carpenter

	Roofer			*Carpenter*		
County	**Avg.**	**DWD Meth.**	**Diff.**	**Avg.**	**DWD Meth.**	**Diff.**
Milwaukee	$41.66	$44.95	7.9%	$49.42	$52.90	7.0%
Dane	29.77	35.62	19.7	43.69	46.44	6.3
Waukesha	40.01	44.96	12.4	49.73	53.11	6.8
Brown	21.42	25.25	17.9	45.44	46.40	2.1
Racine	40.87	44.99	10.1	51.96	52.86	1.7
Outagamie	21.32	25.82	21.1	44.76	46.41	3.7
Winnebago	21.10	25.74	22.0	45.85	45.85	0.0
Kenosha	44.95	44.95	0.0	51.82	52.79	1.9
Rock	29.97	38.49	28.4	41.60	46.40	11.5
Marathon	28.18	36.25	28.6	43.61	46.38	6.4
Columbia	21.24	24.20	13.9	41.99	46.78	11.4
Dodge	24.94	31.89	27.9	40.29	46.89	16.4
Eau Claire	29.26	33.67	15.1	46.17	46.46	0.6
La Crosse	28.14	30.99	10.1	44.87	46.39	3.4
Washington	31.33	43.11	37.6	45.91	52.75	14.9

reported, the difference between the two averages grows. In both Brown and Outagamie counties, all of the roofer data were nonunion and varied widely. In those cases, DWD's method returned "averages" 18% to 21% higher than a traditional average. In Washington County, union hours were less than half of the total and the difference between the two methods approached 40%. Clearly, DWD's unique averaging method raises prevailing wage rates above a traditional average.

Survey Response

Wisconsin's use of raw survey data also has an effect. As previously mentioned, only about 10% of prevailing wage surveys are completed correctly and returned, with union contractors more likely to return them. To understand the implications for prevailing wages, a brief discussion of survey methods is useful.

Survey Techniques. Surveys are undertaken daily to generate information on everything from political preferences to personal habits to earnings and income. Typically, only a portion of the population—a sample—is surveyed. For example, the Marquette University Law School Poll surveys between 800 and 1,500 people to gauge candidate preferences among voters statewide.

If valid sampling methods are used, information from the sample can be extrapolated to the entire population. However, even carefully crafted surveys have a margin of error that typically ranges from 3% to 5%. In other words, if a survey was conducted repeatedly, the results would reflect the true population 95% to 97% of the time.

However, for that to be true, characteristics of the sample need to reflect the entire population. For example, Marquette researchers would not take a sample that was 25% female and 75% male, or 60% Republican and 40% Democrat, and claim that responses reflected the views of the entire population. Rather, gender mix (and party affiliation) should be closer to the actual percentages for registered voters; e.g., 53% female and 47% male.

Many professional pollsters, including those at Marquette, weight their sample to reflect the true underlying population. In Marquette's final poll before the November 2014 elections, women comprised 51% of the sample, a little less than the percentage for all registered voters. Thus, their answers were given a little more weight so that the survey results reflected the 53%/47% mix of the overall population.

"Biased" Results. If researchers are not careful, the results of their survey may not reflect the underlying population. Two types of errors can be encountered: "response bias" and "nonresponse bias."

Response bias occurs when respondents' answers do not reflect their true beliefs.

Unlike BLS., Wisconsin does not correct for possible error in its prevailing wage survey, thus limiting its usefulness for estimating construction wages.

This would only affect the prevailing wage survey if contractors were misreporting hours or compensation. Nonresponse bias occurs when the characteristics of those not responding are significantly different from those responding. This is typically a problem in mail surveys (like Wisconsin's prevailing wage survey). Both of these render survey results unreliable for understanding the views or characteristics of the entire population.

Prevailing Wage Survey. From this discussion, it should be evident that data collected from Wisconsin's prevailing wage survey are likely not to represent the actual construction labor market. The union/nonunion mix in the industry is approximately 25%/75%. In the building/heavy construction sector, union representation may be slightly higher, but not the 85% reflected in DWD survey responses.

Thus, we have one group (nonunion contractors) that is less likely to respond to the survey. And, wages and benefits (characteristics) for this group are different from the responding group (union contractors). Thus, there is likely some nonresponse bias in the DWD survey. Wisconsin does

not weight responses to try to reflect the entire population, nor does it correct for any nonresponse bias.

Wisconsin's methodology can be compared to a federal survey (OES Wage Survey, see page 16) that is used to estimate state and local wages by occupation. Federal researchers weight each survey sample to reflect the underlying distribution of firms. They also recognize the possibility of nonresponse bias and take steps to correct it.

Adjusting Data? We do not have enough information to correct the shortcomings of Wisconsin's prevailing wage survey. However, the survey data can be weighted to estimate the magnitude of error in prevailing wages the DWD survey produces.

For the 10 largest counties, we calculate an average compensation package separately for reported union and non-union hours, using responses from the DWD survey. Those amounts are then weighted using the construction industry unionization rate (25% union, 75% non-union). Recognizing that unionization rates might be higher for some occupations and in some counties, we also apply 50%/50% weights to the data. These provide estimates of what average compensation might look like if all contractors had responded to the survey.

Calculations could not be made for roofers in Brown (no union data) or Kenosha (no non-union data) counties. Results are reported in Table 3.

Table 3:
Unrepresentative Response Rates Raise Prevailing Wages
Weighted Responses Compared to Average of Raw Data

	Roofer					Carpenter				
County	All	25/75 Rewgt.	Diff.	50/50 Rewgt.	Diff.	All	25/75 Rewgt.	Diff.	50/50 Rewgt.	Diff.
Milwaukee	$41.66	$27.87	49.5%	$33.57	24.1%	$49.42	$32.08	54.0%	$39.02	26.7%
Dane	29.77	28.88	3.1	34.24	-13.1	43.69	34.50	26.6	38.48	13.6
Waukesha	40.01	25.32	58.0	31.87	25.6	49.73	32.62	52.5	39.31	26.5
Brown	21.42	na	na	na	na	45.44	32.50	39.8	37.14	22.4
Racine	40.87	27.60	48.1	33.40	22.4	51.96	27.51	88.9	35.96	44.5
Outagamie	21.32	24.12	-11.6	27.01	-21.1	44.76	34.81	28.6	38.68	15.7
Winnebago	21.10	22.66	-6.9	25.57	-17.5	45.85	30.35	51.1	35.69	28.5
Kenosha	44.95	na	na	na	na	51.82	29.48	75.8	37.25	39.1
Rock	29.97	30.45	-1.6	38.52	-22.2	41.60	31.64	31.5	36.57	13.8
Marathon	28.18	26.88	4.8	32.13	-12.3	43.61	30.18	44.5	35.58	22.6

In general, weighting DWD data to better reflect the market produces results that differ significantly from an unweighted average.

In general, weighting DWD data to better reflect the market produces results that differ significantly from an unweighted average. For example, in Milwaukee County, unaltered survey data for roofers returns an average wage of $41.66. However, if the data were weighted to reflect a 25% unionization rate, the average would fall to $27.87, a nearly 50% difference.

In some cases (e.g. roofers in Outagamie or Winnebago counties), the re-weighting returns a higher wage.

