DELAWARE'S PREVAILING WAGE: CHANGE WE CAN BELIEVE IN

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Table of Contents

1 INTRODUCTION

This report does not challenge the concept of a "prevailing wage." Rather, the report examines the validity of the methodology currently used in Delaware to determine the prevailing wage rates.

Several federal laws were enacted during the Great Depression (1930s) aimed at protecting local wages from out-of-area competition. These laws were also justified as a way to protect taxpayers from "substandard labor on State and Federal projects,"[1] an assertion that has been disputed by the Congressional Budget Office (CBO).[2] The best known of the prevailing wage determination systems is the Davis-Bacon Act(s), implemented by the Federal Government through the U.S. Department of Labor. The Davis-Bacon Act has been cited by the CBO as a "Great Depression's leftover," which not only fails to fulfill its initial objective, but also results in misallocation of resources and unfair redistribution of income.[3] Over 30 states carry on prevailing wage determinations and many of them have received similar objections. The prevailing wage system implemented in Delaware is not an exception.

Several publications[4] have demonstrated the lack of accuracy and bias of the Prevailing Wage (PW) system to represent the truly "prevailing" wages in a specific region. The bias criticism mostly refers to excessive weight given to union wages in detriment of non-union wages. Because union wages typically exceed non-union, the PW is thought to overstate the actual wage rates found throughout a region's construction labor market. That is thought to be the case in Delaware.

The latest modification to the PW determination methodology in Delaware passed by the General Assembly in January 2008 exacerbates that bias. It now allows the utilization of "collective bargaining rate" (CBR) or union wage rates as prevailing wage for five years if that CBR has been the prevailing wage for two consecutive years. In other words, union wages will be locked in during five years as the prevailing wage in disregard of the activity level of the construction industry or the economy in general. No provision has been adopted if the prevailing wage for two consecutive years is not a CBR.

Are union rates over represented in determining Delaware's prevailing wage rates? Is there alternative Federal data that would more accurately represent construction-market wage rates in Delaware? Would this save the Delaware Department of Labor (DDoL) the expense of compiling and generating annual prevailing wage rates? This report examines and answers these questions, and suggests a more efficient determination of Delaware's prevailing wage rates.

[1] Benefits of the Davis-Bacon act, Congressional Record -- House Thursday, June 6, 1996 - 104th Congress 2nd Session 142 Cong Rec H 5996

[2] **Modifying the Davis-Bacon Act: Implications for the Labor Market and the Federal Budget - Congress of the United States Congressional Budget Office – July 1983.**

[3] **Ibid.**

[4] **"Prevailing Wage does not Have to be Union Wage" VIEWPOINT, Caesar Rodney Institute, March 2010**
"The economic impact of adopting prevailing wage laws on New Castle County Government" NCC, March 2002.

This report is divided into four major areas:

1 Analysis of the methodology used by the Delaware Department of Labor (DDoL) in establishing the annual prevailing wage.

2 Analysis of the Davis-Bacon and Related Act's prevailing wage determination methodology and the possibility of its use instead of the DDoL PW.

3 Analysis of the methodology used by the U.S. Department of Labor to calculate the annual Occupational Employment Statistics (OES) and the possibilities of using the OES instead of the DDoL PW.

4 Conclusions and recommendations for change or improvement

1.1 List of charts and tables

2 EXECUTIVE SUMMARY

Each year Delaware's Department of Labor (DDoL) uses two different methodologies to calculate construction wages by occupation for Delaware: The Prevailing Wage survey and the Occupational Employment Statistics survey (OES).

The prevailing wage survey, is paid for by state taxpayers, suffers from substantial sample design and survey response bias, a small sample size, and is fraught with methodological errors. The prevailing wage survey significantly overstates construction wages and is oblivious to changing market conditions.

The Occupational Employment Statistics survey is conducted by Delaware's Department of Labor under contract to the U.S. Bureau of Labor Statistics. The national survey is based on a probabilistic sample drawn from a universe of about 6.9 million in-scope establishments stratified geographically and by industry, and corrected for non-response bias. The sample size for Delaware's construction industry in 2009 was 502 unique firms and the results are segregated by county by Delaware's Department of Labor. The resulting wages for experienced workers by construction occupation for Delaware average at least 39% less than the wages produced by the prevailing wage survey. (Experienced workers fall in the upper two thirds of the wage distribution for any occupation.)

To solve the problems with the DDoL PW determination analyzed in the following report, **we favor the adoption of the OES estimates**. We believe that most of the limitations and difficulties raised against the adoption of the OES can readily be resolved. The DDoL currently vets the OES for Delaware and provides a distribution by county on an annual basis. Duplication of that work through a separate PW survey by the DDoL that produces significantly biased results is a waste of taxpayers' money.

The Caesar Rodney Institute recommends that the Delaware Department of Labor abandon its annual prevailing wage survey and use the results of the annual OES survey as representative of the construction wages prevailing in Delaware. This would significantly reduce sample design, response bias, methodological errors, save taxpayers from footing the bill for a redundant data exercise, reduce the costs of state construction projects by at least 14% and help lower the current 20% unemployment rate of Delaware's construction industry.

3 THE DELAWARE PREVAILING WAGE DETERMINATION

3.1 Analysis of the methodology

The first step in the annual process to calculate the PW in the State of Delaware is the preparation of the survey. The DDoL uses the Unemployment Insurance employers' file as their basis for the survey mailing. The file is enhanced with out-of-state contractors that have participated in construction projects within the State. In addition, labor unions and employers' organizations submit information that allows possible identification of additional contractors, not included in the previous lists. After the additional list enhancements, the DDoL prepares the final mailing of the PW survey forms.

In early January of each year, the DDoL mails the forms to the employers and organizations with an interest in the construction industry as indicated above. In early February, DDoL begins processing the information received thus far and tries to contact employers who had not yet returned their forms or,

whose forms are not strictly in compliance with the PW requirements. As PW rates have to be released in March, only those surveys received in early-to-mid February are considered. Any questionnaires received after the cut date, with the exception of those delayed due to clarifications requested by DDoL, will not be included in the calculations.

Collected information on wages paid by employers in Delaware are tabulated according to 1) 26 job classification as defined in "Classification of Workers Under Delaware's Prevailing Wage Law" [5], 2) three main divisions of the Construction industry ("Building", "Heavy", and "Highway"), and 3) by county.

The first part of the DDoL's calculations is the "clean-up" of the received questionnaires to align the provided information with the quality standards implicit and explicit in the methodology. This process involves follow-up contacts with employers in order to clarify observations raised by DDoL's staff. Once the information has been cleaned and tabulated, DDoL can begin the PW determination.

PW determination is calculated by occupation, industrial division (of the construction industry), and by geographical area (county.) Initially, PWs were calculated as a weighted average of wages by the number of employees perceiving those wages. In other words, by multiplying the number of employees by their wages plus fringe benefits and dividing that result by the number of employees. Later, the 50% rule was added: if more than 50% of the workers within an occupation/industry/county receive the same wage plus fringe benefits, that wage is the PW.

