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REPORT

Project Labor Agreements – Impact Study

for the
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1. Executive Summary

This report has been prepared for the Department of Veterans Affairs (VA), Office of Construction & Facilities Management, to provide the VA with an opinion on the potential cost, schedule and other impacts associated with the use of Project Labor Agreements (PLAs) on VA construction projects. This report focuses on five cities where the VA has upcoming projects. These cities are Denver CO, New Orleans LA, New York NY, Orlando FL and San Francisco CA.

The report was compiled by reviewing available literature and interviewing key industry representatives including contractors and trades unions to gain an understanding of specific local issues given their experience and knowledge of PLAs.

The subject of PLAs has created much debate in the U.S. and written reports often vary widely in their conclusions – some affirming that PLAs are a useful management tool for achieving cost savings, on-time, on-budget completion and quality construction, while others argue that PLAs cause up to 30% increases in construction costs, decreased bid competition and less skilled labor availability.

In this study Rider Levett Bucknall has found that the cost impact of using a PLA is strongly influenced by the labor market characteristics of the region in which the PLA is implemented. We conclude that using a PLA will not benefit the VA for ALL of the five study locations. Further, we conclude that PLAs will likely contribute to significant cost increases in some cities.

In locations where current union presence is stronger (San Francisco CA and New York NY), and in difficult economic times where construction activity is low, a PLA can offer concessions to normal union work rates and rules. While these are concessions against a 'normal' union job, they are not necessarily concessions against the standard stand alone Davis-Bacon rates. Most large projects in these cities are 'union jobs' and the PLA can actually be beneficial to a project.

In New York, we consider that a PLA could be used to negotiate construction cost savings of approximately 2% to 5% in a poor economy. In a stable economy we see that the effect of a PLA in New York would be relatively cost neutral ranging from -1.5% to +1.5%.

In San Francisco, we see a PLA would be relatively cost neutral ranging from -1.5% to +1.5% in a poor economy. In a stable economy we see that the effect of a PLA in San Francisco would have a construction cost increase range from 0% to 3%.

In locations where union presence is lower than the national average (Denver CO, New Orleans LA, and Orlando FL), we estimate that PLAs will increase project labor costs and thereby increase the projected total construction cost. In both a poor and stable economy in these cities, this construction cost increase ranges from 5% to 9%.

2. Introduction

Purpose

This report has been prepared for the Department of Veterans Affairs (VA), Office of Construction & Facilities Management. Its purpose is to provide the VA with an opinion on the potential cost, schedule and other impacts associated with the use of Project Labor Agreements (PLAs) on VA construction projects.

While this report addresses PLAs generally, its scope is focused on five cities where the VA has upcoming projects. These cities are Denver CO, New Orleans LA, New York NY, Orlando FL and San Francisco CA.

Background

On February 6, 2009 President Obama issued Executive Order 13502, entitled "Use of Project Labor Agreements for federal Construction Projects" to encourage agencies to use Project Labor Agreements (PLAs) in certain federal construction projects with a total cost to the government of $25 million or more. The Executive Order only encourages the use of PLAs in such large scale projects, it does not mandate them:

> *"Executive agencies may, on a project-by-project basis, require the use of a project labor agreement by a contractor where use of such an agreement will ... advance the federal Government's interest in achieving economy and efficiency in federal procurement."*

Under the Order, the federal government cannot currently compel a contractor to enter into an agreement with any particular labor organization or owner, and the Order does not explicitly exclude non-union contractors from competition. The Order is effective immediately. However, it gives the FAR Council 120 days to take whatever action is required to implement the Order. This Order repeals President Bush's Executive Order numbers 13202 and 13208. Those Executive Orders prevented federal agencies and other recipients of federal funding from requiring or prohibiting contractors from signing union-only PLAs as a condition of performing work on federal projects.

PLAs are pre-hire collective bargaining agreements that govern wages, benefits, work rules, and other terms and conditions of employment for specific projects. Typically the government agency makes it a bid requirement that every contractor and subcontractor be either a negotiating party or signatory to the PLA. PLAs usually prohibit the parties on the project from engaging in strikes, lockouts, or other work disruptions.

President Obama's PLA Executive Order allows federal agencies to consider the use of PLAs where PLAs will "(i) advance the federal government's interest in achieving economy and efficiency in federal procurement, producing labor-management stability, and ensuring compliance with laws and regulations governing safety and health, equal employment opportunity, labor and employment standards, and other matters, and (ii) be consistent with law." The Order goes into effect immediately, but it also specifically directs the Office of Management and Budget and the Department of Labor to provide recommendations within 180 days as to whether the Order should be broadened.