The carpenter data is dominated by union hours. There, the average of unweighted data can be as much as 75% higher (Kenosha) than weighted data. Even if we assume a 50% unionization rate, unweighted averages return compensation rates 13% to 45% higher than a weighted average. Thus, not correcting for response rates also tends to overstate construction wages relative to the market.

5. Reflecting the Market?

The previous section highlighted flaws in Wisconsin's approach to calculating prevailing wages, both in terms of method and survey response. Beyond these issues, the question remains whether the prevailing wage reflects local labor markets—and what, if any, implications there are for local governments and taxpayers.

Prevailing Wages and the Market

Wisconsin's economy is comprised of a number of regional economies. Wages and incomes in northern Wisconsin tend to be lower than those in the southeast. If prevailing wages reflected these regional markets, one would expect them to vary by region.

Federal data from the Bureau of Labor Statistics (BLS) can be used to explore whether prevailing wage determinations vary with BLS averages across markets. This analysis is made easy because BLS collects county wage information by industry from the *same UI* database used for Wisconsin's prevailing wage survey.

To make the DWD-BLS comparison as fair as possible, it is important to recognize differences in construction seasons nationwide compared to Wisconsin. Wisconsin's season tends to be shorter due to weather. So, to ensure comparability, BLS data are only used for the second and third quarters (April through September when construction is in full swing) to construct an average weekly wage by county. Then, since DWD's 2014 prevailing wage determinations are made using 2013 survey data, these can be compared to average wages calculated from 2013 BLS data.

The three charts to the right (Figure 3) show first the county-by-county distribution of average BLS constructions wages (A), followed by DWD prevailing wages (B) for the same counties. According to BLS, average weekly construction wages ranged from $1,641 in Douglas County to $498 in Forest. Generally, wages were higher in the state's urban counties and lower in rural ones. Milwaukee, Waukesha, Dane, and Winnebago all ranked among the top 10 counties in average weekly wage. The 20 counties with the lowest average wages all had populations less than 42,000. Average weekly wage data are sorted from high to low as shown in Figure 3A (red bars).

Average county wages per BLS can then be compared with DWD prevailing wages and packages. The next two graphs (B and C) show DWD's calculated prevailing wage (B) and prevailing total package (C), respectively, for a carpenter. Counties are placed in the same order as they were in the average weekly wage chart (A).

Figure 3: Avg. and Prevailing Wages
Avg. Weekly Construction Earnings per BLS vs. DWD Prevailing Hourly Wage and Total Package, Carpenter, by County

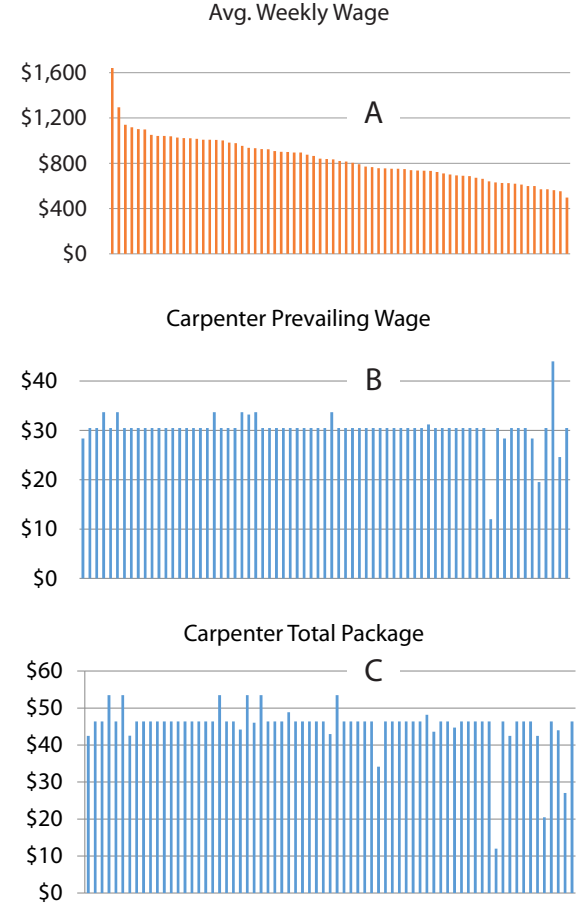
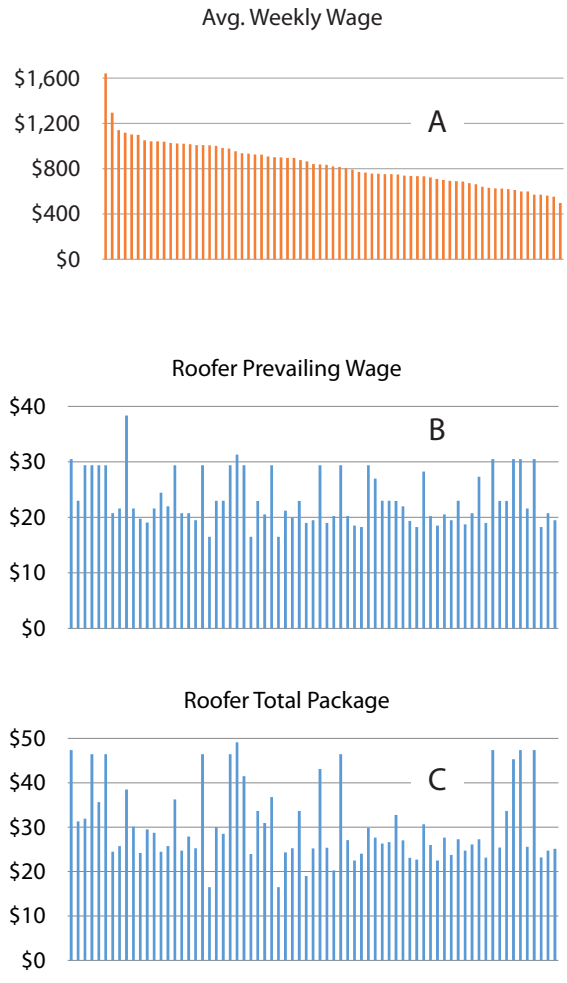


Figure 4: Avg. and Prevailing Wages
Avg. Weekly Construction Earnings per BLS vs. DWD Prevailing Hourly Wage and Total Package, Roofer, by County



The uniformity of DWD's prevailing amounts both for wages and total packages is clear. In 57 of 72 counties, the prevailing wage is $30.48—union scale in each of those counties. In another six (all in the Milwaukee area), the prevailing wage matches the $33.68 union scale there. A similar pattern holds when benefits are included to produce the total package amount. In other words, for carpenters, prevailing wages and packages vary little by county, even though BLS average construction wages do.

That is not to say that there was no county-by-county variation in some occupations. Figure 4 shows prevailing wages (B) and total packages (C) for roofers vary by county. Prevailing wages range from $16.50 in Chippewa County to $38.35 in Rock. Adding benefits to wages yields a total package ranging from $16.50 (Chippewa) to $49.10 (St. Croix). However, variation in wages and total packages bears no resemblance to the BLS construction wage pattern.

Figures from Waukesha and Washburn counties are instructive. According to BLS, overall weekly construction wages averaged $1,119 in urban Waukesha County, almost double that in rural Washburn ($569). Given the difference in population and location between the two, this is predictable. However, the prevailing wage for a roofer was higher in Washburn ($30.50 vs. $29.40), as was the prevailing total package ($47.37 vs. $46.45).