As mentioned previously, in January 2008, the Delaware PW methodology was significantly changed. The Delaware General Assembly passed an amendment to Title 29 of the Delaware Code Relating to Public Works Contracting[6]. Essentially, the amendment says that if during two consecutive years the collective bargaining rate (CBR, wage rate agreed between labor unions and employers) for a specific occupational class becomes the prevailing wage, it will become the prevailing wage for the next five years. The amendment also says that if a prevailing wage cannot be calculated due to lack of information or the CBR was not the prevailing wage during two years, the Department shall use the prevailing wage as established by the Department's annual prevailing wage survey. (Several House Amendment bills aimed to limit the application of the amendment by granting school districts with an opt-out option or by excluding the last two years of the five-year period from the next prevailing wage calculation were either defeated or stricken.)

As a result of the modifications indicated above, the calculation of the prevailing wage must be calculated according to any of the following three criteria: 1) the two-year CBR as PW as amended in 2008; 2) the majority rule with more than 50% of the employees in a given occupation receiving the same rate; or 3) the weighted average.

3.1.1 Statistical consistency

3.1.1.1. Sampling

The first step in this research was to check for statistical consistency in the DDoL's PW methodology. The correspondence between the composition of the address file used for the survey (the mailing list, or universe) and the answers to the survey (the companies actually completing valid

[5] State of Delaware, Department of Labor, Office of Labor Law Enforcement – February 2, 2009 – See Apendix A
[6] Delaware General Assembly, 144th General Assembly, Senate Bill # 118

questionnaires) were examined. The objective was to see if the survey responses were representative of the structure of the construction industry in Delaware and, consequently, the wage structure of the industry.

The file used by DDoL as a mailing list for the March 2010 PW determination survey contains 2,364 construction companies. While there is no identification of the characteristics of the employment agreement (with union or not), we consulted construction industry representatives who helped us to determine the union status of the listed companies. As can be seen in Figure 1, only 2% of the mailing list has been characterized as "union."

Figure 1: Questionnaire vs. Survey answers

DoL Survey mailing	Count	%
Total Number of companies listed	2,364	
Number of Union companies	39	2%
Number of Non-Union	2,325	98%
DoL Survey answers	**Count**	**%**
Total Number of companies listed	261	
Number of Union companies	111	43%
Number of Non-Union	150	57%

Source: CRI calculations based on DoL data

The lower part of Figure 1, details the composition of the answers to the survey. First, the number of respondent companies is just slightly higher than 11% of the total mailing, which, among other possible causes, could be indicating some communication problems between DDoL and the surveyed firms. Second, the numbers of unionized companies vs. non-unionized are close to even and this distribution is, without a doubt, different from the structure of the mailing list as shown in the upper part of Figure 1. **If we assume that the composition of the mailing list reflects the distribution of contractors interested in participating in construction projects in Delaware, the answers to the survey are not consistent with that structure. There is over representation of union contractors at the company level.**

The second part of the analysis is with respect to the employment identified in the mailing list vs. the questionnaire answers. The results are shown in Figure 2.

The disparity in the composition of union and non-union employment between the mailing list and the survey answers confirms the presence of union bias in the survey. While 9% of employment in the surveyed construction companies is identified as union, 35% of the employment indicated in the responses is reported as union. **Again, there is over representation of union employees in the final data.**

Figure 2: The employment side

DoL Survey mailing	Count	%
Total employment listed	8,809	
Union	763	9%
Non-Union	8,046	91%
DoL Survey answers	**Count**	**%**
Total employment listed	11,653	
Union	4,035	35%
Non-Union	7,618	65%

Source: CRI calculations based on DoL data

In this case, we should add a word of caution. The mailing list file has several unreliable employment records that required double-checking to obtain a more accurate employment number. Part of the difficulties are due to the characteristics of the Unemployment Insurance file (basis of the mailing list,) which does not includes individual contractors and records mostly full-time jobs. Nevertheless, the difference in union and non-union employment between both samples is very large, which reduces the possibility of identification error.

While comparing both files, several survey responses were logged from companies who were not included in the mailing list. Figure 3 shows of the data from 261 respondent firms used in the PW calculation, only 109 firms (42%) were from the mailing list. In other words, the majority of the firms answering the survey, representing 58% of the total, have responded at the initiative of the DDoL or following the request of employers associations or business unions— not in response to the survey mailing.

Figure 3: Respondent firms by source

DoL Survey answers	Count	%
Total answers from mailing list	**109**	
Union	30	28%
Non-Union	79	72%
Total answers not from mailing list	152	
Union	81	53%
Non-Union	71	47%

Source: CRI calculations based on Del DoL data

As noted in Figure 1, 43% of the total 261 survey respondents were union firms. Of the respondents from the mailing, 28% were union while 53% of the respondent firms from the outreach effort were union. **The survey data generated by the outreach effort considerably adds to the union bias of the final PW database.**

The respondents are also heavily skewed toward out-of-state firms. Almost 60% of all the respondents in the final PW data set are from outside of Delaware. This includes 73% of the union respondents and 47% of the nonunion respondent.

Finally, Figure 4 replicates Figure 3, but using the employment from the respondents to the mail survey and the outreach survey. Over 88% of the employment data in the final PW database came from the outreach effort (only 12% from the mailing). **The issue of over representation of unionized labor, hence wages, from the outreach effort is again evidenced.**

Figure 4: Employment of respondent firms by source

DoL Survey answers	Count	%
Total employment from mailing list	**6,816**	
Union	2,031	30%
Non-Union	4,785	70%
Total employment exc. mailing list	**8,837**	
Union	2,004	23%
Non-Union	6,833	77%

Source: CRI calculations based on Del DoL data

In our view, there is both a sample design bias and a survey response bias. A methodological adjustment is necessary to make the PW determination a better reflection of the true structure of the Delaware construction industry.

3.1.1.2. Methodology application

The DDoL's PW methodology was applied to the database compiled with the survey answers used in the March 2010 PW determinations. Some of the results are listed in Figure 5. The column indicated as CRI (Caesar Rodney Institute) displays the results obtained by applying the PW methodology specified in the state of Delaware regulations. The column labeled DDoL includes the officially published PW determinations.

Upon inquiry, DDoL has partially answered several of the disparities between the CRI estimates and the published PW rates. For instance, Carpenters, according to our reckoning, should have a PW determination of $43.42. This is the result of applying the weighted average procedure, as there is no wage rate that has the majority of employment (>50% rule.) The rate indicated by DDoL as the PW has only 41% of the employment. We assume that DDoL has applied the two-year/five-year amendment introduced in 2008 by the Delaware General Assembly (see page 3, **Introduction**) which establishes that when the collective bargaining rate (CBR) prevails as the PW for two consecutive years, the CBR will be the PW for the following five years.

Nevertheless, we think that that possibility is rather puzzling as there are no answers from union companies for that classification in the 2010 survey. Considering that the amendment was passed in January 2008, the lack of union wage answers in 2010 (data correspond to July-December 2009) makes the regulated methodology difficult to apply.