The VA owns and operates a nationwide system of health care facilities dedicated to serving veterans of U.S. military services. The VA spends approximately $1 billion per year on major construction and alteration of facilities. It is therefore imperative that the VA keep abreast of the potential impact PLAs may have on major construction projects throughout the country in order to maintain a high level of confidence in cost projections and to avoid budget shortfalls.

Methodology

In preparing this report, Rider Levett Bucknall assessed the potential cost, schedule and other impacts associated with entering into PLAs as compared to the existing prevailing wages in five cities identified by the VA, including Denver CO, New Orleans LA, New York NY, Orlando FL and San Francisco CA.

Rider Levett Bucknall took into account all known local, national and international factors across a broad range of trades and services. Data was gathered by conducting rigorous research and holding interviews with selected individuals representing general contractors, subcontractors, builders' associations, government, local unions and others with extensive knowledge of construction activity and the use of PLAs in each city. Interviews were focused on gathering information, data and opinions regarding the use, efficacy and impacts of using PLAs in the current poor economic cycle being experienced (in the U.S. and globally), as well as evaluating the effect when the economy stabilizes.

While this report attempts to quantify the potential cost impact of using PLAs on future projects in various cities, Rider Levett Bucknall affirms that the projections included herein are ultimately *estimates* based on our professional opinion. As it relates to cost, our methodology in preparing this report has been to conduct extensive research, interview individuals to better understand their experience with PLAs, seek their opinions regarding cost impacts on prior projects, and estimate the cost impact for future VA projects based on the collective research and opinions gathered in this effort.

However, the cost impact of using a PLA is nebulous. Each construction project is unique, with a broad array of factors contributing to cost. Whether or not a PLA is utilized on any given project may impact the overall cost, but the magnitude of this cost differential is typically vague, arguable and difficult to isolate. Construction costs are influenced by the city in which they are built, the current economic and labor market conditions, and the quality of the project team that guides their design and construction.

Ultimately, the use of PLAs ***is*** a factor that contributes to construction costs. In this report, Rider Levett Bucknall provides its professional opinion regarding the quantifiable impact of PLAs in various cities, based on extensive research and interviews, and drawing upon its history and experience as a professional construction consultancy.

3. Overview of Project Labor Agreements

What is a PLA?

Project Labor Agreements (PLAs) are collective bargaining agreements prevalent in the construction industry. They establish the terms and conditions of employment for a specific project through an arrangement between owners / contractors and organized labor groups. PLAs outline terms and conditions of employment for all contractors and subcontractors working on a project, whether they are normally union or non-union contractors.

PLAs typically contain three key provisions:

1) A no-strike provision that prohibits work stoppages and allows work to continue on the project during any strike over local contract negotiations;

2) Specific wage, benefits and working condition requirements for all workers on the project, as outlined by the local unions and / or prevailing wage requirements; and

3) Defined procedures for dispute resolution.

The scope of PLAs varies widely. While many are simply no-strike agreements, others contain requirements for local hiring, scheduling, work rules, employment of minorities, or the general staffing of projects.

Benefits of PLAs

Based on interviews and background research, several factors are commonly cited as the benefits of PLAs:

1. Stable Supply of Qualified Labor – PLAs provide the framework for a stable supply of qualified labor, which contributes to the likelihood of on-time completion. By entering into a PLA, an owner can contractually guarantee that his/her project will have a consistent supply of manpower to complete the project on schedule. This is especially valuable for long-term projects subject to potential labor shortages resulting from market boom / bust cycles.

2. Protection Against Strike – In cities where unions are pervasive, the PLA is a critical tool to insulate the project from strikes or work stoppages that could delay project completion. Strikes and work stoppages are typically part of union strategies to negotiate multi-year union contracts. Without a PLA, owners are subject to the increased risk of strikes and work stoppages resulting from the renegotiation of each union contract. Further, the conditions and timing for various trade union contracts are not consistent or aligned, so the owner could be subject to strikes by each individual trade union at various points throughout the project.

3. Cost Certainty – PLAs can provide defined rates for various types of labor, giving owners more certainty regarding costs for the duration of the project. This is especially valuable for long-term projects, phased projects and projects with propensity for extensive change order work, as the hourly rates are defined up-front, allowing owners to budget with more certainty.

4. Increased Productivity Without Cost Premium – PLAs allow owners to set various working terms and conditions, including shifts and work hours. By establishing the shifts, work hours and commensurate compensation up front, owners can realize increased productivity without paying increased rates for extended hours or overtime pay. In essence, the PLA allows the owner to capitalize on the fact that the project requires an attractive long-term labor commitment, offering an extended period of stable work for labor and defining standard work hours regardless of the work hour rules in a city. Furthermore, a PLA allows owners to streamline and set work hours, rules, shifts, and conditions consistently throughout the various trades involved in the project. Without the PLA, these factors would vary significantly between the trades, as each union's requirements are different. Effectively, the PLA is a tool to optimize the scheduling of labor on a project, resulting in greater efficiency and productivity.