Similar chart-based comparisons for other occupations are provided in Appendices A and B.

Ability to Pay

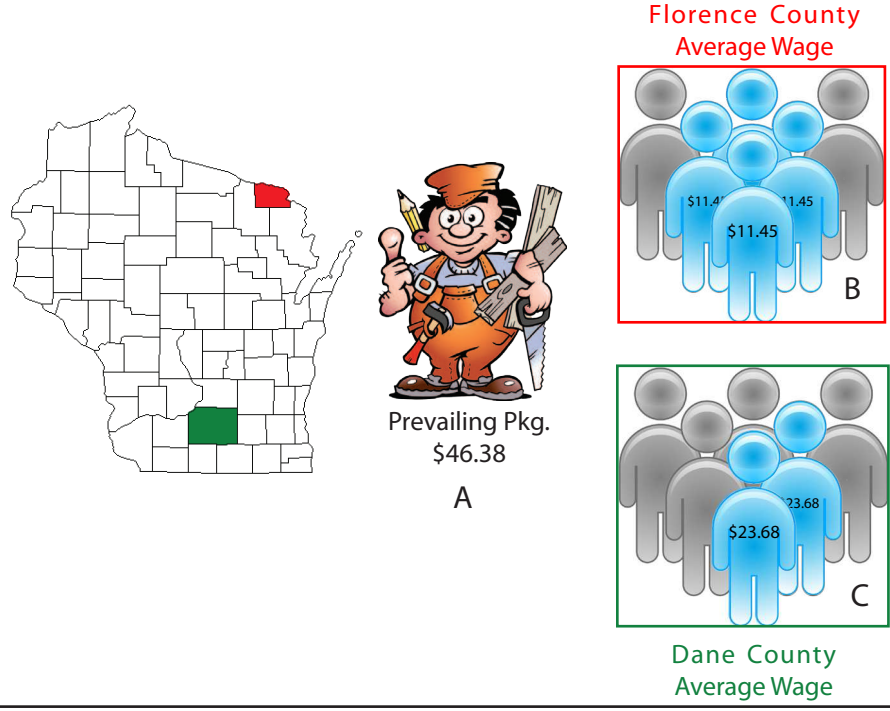
That DWD's prevailing wages do not, at least to some degree, mirror local labor markets has two implications. First, in some counties, local governments may be paying more for new buildings than if prevailing wages accurately reflected the local market. That issue is addressed in the next section.

Second, the difference between DWD prevailing and BLS average wages is often higher in counties where wages, salaries, and incomes are lower. Since public projects are generally funded by local property taxes, which are paid out of local income, this means that the costs of public projects claim a larger share of income in low-income counties than in others. To reiterate, counties with the least ability to fund construction projects would be devoting a larger share of their resources to public projects than wealthy counties are.

To confirm that a flawed prevailing wage calculation results in disadvantaging "poor" counties, a measure of county "ability-to-pay" is developed using BLS estimates of average weekly wages, by county, for all workers. For ease of comparison with prevailing wages, weekly wages are converted to hourly ones. This is what the average

Figure 5: Measuring the Cost of Prevailing Wages in Dane and Florence Counties

Prevailing Total Package for Carpenters vs. Overall Average Wages, Dane and Florence Counties



Public sector building projects are typically funded through taxes; for local governments, property taxes. These taxes are paid by residents with their incomes. One way to measure "cost" of prevailing wages is by comparing them to average wages in a county.

In 2014, the prevailing package (wages and benefits) for a carpenter was $46.38 in both Florence and Dane counties (A). However, the average wage for all workers was $11.45 in Florence (B) but $23.68 in Dane County (C).

Thus, one hour of carpentry work on a public project in Dane County would cost one hour of wages from two workers earning average wages. In Florence County, that one hour of carpentry work costs an hour of wages from four workers. The carpenter working on a public project in Florence County costs the average worker/taxpayer more than that same carpenter working in Dane County.

worker, across all industries and occupations, earns in each county.

As might be expected, the three most populous counties (Milwaukee, Waukesha, and Dane) had the highest average wages, all above $23 per hour. In five rural counties (Florence, Bayfield, Iron, Vilas, and Burnett), the average worker earned less than $14 per hour.

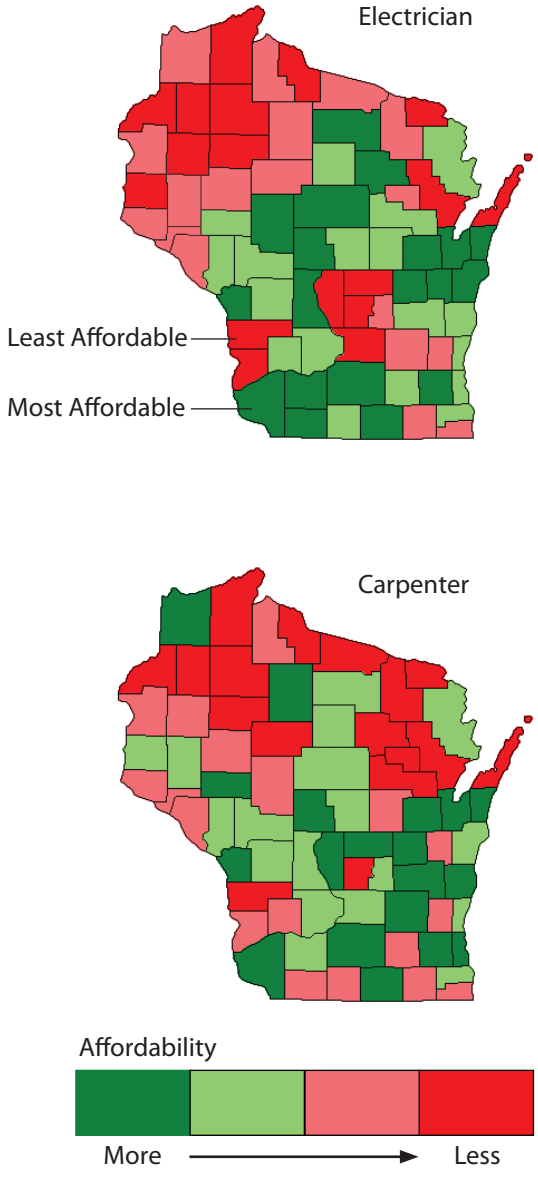
For each of the 10 occupations studied, DWD's prevailing total package was divided by BLS's average wage. The resulting ratio measures the number of hours that need to be worked by a typical worker in a specific county to pay one hour of prevailing wages and benefits.

For example, in 2014, the prevailing total package for a carpenter was $46.38 in both Dane and Florence counties. However, the average wage for all workers was $23.68 in Dane and $11.45 in Florence. Thus, in Dane County, the hour-cost ratio was 1.96 ($46.38/$23.68) compared to 4.05 ($46.38/$11.45) in Florence.

In Dane County, one hour of carpentry work on a public project would cost an hour's wages of two typical workers. In Florence County, it would cost an hour's wages of four average workers. In other words, the cost of paying the prevailing wage is much more affordable in relatively prosperous Dane County (two hours) than in less prosperous Florence County (four, see Figure 5).

The Dane/Florence County example is not unique. The prevailing package for a general laborer was $38.84 in Vilas County

Figure 6: Ability to Pay Varies, I
Ratio of Prevailing Tot. Pkg. to Overall Avg. Wage, Electrician and Carpenter, by County



and $38.09 in Brown. Yet, average hourly earnings for all workers was 57% higher in Brown County. Thus, the cost-hours ratio for a general laborer was nearly three in relatively poor Vilas County, but only 1.8 in Brown County.