Another troublesome issue is that for some occupations, the reply from just one company is considered sufficient to establish the PW. This is the case, for instance, with "Boilermakers." The same company in two separate construction industries, Building and Heavy, established the PW. There is no objection to the issue from a methodological point of view. However, the lack of competition in that and other occupations creates the possibility of just a handful of companies setting up the PW during a period of low industrial activity and acquiring a dominant position in the industry.

Figure 5: Prevailing Wage calculations

	New Castle					
	Building		Heavy		Highway	
CLASSIFICATION	CRI	DoL	CRI	DoL	CRI	DoL
ASBESTOS WORKERS	-	$ 36.66	-	$ 46.38	-	-
BOILERMAKERS	$ 63.07	$ 63.07	$ 63.07	$ 63.07	-	-
BRICKLAYERS	$ 24.50	$ 43.48	-	$ 38.48	**$ 40.23**	$ 43.48
CARPENTERS	$ 43.42	$ 47.56	$ 39.17	$ 47.56	$ 40.35	$ 40.35
CEMENT FINISHERS	**$ 43.45**	**$ 43.45**	$ 43.45	$ 43.45	$ 31.04	$ 31.04
ELECTRICAL LINE WORKERS	-	$ 43.49	$ 27.27	$ 27.27	$ 34.29	$ 34.29
ELECTRICIANS	$ 29.13	$ 55.35	-	$ 55.35	$ 55.35	$ 55.35

Source: CRI calculations based on DoL data

3.1.2 The Impact of the latest modifications on wages

One of the justifications given by members of the construction industry for the two-years/five-years amendment is that the application of that rule reduces the volatility of PW and wages in general. In our view, that is not necessarily the case, at least when the application starts. Figure 6 includes all PW for Building industry in New Castle County for the years 2009 and 2010. The jump in the PW for Cement Finishers of 102% is a proxy of the volatility when the application of the amendment begins.

It also should be noted that in the worst recession since the Great Depression, when the unemployment rate in Construction hit 25%, nearly all the PW rates across the 26 job classifications increased.

Two classifications, Asbestos Worker and Electrical Line Workers, have no reported employment or wages but the procedures require filling in with the best estimate (see Figure 5). In these cases, the best estimate or proxy is the previous PW. Clearly, the intention of the procedure is to give some estimate of PW that can be used if that occupation or classification would be necessary for a project during the year. However, as with the two-year/five-year amendment, their application sets a wage floor going forward regardless of the underlying economic conditions for the industry and the government purse.

The problem with using the two-years/five-years amendment and other procedures is that unlike the real world of markets, **the PW wages always increase, or stay flat, regardless of economic conditions, industry activity level, and, most of all, changes in the supply and demand of labor.** That situation appears clearly in Figure 7. Given the methodology applied, changes in PW rates can be very erratic but with one characteristic: all them increase faster than inflation and some of them by a great margin.

Figure 6: PW for building construction in New Castle County

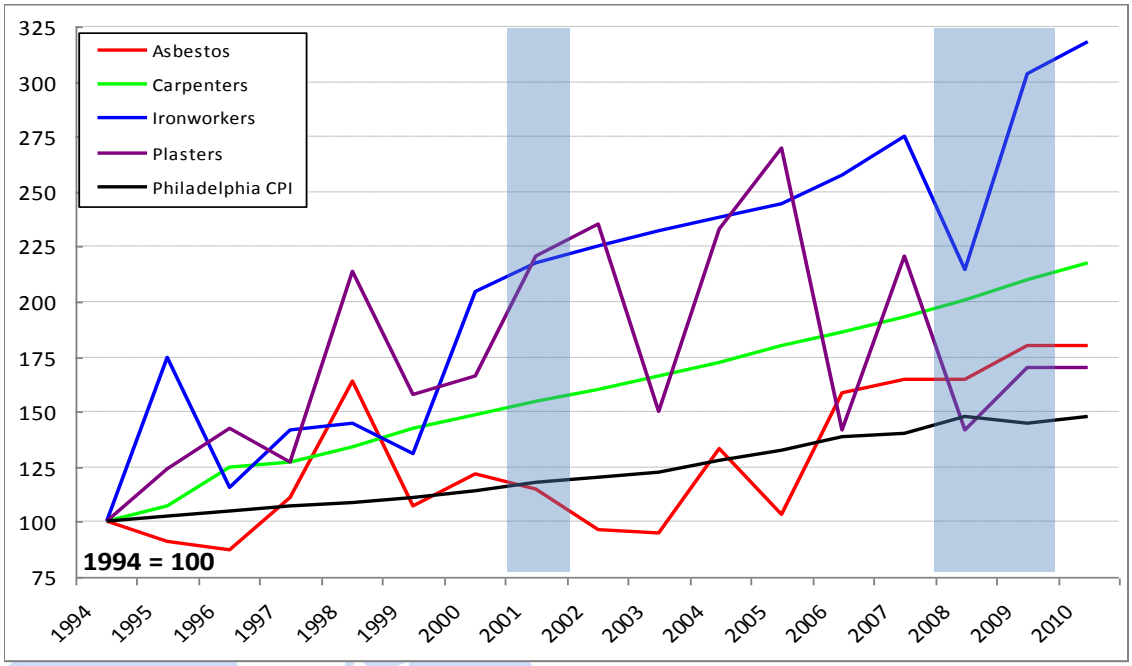
CLASSIFICATION	PW 03/09	PW 03/10	Change
Asbestos Worker	$36.66	$36.66	0%
Boilermakers	$53.07	$63.07	19%
Bricklayers	$41.98	$43.48	4%
Carpenters	**$45.91**	**$47.56**	4%
Cement Finishers	**$21.50**	**$43.45**	102%
Electrical Line Workers (2004)	$43.49	$43.49	0%
Electricians	$54.05	$55.35	2%
Elevator Constructors	$61.17	$64.17	5%
Glaziers	$57.20	$60.45	6%
Insulators	$46.38	$48.38	4%
Ironworkers	$53.27	$55.78	5%
Laborers	$34.60	$36.10	4%
Millwrights	$55.51	$58.65	6%
Painters	$39.46	$39.17	-1%
Pile Drivers (2004)	$62.63	$64.37	3%
Plasters	$28.40	$28.40	0%
Plumbers/Pipefitters	$51.00	$54.27	6%
Power Equipment Operators	$50.31	$53.31	6%
Roofers Composition	$21.55	$22.19	3%
Roofers Shingle, Slate, Tile	$17.52	$17.52	0%
Sheetmetal Workers	$59.28	$61.53	4%
Soft Floor Layers	$41.73	$43.42	4%
Sprinkler Fitters	$38.09	$49.30	29%
Terrazzo/Marble/Tile Setters	$47.45	$48.95	3%
Terrazzo/Marble/Tile Finishers	$54.93	$56.43	3%
Truck Drivers	$23.01	$23.19	1%

Source: DoL

In Figure 7, the PW rates for four job classifications as well as the regional price index (the Philadelphia CPI) have all been normalized to a base 1994 = 100. PW rates for the four occupations increased at a faster rate than inflation and, with the exception of "Asbestos Workers" in 2001, all PW rates increased during recessions (2001 and 2008-2009 both indicated with a vertical bar.) A special case is the PW rate for "Carpenters" that has been growing almost at a constant pace since 1996-1997. It is difficult to associate those increases to any significant increment in productivity, which reduces the spectrum of explanations for the constant increase in PW rates to rigidities and lack of efficiency in the process of PW determination. **Over the past decade, output per worker in construction in Delaware has fallen (U.S. Bureau of Economic Analysis).**

Further, analysis indicates that application of the two-year/five-year amendment, the justification by some industry members for the enactment of the amendment, has increased not decreased, PW volatility. Figure 8 represents the volatility for most of the PWs as standard deviations for two periods: 1994-2008 and 1994-2010. The first period would exclude the application of the amendment as it was enacted on January 2008, and the second would include the amendment (if applied to that occupation classification). If volatility were reduced by application of the amendment, the standard deviations for the latter period should be lower than those of the former period.

Figure 7: Evolution of selected PWs and regional CPI - normalized



Source: Delaware DoL, BLS

The results fail to prove the reduction in volatility. Only two occupations experienced a minor decline in volatility (Plasters and Roofers Composition), while the volatility rose in all the remaining occupations. (Four occupations were from the analysis-Electrical Line Workers, Insulators, Pile Drivers, and Roofers Shingle- as the determination of their PW began in 2004.) **Based upon this simple statistical exercise, the claim that the two-year/five-year amendment use would reduce volatility is not supported.**

Figure 8: Calculated Volatility of Prevailing Wages (standard deviations)

Period	94-08	94-10	Change
Asbestos Worker	$5.88	$6.80	16%
Boilermakers	$8.88	$10.64	20%
Bricklayers	$6.87	$7.87	14%
Carpenters	$6.71	$7.68	14%
Cement Finishers	$6.36	$7.16	13%
Electricians	$9.03	$10.18	13%
Elevator Constructors	$7.46	$9.46	27%
Glaziers	$9.86	$11.61	18%
Ironworkers	$9.74	$11.36	17%
Laborers	$7.92	$8.79	11%
Millwrights	$8.61	$9.90	15%
Painters	$7.55	$8.22	9%
Plasters	$8.53	$7.98	-6%
Plumbers/Pipefitters	$6.82	$8.40	23%
Power Equipment Operators	$8.33	$10.15	22%
Roofers Composition	$3.12	$2.95	-6%
Sheetmetal Workers	$10.82	$11.93	10%
Soft Floor Layers	$6.88	$7.53	10%
Sprinkler Fitters	$8.56	$9.29	9%
Terrazzo/Marble/Tile Setters	$9.52	$9.58	1%
Terrazzo/Marble/Tile Finishers	$9.20	$11.68	27%
Truck Drivers	$3.12	$3.41	9%

Source: CRI calculations from Del DoL data

There is a variety of serious methodological issues concerning the DDoL's calculation of Delaware's prevailing wage. These are over and above the sampling and response bias noted earlier.

3.2 Summary

The result of the application of the PW determination methodology and the process through which the survey is conducted in the State of Delaware is PW rates higher than market rates for the construction industry. These higher-than-market wages translate in less competition in the government funded projects bidding process, which translate into higher cost of government projects. As result, government investment is lower than necessary, reducing the welfare of the people of the State of Delaware who are not receiving the "the best return" in state government services for their tax dollars.

4 THE DAVIS-BACON AND RELATED ACTS (DBRA)

"The Davis-Bacon Act as amended, requires that each contract over $2,000 to which the United States or the District of Columbia is a party for the construction, alteration, or repair of public buildings or public works shall contain a clause setting forth the minimum wages to be paid to various classes of laborers and mechanics employed under the contract."[7]

4.1 Brief description of the methodology

The DBRA, or the "Acts," mandates that contractors and their subcontractors, engaged in projects as described above, pay to the workers employed directly at the site of the work (at least) the locally prevailing wages and fringe benefits paid on projects of similar character. The Act designates the Secretary of Labor to calculate the local prevailing wages (PWs.).

It should be noticed that in addition to the Act, Congress has passed "related Acts," which have extended the application of PWs to near 60 statutes where construction projects are totally or partially funded by grants, loans, loan guarantees, and insurance in areas as transportations, housing, air and water pollution, and health. The Act reaches projects if they are funded or assisted by two or more Federal statutes and one of them falls under the DBRA purview.

The geographical range of application of the DBRA is the 50 States of the Union and D.C. However, when projects are under Federal statutes like the Housing and Community Development Act of 1974, Davis-Bacon prevailing wage provisions will apply to places like Guam or Virgin Islands despite of their location outside of the 50 States and DC.

DEFINITION:

A "wage determination" is the listing of wage rates and fringe benefit rates for each classification of laborers and mechanics which the Administrator of the Wage and Hour Division of the U.S. Department of Labor has determined to be prevailing in a given area for a particular type of construction (e.g., building, heavy, highway, or residential).[8]

The BLS – Wage and Hour Division (WHD) considers two types of wage determinations: general determinations, also known as area determinations, and project determinations. It should also be noticed that the definition of Wage Determination is open to include all modifications, expansions, etc., that could be added to the DBRA.

General Wage Determination: are the wage rates determined by the WHD as prevailing within a geographical area.

Project Wage Determination: are the wage rate calculated by the WHD by request for a specific project.

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[7] **GENERAL WAGE DETERMINATIONS ISSUED UNDER THE DAVIS-BACON AND RELATED ACTS. http://www.gpo.gov/davisbacon/referencemat.html**

[8] **Ibid.**

The methodology used in the calculation of prevailing wages is the standard, e.g. if more than 50% of the reported workers in an occupation are receiving the same rate, that rate is the PW. Otherwise, the office calculates a weighted average multiplying the number of employees times the wage rate.

4.2 Comparison with DDoL's methodology

The implementation of the DRBA for the State of Delaware is the responsibility of the Philadelphia District Office of the US Dept. of Labor, Wage and Hour Division. The Regional Office uses the McGraw-Hill Construction Dodge Reports as the source listing of construction companies to be included in the mailing of the DBRA survey questionnaire – Form WD10. In addition to the roster from the Dodge report, the office requires that the identified contractors name also any subcontractor included in the project. At the time, the office contacts local unions and local non-union contractors to submit wage and fringe benefits information.

In general, the WHD follows the same methodology in states and agencies requiring PW calculations. With the State of Delaware, however, there are a couple of differences that must be highlighted:

1) As indicated in Section 3, PW in Delaware includes other methodologies in addition to the >50% rule and the weighted average. This difference in the methodologies makes both systems not strictly comparable.

2) The regional WHD office only conducts full surveys when requested and ahead of a federally funded construction project. Such projects are scarce in Delaware. Meanwhile, the DDoL is required to conduct an annual PW determination based on a survey.