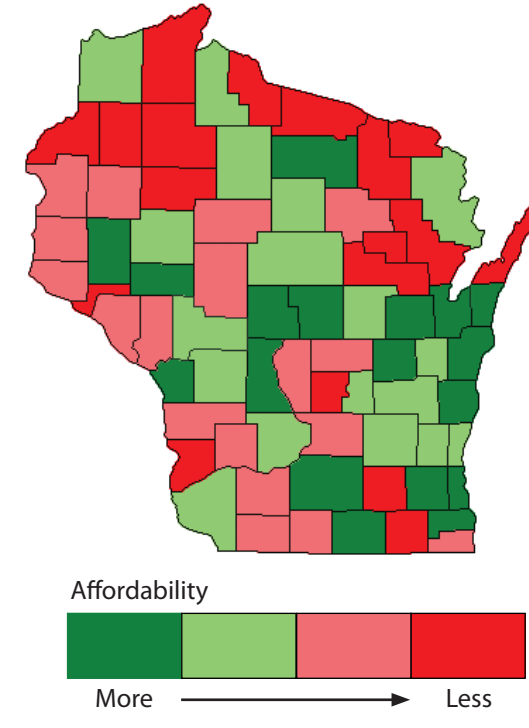
In general, paying DWD's prevailing wages costs more in northern counties than in southern, urban counties. Wages and incomes are usually lower in the north than in the south, but prevailing wages are often similar.

The two maps at left show, for two occupations, how this "ability to pay" varies by county. For electricians, the cost-hour ratio is generally highest (and ability to pay lowest) in northern and central Wisconsin (top map). For carpenters (bottom map), northern counties are most likely to have a lower ability to pay for carpenters working on public projects. Maps for remaining eight occupations studied are in Appendix C.

Relative hour-costs for public projects for 10 occupations and 72 counties is a lot to digest. To simplify, ratios across the 10 occupations are averaged for each county. Average hour-cost ratios ranged from less than 2.0 in Kewaunee and Wood counties to more than 3.0 in five counties: Bayfield, Burnett, Florence, Iron, and Marquette (see Figure 7).

If these 10 occupations reflect the overall labor cost of public construction, then a similar public building project would require greater financial effort—more hours worked—by residents of Iron, Florence, Forest, or Vilas counties than residents of Brown, Dane, Milwaukee, or Racine counties. In general, prevailing wages are less affordable in low-income rural counties than in wealthier urban ones. The median population of counties with the least "ability to pay" (red counties) was 15,705, but 116,051 for counties with the greatest ability to pay (dark green).

Figure 7: Ability to Pay Varies, II
Ratio of Prevailing Tot. Pkg. to Overall Avg. Wage, 10 Occupation Summary, by County



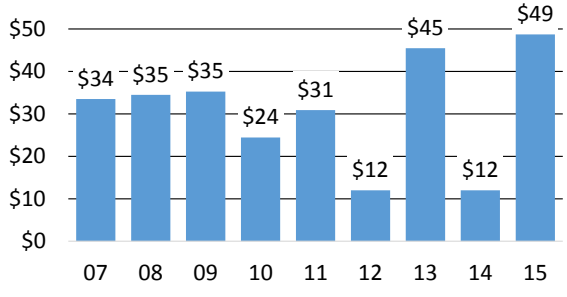
Anomalies

Wisconsin's unique method of calculating prevailing wages creates wage requirements that do not reflect county labor markets, and makes prevailing wages much more "expensive" in some counties than in others. However, even if DWD's approach to calculating prevailing wages was sound, the methodology creates some "wage anomalies" that make little economic sense.

Inconsistent Wages. Wage rates and compensation packages change over time. Averages at the county or state level tend to change slowly and consistently. For example, Wisconsin's overall average wage increased every year between 2007 and 2013, rising an average of 2.4% per year from $43,930 to $50,506.

However, there can be unexpectedly wide swings in prevailing wages. For example, the prevailing total package for a carpenter in Adams County rose consistently from $33.50 per hour in 2007 to $35.25 per hour in 2009 (see Figure 8). After that, it swung wildly.

Figure 8:
Carpenter Pkg. Inexplicable Over Time
Adams County, 2007-15



In 2010, the hourly required rate dropped nearly $11 to $24.44 per hour. After rising to just under $31 per hour in 2011, it dropped to $12 per hour in 2012. In the following year it rose to just over $45, before again falling to $12 per hour in 2014. From there, the required compensation package more than quadrupled to almost $49 per hour in 2015.

This situation is not unique. The carpenter total package rate in Lafayette County fluctuated from $45.47 in 2013 to $17.95 in 2014 to $28.41 in 2015.

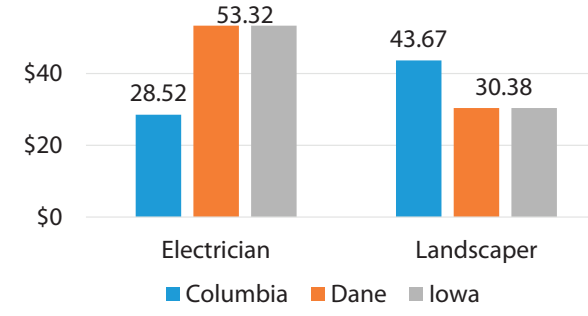
Skilled vs. Unskilled. In general, compensation for skilled labor is—and should be—higher than for unskilled labor. Contractors generally pay carpenters and electricians more than general laborers. However, Wisconsin's prevailing wage calculation can generate wage-benefit packages that do not reflect skill levels.

For example, in 2014, the prevailing package rate for an electrician in Lafayette County was $21.00, but it was 80% more ($37.97) for a general laborer. In 2015 in Ashland County, the prevailing package for a plumber was $26.02, but $37.97 for a construction clean-up worker.

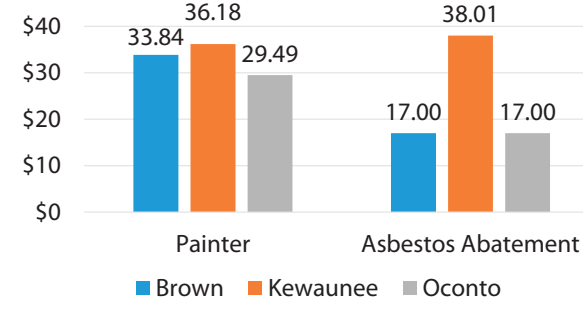
It is important to remember that the prevailing wage may not equal the wage actually paid. In a competitive market, contractors can pay their skilled labor more than the prevailing wage. However, this would further confirm that Wisconsin's prevailing wages often do not reflect local labor markets.

Figure 9:
Prevailing Pkg. Can Differ Widely Within a Labor Market

Madison MSA, Electricians and Landscapers



Green Bay MSA, Painters and Asbestos Workers



Regionality. In Wisconsin, labor markets often do not follow county lines. The federal government identifies eight regional labor markets in Wisconsin that contain multiple counties. For example, Calumet and Outagamie counties are considered a

single labor market, as are Columbia, Dane, and Iowa counties and Brown, Kewaunee, and Oconto counties.