4.2.1 Possibility of substitution of Delaware PW by DBRA

In addition to the difference in methodologies, the PW determination performed by the WHD regional office has other problems that, in our view, make the substitution difficult:

1) **The last survey conducted by the regional WHD office was completed by the end of 2005.** Survey respondents were asked to provide information for the period December 1, 2003 to December 6, 2004 and the deadline for submission of the forms by March 2005. After that, the processing of the data took the rest of the year. (Members of the regional office indicated that the main reason for the delay was due to a new software system not to the difficulties of processing.) Since December 2005, no other full survey was requested and conducted.

2) **After that initial survey, updates, and new determinations have been done largely with information reported (voluntarily) by labor unions.** This information (provided by labor unions) is indicated with four letters for the occupation and four digits indentifying the local union chapter. A visual review of the last determination shown at the WGD office' site[9]

[9] **(http://www.wdol.gov/dba.aspx#8 and http://frwebgate.access.gpo.gov/cgi-in/getdoc.cgi?dbname=Davis-Bacon&docid=DE20100005)**

indicates that all recent wage determinations are the result of data provided largely by Delaware unions.[10]

5 THE OCCUPATIONAL EMPLOYMENT STATISTICS (OES)

The BLS and state employment agencies handle the Occupational Employment Statistics program (OES) jointly. BLS is responsible for the development of the methodology for the survey and data processing, and state agencies handle the survey, follow up, and tabulation of the survey data. In the State of Delaware, the Office of Occupational and Labor Market Information (OOLMI) of the Department of Labor carries on the process of data collection and tabulation.

5.1 Description of the methodology

Since 2002, BLS uses the North American Industry Classification System (NAICS) to categorize the establishments. Each one receives a six-digit code as the most detailed classification. However, the most aggregated classifications, e.g., "Construction" are identified with the first two digits of the NAICS.

For employment occupations, BLS uses U.S. Office of Management and Budget's Standard Occupational Classification (SOC) system to define occupations. The SOC allows the classification of workers into occupational categories when collecting, calculating, or disseminating employment and wages data under the OES program. The SOC is divided into 801 different occupations, according to their occupational definition. Those occupations are combined or aggregated into 461 broader occupations, 97 minor groups, and 23 major groups. Detailed occupations in the SOC with similar job duties, and in some cases skills, education, and/or training, are grouped together.

The OES survey includes all full- and part-time wage and salary workers in nonfarm industries. However, there are important exclusions from the survey as self-employed workers, owners and partners in unincorporated firms, household workers, and unpaid family workers are excluded - they are not part of the UI program.

The survey is based on a probabilistic sample drawn from a universe of about 6.9 million in-scope establishments stratified geographically and by industry. The sample is designed to represent all nonfarm establishments in the United States. Data gathering is done in a 3-year cycle with samples, referred as panels, of about 200,000 establishments taken bi-annually in November and May. The survey tries to avoid sampling the same establishment again in the next five panels.

The survey is conducted over a rolling three-year cycle or six panels to obtain ample geographic, industrial, and occupational coverage. Approximately 1.2 million establishments are combined during the three-year cycle. The first and last year for the cycle include only one panel. For instance, the latest estimate with data up to May 2009, combines data collected in November 2006 (second panel of the year,) May and November 2007, May and November 2008, and May 2009. For a given panel, survey questionnaires are initially mailed out to almost all sampled establishments. Three additional mailings are sent to nonrespondents at approximately 4-week intervals. As indicated above, State agencies personnel may telephone or e-mail to nonrespondents.

[10] Officers at the WHD regional office verbally confirmed this. The low number of federally funded construction projects in Delaware had not required new surveys.

One of the main advantages of using the six panels of data is the reduction in sampling errors, especially for smaller geographic areas and occupations. Wages for the current panel need no adjustment. However, wages in the five previous panels need to be updated to the current panel's reference period.

The definition of wage is "money that is paid or received for work or services performed in a specified period." The OES asks for the inclusion of base rate pay, cost-of-living allowances, guaranteed pay, hazardous-duty pay, incentive pay such as commissions and production bonuses, tips, and on-call pay. Retroactive of back pay, jury duty pay, overtime pay, severance pay, shift differentials, non-production bonuses, employer costs for supplementary benefits, and tuition reimbursements are excluded from the definition and are not requested in the survey. Also and very important, employers are asked to classify each of their workers into an SOC occupation and one of the following 12 wage intervals:

Figure 9: Wage intervals for non-Federal employees

WAGES		
Interval	**Hourly**	**Annual**
Range A	Under $9.25	Under $19,240
Range B	$9.25 to $11.49	$19,240 to $23,919
Range C	$11.50 to $14.49	$23,920 to $30,159
Range D	$14.50 to $18.24	$30,160 to $37,959
Range E	$18.25 to $22.74	$37,960 to $47,319
Range F	$22.75 to $28.74	$47,320 to $59,799
Range G	$28.75 to $35.99	$59,800 to $74,879
Range H	$36.00 to $45.24	$74,880 to $94,119
Range I	$45.25 to $56.99	$94,120 to $118,559
Range J	$57.00 to $71.49	$118,560 to $148,719
Range K	$71.50 to $89.99	$148,720 to $187,199
Range L	$90.00 and over	$187,200 and over

Source: BLS - OES

Wages for the current panel do not require adjustment, but those in the previous five panels need to be updated to the reference period of the current panel. To adjust survey data from earlier panels, the OES program uses the BLS Employment Cost Index (ECI.) The procedure adjusts previous wages for an occupation according to the average increase of the major or broader occupational division. There are several implicit and explicit assumptions about no major differences by geography, industry, or detailed occupation within the occupational division.

The OES program uses the BLS Employment Cost Index (ECI) to adjust survey data from prior panels before combining them with the current panel's data. The wage updating procedure adjusts each detailed occupation's wage rate, as measured in the earlier panel, according to the average movement of its broader occupational division. The procedure assumes that there are no major differences by geography, industry, or detailed occupation within the occupational division. The wage rates for the highest wage interval are not updated.

"Nonresponse is a chronic problem in virtually all large-scale surveys because it may introduce a bias in estimates if the nonrespondents tend to be different from respondents in terms of the characteristic being measured." The statement is from the BLS and is the opening statement for a section dealing with missing data or "nonrespondents." **The issue is very important in the case of the PW determination by the DDoL. As we have shown above, the composition of the respondents is very different from the**

mailing list. It is clear that the low response rate from nonunion firms creates a bias in the calculation of the Delaware PW.

To compensate for nonresponses, BLS uses credible data from existing answers from units with similar characteristics to the nonrespondents, which are imputed to fill in for the missing data of each nonresponding establishment. The imputation or allocation of data to the nonrespondent units is done through a statistical procedure called "Hot-Deck nearest neighbor imputation technique[11]." The technique finds the respondent unit that most closely resemblance the nonrespondent unit according to size class, industry, and area. Data from that unit, called the "donor," is imputed to the nonresponding unit. There is no repetition of "donors." With the data imputed to nonrespondent units, the coverage technically increases to 100% of the establishments included in the sample.