However, in 2014, the prevailing package rate for an electrician was $28.52 in Iowa County, but nearly 90% higher ($53.32) in Dane and Columbia counties. A landscaper had to be paid at least $30.38 in Dane and Iowa counties, but $43.67 in Columbia County (see Figure 9 on page 15).

These anomalies are not limited to the Madison area. A painter had to be paid $29.49 for public projects in Oconto County, but $36.18 (23% more) for projects in Kewaunee County. Differences were even greater with asbestos abatement workers: $38.01 in Kewaunee County, but only $17.00 in Brown or Oconto counties.

These anomalies provide further evidence that prevailing wages here often exhibit little resemblance to underlying markets.

6. Cost to Local Governments and Taxpayers

In the prior section, county prevailing wages were compared first to average wages in the entire construction industry (regardless of occupation), and then to average wages for all workers in a county, (regardless of industry). The evidence suggested that prevailing wages in Wisconsin counties bear little resemblance to underlying labor markets and they are more "costly" to residents in low-income counties.

To the degree that prevailing wages exceed market rates, it can be argued that state and local governments—and ultimately taxpayers—are "overpaying" for public building projects. Two questions remain. First, if the DWD prevailing wage approach is flawed, how should one measure the actual market rate for various construction occupations? And, if local governments are overpaying, what is the magnitude of overpayment for public construction?

Estimating Local Construction Wages

To answer these questions, we turn again to one of the best sources of wage information by occupation, BLS. Their Occupational Employment Statistics (OES) survey provides wage estimates for over 800 occupations by state and metropolitan statistical area or MSA (see Appendix D for survey details).

Prevailing vs. BLS Wages

To compare Wisconsin prevailing wages with federal figures from the BLS survey at the local level, several decisions need to be made to ensure quality analysis. First, with the large number and differing nature of occupational definitions in federal and state surveys, 10 construction occupations are selected where reasonable comparisons can be made. Second, since federal and state data often differ geographically, multi-county MSAs are studied separately from single-county ones (Fond du Lac, Racine, Rock, and Winnebago).

Prevailing wages from DWD are now be compared with BLS wages. Table 4 shows prevailing wage rates, along with two wage statistics from the BLS survey: the average and the 75th percentile—the wage at which 75% of workers in an occupation earn less. The table also shows the percentage difference between the prevailing wage and both BLS measures.

Table 4:
Prev. Wages Generally Higher Than BLS Wages
BLS 2013 vs. DWD Prevailing Wages

Occupation	DWD	BLS Survey		DWD vs. BLS	
	Prev.			+/-	
County	Wage	Avg.	75th	Avg.	+/- 75th
Carpenter					
Fond du Lac	$30.48	$21.06	$25.01	44.7%	21.9%
Racine	33.68	26.04	33.07	29.3	1.8
Rock	30.48	19.82	25.18	53.8	21.0
Winnebago	30.48	21.50	26.99	41.8	12.9
Cement Finisher					
Fond du Lac	30.85	25.62	31.86	20.4	-3.2
Racine	29.11	24.42	31.89	19.2	-8.7
Rock	31.58	25.75	33.07	22.6	-4.5
Winnebago	30.85	24.77	27.77	24.5	11.1
Electrician					
Fond du Lac	28.97	25.64	31.44	13.0	-7.9
Racine	33.34	30.26	34.24	10.2	-2.6
Rock	30.60	25.64	32.62	19.3	-6.2
Winnebago	28.40	20.16	27.89	40.9	1.8
Plumber					
Fond du Lac	32.59	30.59	39.92	6.5	-18.4
Racine	37.96	27.38	35.60	38.6	6.6
Rock	32.00	21.20	25.15	50.9	27.2
Winnebago	33.26	33.03	35.81	0.7	-7.1
General Laborer					
Fond du Lac	23.48	17.04	19.34	37.8	21.4
Racine	27.22	21.14	23.91	28.8	13.8
Rock	24.21	18.01	21.87	34.4	10.7
Winnebago	23.48	14.97	16.97	56.8	38.4

In most cases, Wisconsin's prevailing wage is significantly above the BLS average. Of the 20 occupation/county combinations shown in the table, 18 (90%) were at least 10% above the BLS average, and 14 (70%) were at least 20% higher. Prevailing wages for plumbers in Fond du Lac and Winnebago counties were roughly in line with BLS averages.

In many cases, the prevailing wage was even higher than BLS wages at the 75th percentile. For example, prevailing wages for carpenters in Fond du Lac and Rock counties were more than 20% above the 75th percentile for the occupation. Prevailing wages for general laborers were at least 10% above the 75th percentile in all four counties.

The patterns seen in Table 4 are similar for all 10 occupations studied. In these single-county MSAs, prevailing wages in 76% of the occupations studied were at least 10% above BLS averages; in 60% of occupations, they were more than 20% higher. On average, prevailing wages for these 10 occupations in the four counties were 28.0% higher than the BLS estimates.

BLS and prevailing wage estimates for multi-county MSAs were also examined. Again, the patterns continue. A total of 140 occupations (10 occupations in each of 14 counties) were examined. In 105 (75% of these combinations), the prevailing wage was at least 10% higher than the BLS average; in 76 (54%), the gap was at least 20%. The average difference between the two was 22%, not appreciably different than the 28% figure found in the single-county MSAs.

When data for all of the MSAs—single- and multi-county—are combined, the average difference between prevailing wages and OES estimates is just over 23%. In other words, Wisconsin's prevailing wages are, on average, significantly higher than market wages.

Prevailing Packages vs. BLS

BLS data do not provide information on benefits, which are needed for comparisons with DWD's prevailing total package amounts. Using information from the DWD prevailing wage survey, which contains wage *and* benefit data from both union and non-union contractors, one finds benefits in building and heavy construction average 30.5% of wages. Applying that 30.5% figure uniformly across all occupations studied generate estimates of OES-based total package rates.

These estimated total packages are then compared to Wisconsin's prevailing package rates. Table 5 replicates much of Table 4 but replaces wages with total package amounts. For the four single-county MSAs, Wisconsin's prevailing packages are higher than the BLS-based averages. For example, prevailing packages for carpenters and general laborers are more than 50% above BLS-based estimates in all four counties.

Table 5:
Prevailing Pkgs. Significantly Higher Than "BLS-Based Pkgs."
OES Wages With 30.5% Benefit Package and Wis. Prevailing Package Rate

County	Prev. Pkg.	OES Pkg.	% Diff.
Carpenter			
Fond du Lac	$46.38	$27.48	68.8%
Racine	53.49	33.98	57.4
Rock	46.38	25.87	79.3
Winnebago	46.38	28.06	65.3
Cement Finisher			
Fond du Lac	48.47	33.43	45.0
Racine	49.83	31.87	56.4
Rock	47.71	33.60	42.0
Winnebago	48.47	32.32	49.9
Electrician			
Fond du Lac	49.46	33.46	47.8
Racine	52.98	39.49	34.2
Rock	48.61	33.46	45.3
Winnebago	45.20	26.31	71.8
Plumber			
Fond du Lac	42.70	39.92	7.0
Racine	56.40	35.73	57.8
Rock	41.70	27.67	50.7
Winnebago	49.54	43.10	14.9
General Laborer			
Fond du Lac	38.09	22.24	71.3
Racine	44.08	27.59	59.8
Rock	38.84	23.50	65.3
Winnebago	38.09	19.54	95.0

When the information in Table 5 is expanded to all counties and occupations studied, a similar pattern emerges. In 124

of 177 occupation/county combinations examined, Wisconsin's prevailing package rate was at least 30% higher than the BLS-based package. In 74 (42%), the Wisconsin prevailing rate was more than 50% higher than the BLS-based one. On average, Wisconsin prevailing packages were 44% higher than BLS package rates.