5.2 Comparison with DDoL PW determination methodology

The main observation raised about the OES system is exclusion of fringe benefits together with the reported wages. As indicated in the discussion about wages within the OES program, a large portion of payments other than strict wages are included with the reported data. It is debatable that the portion of payments excluded is relevant for the construction industry. Moreover, some of them, like jury duty pay, overtime pay, severance pay, shift differentials, or non-production bonuses, can hardly considered part of wages.

Nevertheless, if the concern is the lack of compatibility between the OES estimates and the PW estimates, fringe benefits can be estimated as a percentage of wages (excluding those already reported as part of the OES data) and applied to the OES estimates to obtain a compatible PW estimation. The most widely used source is the U.S. Bureau of Labor Statistic's National Compensation Survey, which provides annual data on benefits by occupation and industry. In addition, and as required under the Delaware PW regulations, any estimates will exclude mandated benefits such as the employer's contribution to Social Security.

Another observation about the OES system vs. the PW system is difference in timing. While the latest data from the OES was released in May 2010, the sample corresponds to the first panel of 2009. Meanwhile, the latest from the DDoL, released in March 2010, is from the second half of 2009. Clearly, the time difference is not substantial, except during periods of high activity in the industry and/or high inflation. In the first case, market forces will likely set wages higher. To solve the problem in the second case, adjustments in the wage rates can be done by using the BLS Employment Cost Index (ECI.)

Non-strictly comparable occupations is also another, although minor, observation. While there are some occupations within the Delaware PW determination without exact correspondent within the OES, that is largely because the OES has a more detailed and larger occupational definition than Delaware PW. **We have compared the definition of the 26 occupations in Delaware PW to the 49 definitions in the OES and found no major gaps.** (Three occupations from the OES, Millwright, Electrical Line Worker, and Truck Driver, are not from construction but the definitions are the same.) The result of the comparison of the two sets of definitions is listed in APPENDIX B.

The third and most important observation is the lack of compatible geographic coverage. The OES program estimates and releases data for the Wilmington, DE-MD-NJ Metropolitan Division, Dover, DE

[11] **Hot-Deck Imputation: A Simple DATA Step Approach, Lawrence Altmayer, U.S. Bureau of the Census, Washington, D.C.**

(partial county), and Sussex County, Delaware nonmetropolitan area. Out of the three regions, only Sussex County is complete. However, the DDoL itself circumvents that limitation.

5.2.1 Possibility of substitution of the OES for the Delaware PW

The Office of Occupational and Labor Market Information (OOLMI) of DDoL carries on the process of data collection and tabulation for the BLS. As indicated above, the methodology and procedures are those developed by BLS. However, the OOLMI not only handles most of the field and tabulation work for the OES program but also has its own program that differs from the OES program mostly in the geographical scope.

Using a computer program developed by the North Carolina State Employment Security Commission, **the OOLMI is able to calculate employment and wages by occupation for the geographical boundaries necessary for the PW determination, e.g., counties and statewide.** This is done without resorting to an additional survey like the one implemented by DDoL each year but using the ones already in place for the OES. In the annual report, the OOLMI states that their employment and wages estimates, while not the official BLS' estimates, but they are identical in most cases and where they differ it is not for meaningful margins.

One important characteristic of the OES program in the State of Delaware is the high percentage of response. **In the Introduction to the latest OES report for the State of Delaware[12], a statement indicates that response rates averaged 80% during the last four years of the survey (2006-2009.) In terms of the size of the sample and from the firms' side, the OOLMI indicated that in the latest survey there were 502 unique construction firms polled, which largely exceed the 261 firms polled by the DDoL's PW survey. From the occupations side, the survey covered 621 firms, including some government agencies. Keep in mind that the main difference in the number of firms in both cases is because some construction occupations are used by other industries. Finally, the total number of construction workers polled reached 22,012, with a standard error of 1.68%. Without a doubt, the utilization of the OES program instead of the existing DDoL PW, will reduce biases and increase the accuracy of the PW determinations.**

5.2.2 Potential schools' savings from adopting OES as PW

In order to test our hypothesis of large benefits emanating from an eventual replacement of the existing DDoL's PW calculations by the OES program, we have simulated the impact of such replacement on school projects. We identified as school projects 420 responses in the database with DDoL's survey answers, used in the March 2010 PW determinations. As all records in the database, which were used as basis for the calculations in previous chapters, entries identified as school projects include employment, occupation, and wages paid. To fulfill our simulations, we have calculated the labor cost of each record with different wage rates using the reported actual wages paid in the database, the published PW for 2010, the OES mean wages, and the OES experienced (worker) wages. The last two are those calculated by DDoL-OOLMI for State and Counties13. **Experienced (worker) wages are the highest wages for each occupation as it is calculated by OES, excluding the lowest one-third of the reported wages that are associated to "inexperienced" workers and/or trainees.** When a specific

[12] Department of Labor OOLMI, OES Program, Delaware Wages 2008, Pg 3. Accessible at: http://www.delawareworks.com/oolmi/Services/Researchers/OES.aspx

[13] Ibid. footnote 12.

occupation was not reported for a County, as it was sometimes the case for occupations in Kent or Sussex County, we have replaced it for the rate of NCC, which is normally higher even for occupations listed in all counties.

The results of the cost simulations are indicated in Figure 10.

Figure 10: Alternative School Project costs using different wage rates

County	With wages paid	With PW10	With OES mean wages	% of PW10	With OES experienced wages	% of PW10
NCC	24,180	27,018	14,452	53%	16,477	61%
Kent	10,934	11,345	5,407	48%	6,176	54%
Sussex	5,826	6,260	3,916	63%	4,420	71%
Delaware	40,940	44,622	23,775	53%	27,073	61%

Source: DDoL, OES. CRI's calculations

For the OES program, wages include "base rate, cost-of-living allowances, hazardous duty pay, incentive pay (including commissions, piece rates, and production bonuses), tips, longevity pay, on-call pay, and portal-to-portal pay." Specifically excluded are "back pay, overtime pay, severance pay, shift differentials, premium pay for holidays or weekends, meal and lodging allowances," [14]and several others that are unusual within the Construction Industry. One of the objections raised against the OES program as PW alternative is the lack of fringe benefits in the estimations. To overcome that objection we have complemented the OES methodology with the BLS' National Compensation Survey - Benefits[15] in order to identify excluded benefits relevant for the construction industry. Only "paid leave" deserves attention as it includes "paid vacations." We have estimated at 11% of the wage rate all "paid leave" benefits and added that percentage to the OES wage rates.

As clearly seen in Figure 10, even when using OES experienced wages in the calculations, the labor cost of those calculations are 39% lower that when using the PW10. Moreover, as we have argued above, the OES wage rates are truly calculations of wage market rates for experienced workers, with no or negligible bias as opposed to DDoL's PW.

We have search national calculations of labor costs for construction projects as well as consulted local construction companies. In general, labor contributions account for 35% to 40% of total school project costs. Consequently, we believe that by using 35% as labor contribution we are being conservative in our estimates.