Even assuming a higher benefit-wage rate does not change the conclusion, only the magnitude. If benefits were assumed to be 50% of BLS wages, rather than 30.5%, Wisconsin prevailing packages would remain, on average, 26% higher than BLS-based estimates.

Impact on Public Costs

Because Wisconsin's prevailing packages exceed average market rates determined with more reliable federal data, state and local governments often "overpay" for building projects. The question now becomes: What is the size of the overpayment?

Even though prevailing packages average 45% more than BLS-based estimates, a shift to BLS-based averages would not produce savings of that magnitude. That is because labor costs are only part of total building cost.

Census Bureau figures for Wisconsin show labor's share of costs across the entire construction industry was 27% in 2007. That is consistent with a 23%-28% range used by a 2007 Michigan study. A 2005 Minnesota study estimated them between 28% and 39%. We conservatively assume a range of 20% to 30% to estimate the savings that might occur if market rates, rather than prevailing wage rates, were used.

Estimated Savings. For example, if prevailing total packages (labor costs) were 45% higher than market rates and labor costs were 25% of total project costs, state and local governments could save 11.3% (45% x 25%) on projects by paying market rates. For a $5 million building, savings would approach $565,000.

The magnitude of the savings varies with labor's share of total costs. Table 6 shows project savings for three estimates of the labor cost's share of total project cost. If labor's share of total cost were 20% of the total, then savings would be about 9.0%, or $450,000. If the share were 30%, then savings would rise to 13.5%, or $675,000. In other words, for that $5 million building, taxpayer savings could range from $450,000 to $675,000.

Statewide Savings. How might hypothetical project savings translate into statewide savings? To estimate statewide savings, DWD data are again used. Any public project subject to the prevailing wage needs to obtain a final determination from DWD. This determination lists the project's estimated total cost and prevailing wage rates for each occupation.

Table 6:
Estimated Savings on $5 Million Bldg.
Shifting From Prev. Wages to BLS Wages,
% of Total Project Costs and $ Thousands

Labor % of Total Proj. Cost	Project Savings	
	Pct.	$ Thous.
20%	9.0%	$450.0
25%	11.3%	$562.5
30%	13.5%	$675.0

Table 7:
Estimated Public Savings Statewide
Shifting From Prev. Wages to BLS Wages,
% of Total Project Costs and $ Millions

Labor % of Total Proj. Cost	Project Savings	
	Pct.	$ Mill.
20%	9.0%	$199.7
25%	11.3%	$249.6
30%	13.5%	$299.5

In 2014, DWD issued about 1,500 determinations for public building and heavy construction projects totaling about $2.2 billion. Applying the $2.2 billion total to the percentages calculated for a hypothetical project yields estimated dollar savings to the public from paying market-based wages and benefits rather than methodologically-flawed prevailing wages. Estimate savings statewide could have totaled between $199.7 million and $299.5 million in 2014 (see Table 7 on page 19).

These figures should be used with some caution because they do not necessarily reflect annual savings. For some projects, local governments borrow and repay a loan over 20 years. Thus, annual savings are smaller than these amounts; i.e., savings are amortized over the term of the loan.

To illustrate annual savings, assumptions are made about how certain public projects are funded. In particular, it is assumed that projects costing $1 million or more are funded through borrowing (4% interest over 20 years), while others are funded from operating revenues or cash balances.

Almost $1.9 billion of the $2.2 billion in public projects have price tags of $1 million or more. If that amount were borrowed at 4% interest over 20 years, annual payments would total $139 million. However, if market wages and benefits were used, total borrowing would fall to between $1.6 billion and 1.7 billion, and annual payments would be between $120 million and $127 million. In other words, annual savings on large projects funded by long-term borrowing would range from $12.5 million to $18.8 million, depending on the labor share of costs.

For other projects funded out of operating revenues, savings would range from $29.4 million to $44.1 million, depending again on the labor share. Combined, total annual savings for large and small projects are likely to total between $41.9 million and $62.9 million.

On average, Wisconsin's prevailing wages and benefits are 45% higher than total compensation based on a federal BLS survey. In 2014, that could have cost state and local governments here as much as $299.5 million.

A final caveat: Some of these projects might also be subject to the Davis-Bacon Law if federal money were involved. If so, savings on those projects would likely be less than amounts estimated here.

7. Conclusions

Wisconsin's prevailing wage laws were passed in the 1930s to ensure that out-of-area contractors with low-wage workers were not able to underbid local contractors on public projects. However, Wisconsin's approach to calculating prevailing wages has flaws which inflate these compensation requirements above market averages.

With only 10% of contractors responding to DWD's mandated survey and 85% of reported hours covered under union contracts, the underlying data do not reflect Wisconsin's construction industry, which is 75% non-union. This response bias inflates both wages and benefits above true market averages. Federal wage surveys avoid this by ensuring respondent characteristics are similar to those of the entire population.

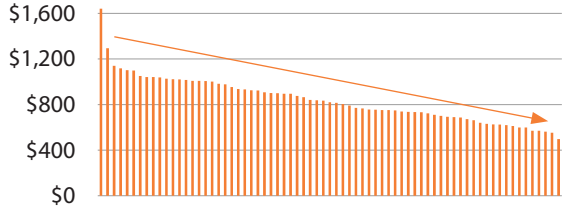
In addition, Wisconsin is unique in how it calculates average wages from the DWD survey, as it only averages the highest wages, rather than averaging all responses. This unique method can inflate prevailing wages by more than 20%. When wage averages are increased, large, out-of-county firms with higher labor costs are competitive with smaller, local firms paying market wages, and can "beat out" local firms for public construction projects.

Using estimates from a statistically sound and much larger federal survey shows Wisconsin's prevailing wages and benefits are, on average, about 45% above market averages. In 2014, this cost state and local governments—and taxpayers—between $199.7 million and $299.5 million on public building and heavy construction projects. □

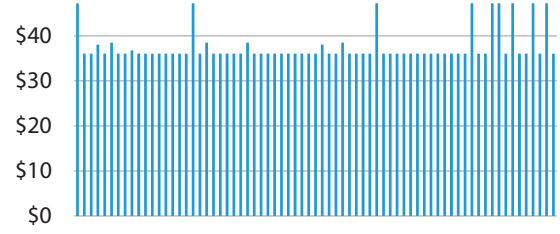
Appendix A. Prevailing Wages vs. Average Construction Wages, by County

The red chart below shows average weekly construction wages by county, sorted from highest to lowest. The blue charts show prevailing wages by county, sorted in the same order as average weekly wages. If prevailing wages reflect local labor markets, we would expect the pattern of prevailing wages to be similar to the weekly wage chart.

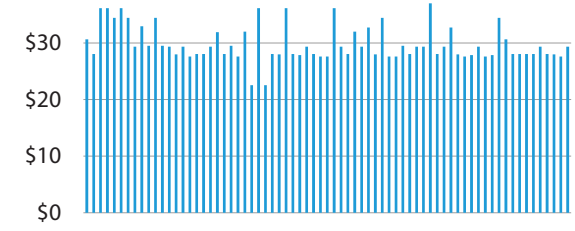
Average Weekly Wage



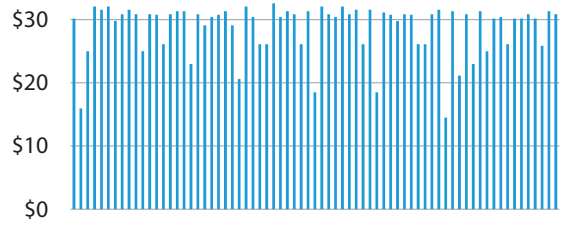
Fire Sprinkler Fitter



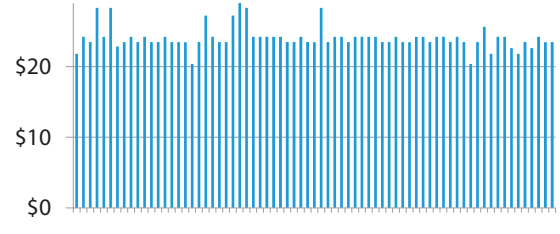
Sheet Metal Worker



Cement Finisher



General Laborer



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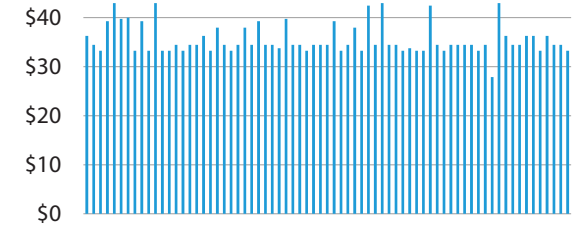
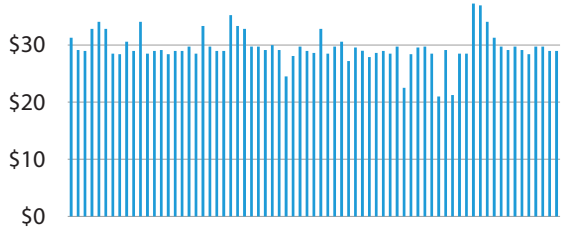


Electrician



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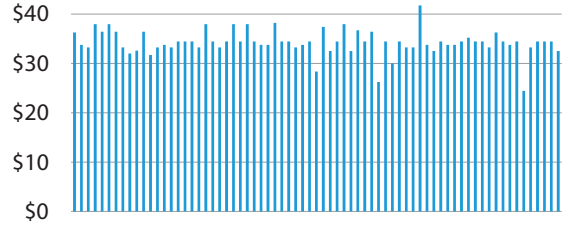
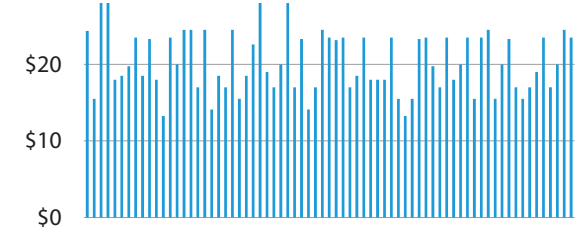


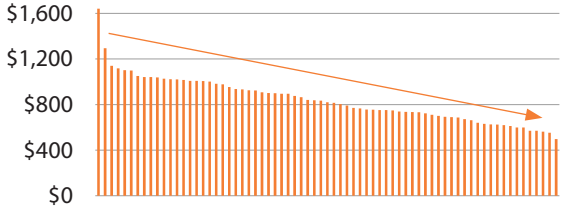
Truck Driver



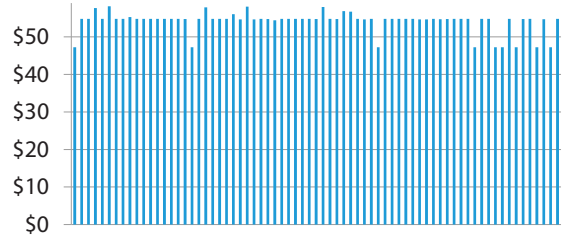
Appendix B. Prevailing Total Packages vs. Avg. Const. Wages, by County

The red chart below shows average weekly construction wage by county, sorted from highest to lowest. The blue charts show prevailing total package amounts by county, sorted in the same order as average weekly wage. If prevailing total packages reflect local labor markets, we would expect the patterns of the blue charts to be similar to the weekly wage chart.