[14] **Ibid. footnote 12**
[15] **http://www.bls.gov/ncs/ebs/**

Figure 11: Potential Savings estimation from switching DDoL's PW to OES's PW

Sector	State FY-11 Capital Budget	Federal Matching	School Districts Bonds	Total Resources	Potential Savings
Education	102,369,017		36,852,846	139,221,863	19,003,784
Transportation	140,980,200	563,920,800		704,901,000	96,218,987
Other	144,399,714			144,399,714	19,710,561
Total	387,748,931	563,920,800	36,852,846	988,522,577	134,933,332

Source: DE FY-11 Capital Budget. CRI's calculations

As indicated in Figure 11, the Public Education portion of the State Capital Budget for FY-11 is $102,369,017.00. Adding the expected contribution of the School Districts, mostly through bond issuances, the Total Resources for education reaches to $139,221,863. Out of that total, we estimate potential savings in the labor component (39% reduction in labor cost from Figure 10 times 35% of the labor component of school projects = 13.65%) at $19,003,784. Applying the same percentage to the other main items in the FY-11 Capital Budget, we calculate potential savings of $96,218,987 and $19,710,561 for Transportation and Other, respectively. An important caveat: the labor component in Transportation could be slightly lower, which could reduce the Potential Savings. However, with a total estimate of $134,933,332 in Potential Savings, there is more than enough room for down adjustment without compromising the overall results. **Clearly, Potential Savings do not mean lower overall spending. On the contrary, overall spending may remain the same but output per tax-dollar may increase north of $130 million. At the same time, we should keep in mind that part of the reductions in the initial labor cost could be expended in materials and additional labor as needed for new projects.**

An additional caveat: in none of the previous calculations we considered secondary impacts on economic activity and employment in the construction or related industries and services. Clearly, initial higher output in construction derived from the proposed changes in the PW calculations will have a positive secondary impact on the construction industry itself and related industries and services.

6 CONCLUSIONS AND RECOMMENDATIONS

As stated in the Introduction, this report does not challenge the concept of a "prevailing wage." The objective of the research was to test the methodology currently in use in the State of Delaware and highlight its limitations and biases.

The analysis of the Delaware PW determination methodology shows a variety of methodological issues.

Survey sampling bias. The analysis of the sampling technique shows substantial disparities between the structure of the mailing, in terms of number of union non-union companies, and the structure of the response questionnaires. The analysis of this issue is detailed in pages five to eight. The conclusion is that there is either a sample design bias and/or a survey response bias that results in an over representation of union companies. In other words, if we assume the mailing list is a representation of the structure of the construction industry in Delaware, the answers to the questionnaire used to determine Delaware's PW is not such a representation.

In analyzing the **application of the methodology** in pages eight to 11, we show that the impact of some of the latest modifications to the initial methodology (PW calculation as a weighted average,) have created more distortion or bias to the PW itself. We demonstrated that the two-year/five-year rule, that grants the utilization of CBR as the PW, has not decreased annual volatility of the wage rates, as it was intended, but in most cases has increased that volatility. In addition, the Delaware PW always rises regardless of the business cycle, construction industry activity, supply and demand conditions for construction labor, the number of government projects, and the size of the projects.

The report analyzes the possibility of using the Davis-Bacon PW determination (DBRA) as an alternative (Section 3.) The analysis found that due to the low level of Federal Government projects in the State of Delaware, PW determinations are not done regularly. Most of the recent determinations are not the result of the regular survey (the last was conducted in 2005), but the result of local union provided information. In other words, the same bias present in the DDoL PW determination is present in the Davis-Bacon and Related Acts determinations.

In Section 4, we focus on the Bureau of Labor Statistics, Occupational Employment Statistics (OES) program. This program is based in one of the most comprehensive survey in the U.S. Twice a year, the OES surveys 200,000 establishments or units, covering all industries detailed in the North American Industrial Classification System. At the same time, it polls more than 800 occupations for all industries and establishment size. The OES uses an aggregation of all Unemployment Insurance files, which assures legal employment coverage higher than 95%.

The OES system has several advantages over the DDoL PW system that are shown in Section 4. Importantly, the BLS makes a concerted effort to avoid the kind of problems found with the DDoL's PW system: nonsystematic sampling and nonresponse bias.

Two objections rose by some analysts opposing the utilization of the OES for the PW determination, the exclusion of fringe benefits and geographical limitations, are non-issues. First, fringe benefits can be estimated from many sources as a percentage of the wage rate from many sources at national level. Second, the geographical limitation is another non-issue as DDoL already reliably provides each year the OES data for the State of Delaware and its counties.

6.1 Our system choice

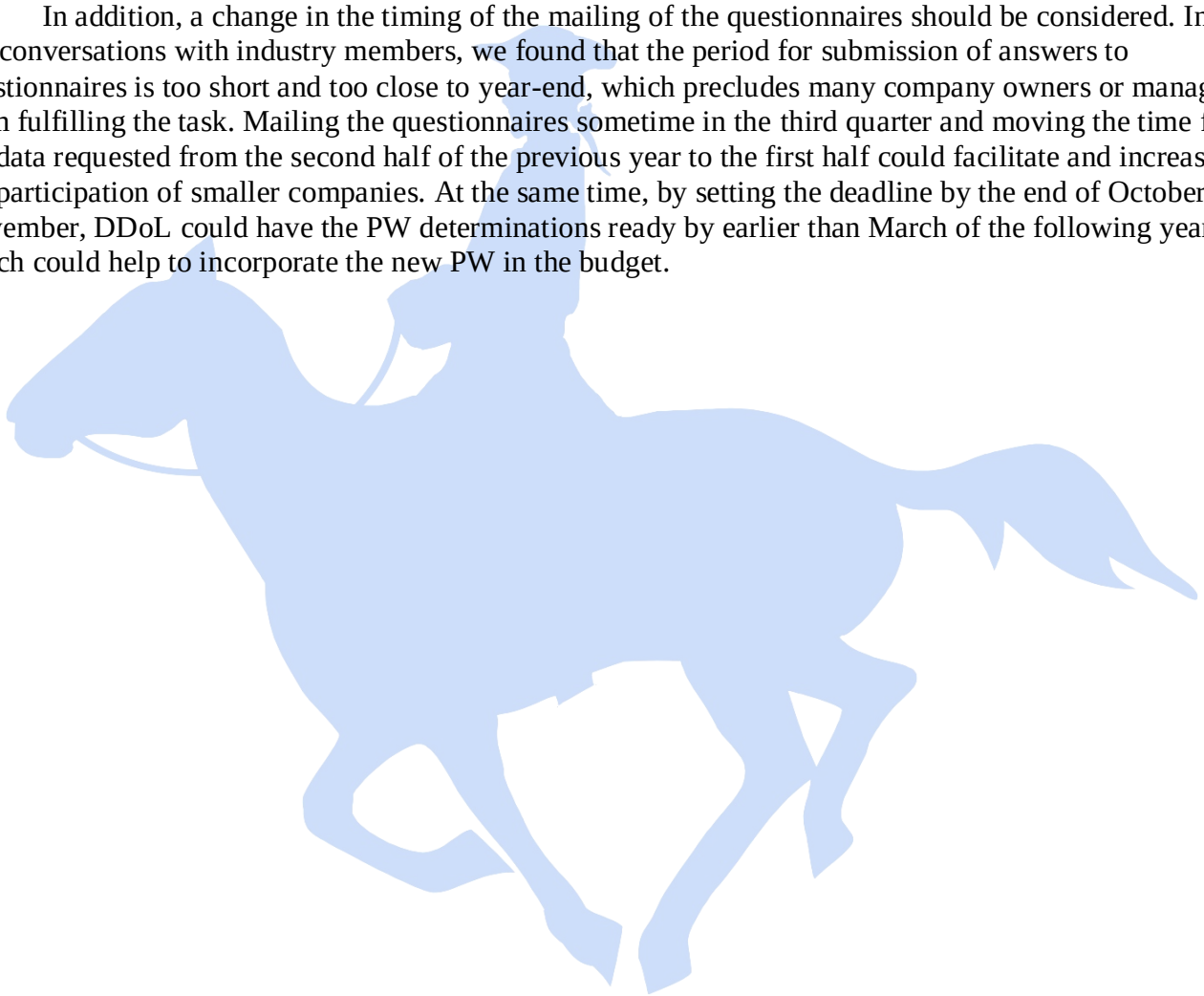
1) To solve the problems with the DDoL PW determination analyzed in this report, **we favor the adoption of the OES estimates**. We believe that most of the limitations and difficulties raised against the adoption of the OES can readily be resolved. The DDoL currently vets the OES for Delaware and provides a distribution by county on an annual basis. Duplication of that work through a separate PW survey by the DDoL that produces significantly biased results is a waste of taxpayers' money.

The biases in the current PW determination methodology result in higher wages being applied by construction occupation than actually prevail in the market in Delaware. These higher labor costs reduce the capital projects that can be accomplished for a given budget and restrain the number of construction workers employed. Moreover, a higher and inflexible PW creates a sine-qua-non income transfer from workers (albeit taxpayers) in other industries, whose wages are flexible and depend upon economic conditions.

2) If the decision were to continue with the DDoL PW determination, there are several improvements that should be included in order to make the system more technically sound and, most of all, fair for the taxpayers.

The mailing and response lists should be carefully analyzed to represent the structure of the Delaware construction industry. Given the fact that participation in the survey is voluntary (despite the application of the PW being mandatory,) answers should be weighted to compensate for differences in responses. Those differences are in number of respondents by size, number of employees, and union or non-union conditions. All those factors should be used to weight the answers in order to avoid biases.

In addition, a change in the timing of the mailing of the questionnaires should be considered. In our conversations with industry members, we found that the period for submission of answers to questionnaires is too short and too close to year-end, which precludes many company owners or managers from fulfilling the task. Mailing the questionnaires sometime in the third quarter and moving the time for the data requested from the second half of the previous year to the first half could facilitate and increase the participation of smaller companies. At the same time, by setting the deadline by the end of October or November, DDoL could have the PW determinations ready by earlier than March of the following year, which could help to incorporate the new PW in the budget.



APPENDIX A

Listing of the 26 occupations/classifications in the construction industry cataloged by DDoL within the scope of the PW determination. The same list applies to each industry division and geographical area (county.)

Asbestos Workers
Boilermakers
Bricklayers
Carpenters
Cement Finishers
Electrical Line Worker
Electricians
Elevator Constructors
Glaziers
Insulators
Iron Workers
Laborers
Millwrights
Painters
Pile Driver
Plasterers
Plumbers/Pipefitters/Steamfitters
Power Equipment Operators
Roofers – Composition
Roofers – Shingle, Slate and Tile
Sheet Metal Workers
Soft Floor Layers
Sprinkler Fitters
Terrazzo/Marble/Tile Setters
Terrazzo/Marble/Tile Finishers
Truck Drivers

APPENDIX B

Equivalence between the BLS - SOC and Del Classification of Workers under the PW Law

US Bureau of Labor Statistics 2010 Standard Occupational Classification		Delaware Department of Labor Classification of Workers Under PW Law
Code	**Description**	**Description**
47-2011	Boilermakers	Boilermaker
47-2021	Brickmasons and Blockmasons	Bricklayer
47-2022	Stonemasons	
47-2031	Carpenters	Carpenter
47-2041	Carpet Installers	
47-2042	Floor Layers, Except Carpet, Wood, and Hard Tiles	Soft Floor Layer
47-2043	Floor Sanders and Finishers	
47-2044	Tile and Marble Setters	Terrazzo/Marble/Tile Setter Terrazzo/Marble/Tile Finisher
47-2051	Cement Masons and Concrete Finishers	Cement Finisher
47-2053	Terrazzo Workers and Finishers	
47-2061	Construction Laborers	Laborer
47-2071	Paving, Surfacing, and Tamping Equipment Operators	
47-2072	Pile-Driver Operators	Pile Driver
47-2073	Operating Engineers and Other Construction Equipment Operators	Power Equipment Operator
47-2081	Drywall and Ceiling Tile Installers	
47-2082	Tapers	
47-2111	Electricians	Electrician
47-2121	Glaziers	Glazier
47-2131	Insulation Workers, Floor, Ceiling, and Wall	Insulator
47-2132	Insulation Workers, Mechanical	
47-2141	Painters, Construction and Maintenance	Painter
47-2142	Paperhangers	
47-2151	Pipelayers	
47-2152	Plumbers, Pipefitters, and Steamfitters	Plumber/Pipefitter/Steamfitter Sprinkler Fitter
47-2161	Plasterers and Stucco Masons	Plasterer
47-2171	Reinforcing Iron and Rebar Workers	
47-2181	Roofers	Roofer – Composition Roofer – Shingle, Slate and Tile
47-2211	Sheet Metal Workers	Sheet Metal Worker
47-2221	Structural Iron and Steel Workers	Ironworker
47-2231	Solar Photovoltaic Installers	
47-3011	Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	
47-3012	Helpers--Carpenters	
47-3013	Helpers--Electricians	
47-3014	Helpers--Painters, Paperhangers, Plasterers, and Stucco Masons	
47-3015	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	
47-3016	Helpers--Roofers	
47-3019	Helpers, Construction Trades, All Other	
47-4011	Construction and Building Inspectors	
47-4021	Elevator Installers and Repairers	Elevator Constructor
47-4031	Fence Erectors	
47-4041	Hazardous Materials Removal Workers	Asbestos Worker
47-4051	Highway Maintenance Workers	
47-4061	Rail-Track Laying and Maintenance Equipment Operators	
47-4071	Septic Tank Servicers and Sewer Pipe Cleaners	
47-4091	Segmental Pavers	
47-4099	Construction and Related Workers, All Other	
49-9044	Millwrights	Millwright
49-9051	Electrical Power-Line Installers and Repairers	Electrical Line Worker
53-3032	Heavy and Tractor-Trailer Truck Drivers	Truck Driver

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The Caesar Rodney Institute *(CRI) is a 501(c)(3) research and education organization dedicated to the measured improvement in the quality of life, the degree of individual liberty, and opportunity for personal fulfillment for all Delawareans.*

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