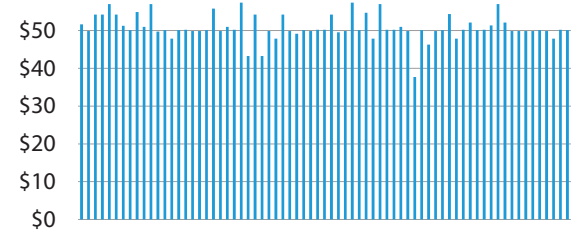
Average Weekly Wage



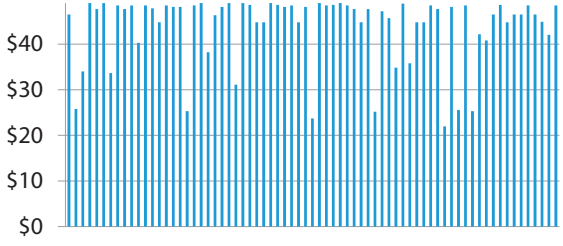
Fire Sprinkler Fitter



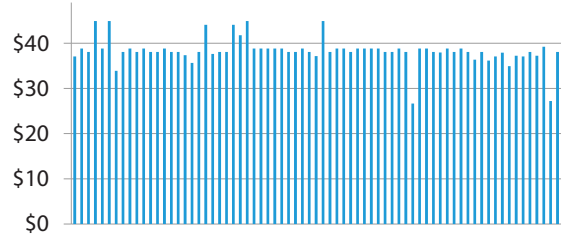
Sheet Metal Worker



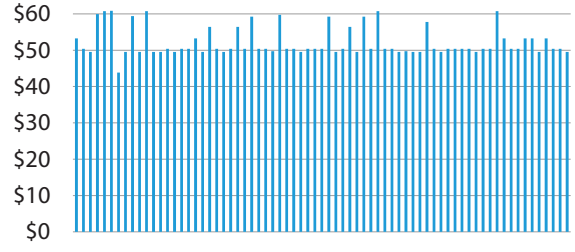
Cement Finisher



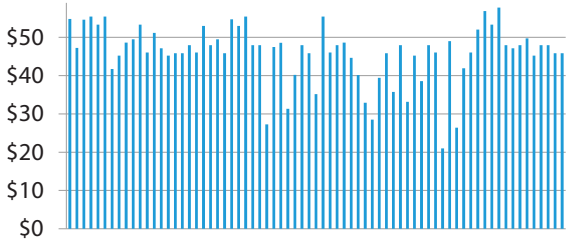
General Laborer



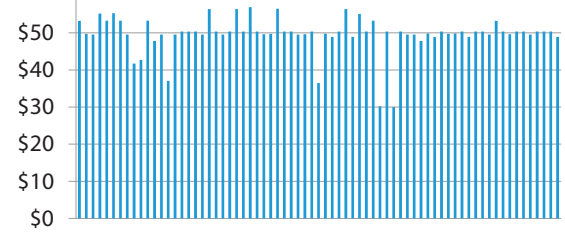
Steamfitter



Electrician



Plumber



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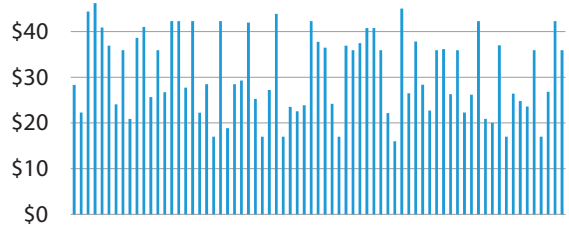
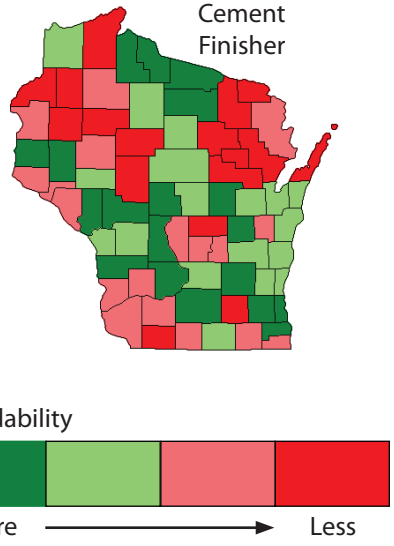
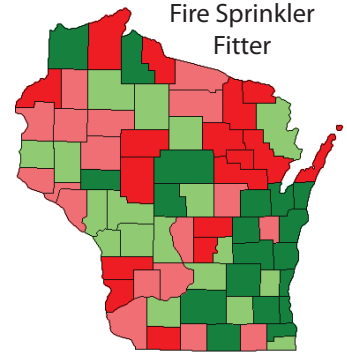
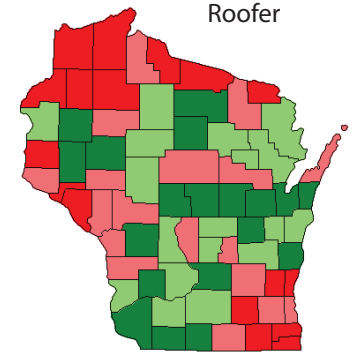


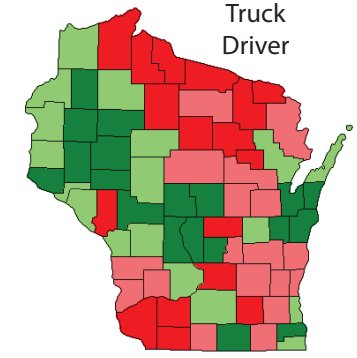
Appendix C. Ability to Pay Maps

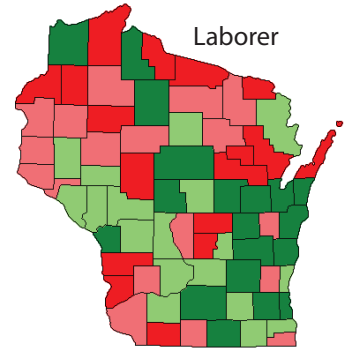
These maps show the "ability-to-pay" prevailing wages, by county, for various occupations. Ability to pay is measured as prevailing total package rate divided by the average hourly earnings of all workers in a county, "a cost-hours ratio." A ratio of two would mean that an hour of prevailing wages and benefits would claim one hour of work for two average workers in the county. Citizens in red counties have less ability to pay prevailing wages than those in green counties. See page 12 for more details.

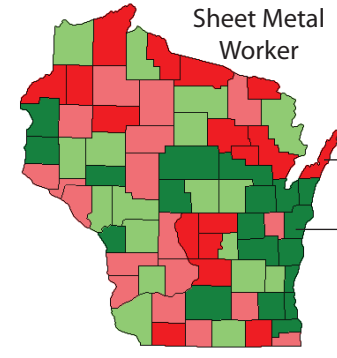


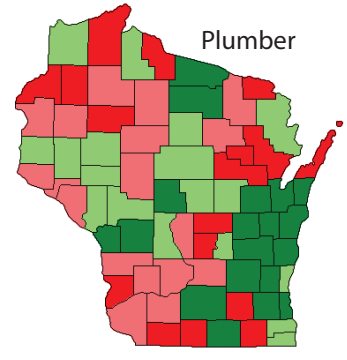


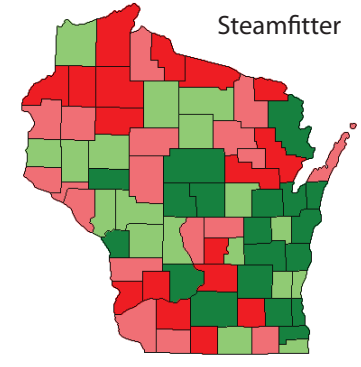












Appendix D. BLS's OES Survey

The OES wage survey is conducted twice annually by the U.S. Bureau of Labor Statistics (BLS) using a database constructed from unemployment insurance reports to the states—the same database used for Wisconsin's prevailing wage survey. BLS surveys a random sample of approximately 200,000 establishments nationwide.

Occupational wages are estimated using data from the six most recent surveys, which combined, cover about 76 million of the 133 million workers nationally (57%). For example, the May 2013 occupational estimates use information from surveys in May 2011, 2012, and 2013, and from November 2010, 2011, and 2012. Wage data from the older surveys are "inflation adjusted" to make them comparable to the most recent survey.

This BLS survey provides wage estimates for over 800 occupations by state and by metropolitan statistical area (MSA)—a group of economically interdependent counties. For each occupation, BLS reports estimates of the average and median (half lower, half higher) wage. It also reports estimates of the wage at various percentiles (10th, 25th, 75th, and 90th) of the wage distribution. The 75th percentile means that the person earning that wage is paid more than 75% of workers in that occupation. Occupational definitions come from the federal Standard Occupational Classification (SOC) system.

Survey data, even from a huge national sample, are never perfect. So, using these data for this study raises four issues. First, BLS data are reported at the metropolitan statistical are (MSA) level. An MSA is a group of economically interdependent counties. While four Wisconsin MSAs are comprised of a single county, five others consist of multiple counties. Thus, data exist for Fond du Lac and Racine counties individually, but we also have data for Outagamie and Calumet counties combined, and for Columbia, Dane, and Iowa counties combined. Prevailing wage data are all at the county level.

A second related issue is coverage. BLS data cover 18 counties in nine Wisconsin MSAs. Since BLS considers Kenosha, La Crosse, St. Croix, and Douglas counties to be part of MSA's in Illinois or Minnesota, their data are not used here.

In addition, BLS aggregates information from non-MSA counties. For example, information for labor markets in Grant, Walworth, and Florence counties are combined. For that reason, these data are also not used. That said, 18 counties are used in this study and they are home to two-thirds of Wisconsin construction employment.

A third issue with the BLS data is that the prevailing wage figures in this study apply to one part of the construction industry—building and heavy construction—while federal BLS data span the entire construction industry. Some argue that building and heavy construction often requires a different skill set than other types of construction. However, union contracts do not recognize that difference: A union carpenter working on a public building project is paid the same rate as one working on a residential building.

Finally, BLS data do not provide information on benefits, which are part of DWD's prevailing package rates. To compensate, we adjust BLS wage data to include benefits.

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