5. Defined / Expedited Dispute Resolution Process – most PLAs outline a standardized procedure for resolving disputes between owners and labor. This provision results in fewer complications or interruptions to the work.

6. Access to Additional Skilled Labor - PLAs and the unions generally associated with them have prompt access to additional skilled labor. This can be important if projects are suffering schedule delays or specific complexities require additional staff at short notice. A counter argument to this is that for very large projects in areas with less union presence, this labor will generally come from out of the area and there will be little benefit for local contractors and workers.

7. Better Protection Against Using Illegal Labor - Some interviewees believe that the PLAs requirement for workers to be routed via union hiring halls strengthens the owner's ability to control the documentation status of workers and ensure that only authorized workers will be involved on their projects. Ultimately, this responsibility lies with the hiring authority, whether it is a union or non-union general contractor.

Criticisms of PLAs

1. Union Effect on Non-Union Labor – While *union-only PLAs are against the law,* PLAs are advocated, created and implemented by collective bargaining groups, which are typically dominated by the trade unions. The structure of most PLAs is that non-union contractors are required to enroll their staff in union hiring halls and pay union contributions and pensions. There are four significant impacts of this requirement:

    a. The number of non-union contractors 'core' employees who are qualified and willing to be assigned to the project are potentially limited, thereby reducing the supply of non-union labor;

    b. Per-employee contributions by non-union contractors to union benefits are often far greater than those of union contractors (and generally non recoverable by employees at project completion);

    c. While in the hiring halls, undue pressure can be placed on employees to join the unions; and

d. Non-union contractors are disadvantaged in that they have little experience with their construction crews and team composition.

2. Cost Increases – While PLAs have been advocated as a mechanism to control and fix costs over the life of a long duration project, many studies have reported that PLAs add to bid and final construction costs. The Beacon Hill Institute in three separate studies have concluded PLAs added to bid costs by 18-25% in New York State schools[1] (with the larger variance on larger sized projects); added actual costs of 18% in Connecticut Schools[2] and added 14% to the bid cost in Massachusetts[3]. However, these studies did not address the cost impact of scope, timing, market, schedule or quality variables. These variables would contribute to increased costs, thereby reducing the level of cost increases that Beacon Hill argue are all strictly attributed to the PLA.

3. Schedule –Arguments against PLAs related to schedule center on the work rules which govern the composition of a contractor's team and the task allocation, zones and hours of work. If the PLA is structured to reflect the typical union work hours, shift structures and rules, without responding to the specific needs of the owner and the project, then the owner will likely realize an extended schedule requiring additional staff and / or overtime.

4. Limits Numbers of Responsible Bidders – Studies have shown, and interview responses confirm that in locations where unions are less prevalent, PLA agreements will restrict and reduce the number of bidders. Further studies by Carr in Sept 2000[4] estimate a bid cost increase of 3.2% per each loss of bidder. However counter argument against this cost percentage is that other project complexities contribute to this delta.

5. Women and Minority Contractors – These contractors are generally smaller contractors, commonly non-union, and therefore less able to compete on PLA projects requiring union affiliation, contribution and involvement. In certain cases, PLAs have been shown to exclude these groups, with instances of harassment. In some cases, minority targets are not met. [5]

[1] PLA in Public Construction Costs in New York State. Beacon Hill Institute. April 2006.
[2] PLA and the Cost of Public School Construction Projects in Connecticut. Beacon Hill Institute. Sept 2006.
[3] PLA and the Cost of Public School Construction Projects in Massachusetts. Beacon Hill Institute. Sept 2003.
[4] Analysis of Impacts on Jefferson County Courthouse Complex through PLAs. Paul Carr. Sept 2000.
[5] Union-only PLAs: The Public Record of Poor Performance. Maurice Baskin Esq. 2005

Factors Influencing Efficacy of PLAs

Several factors contribute to the efficacy of PLA's, as follows:

1. State of the economy – has been shown to influence PLAs, particularly in the 1980s and more recently in the poor economy of 2008/2009. In areas where construction is influenced by unions, PLAs were a mechanism to provide concessions against some union requirements and thereby created lower construction costs to owners. In stable times, where the market seeks qualified, quality labor, PLAs were promoted as a method to ensure a steady supply of qualified labor. Although PLAs may potentially cost a premium over open-shop contractors, this premium was touted to be offset by a quality end product.

2. Size of project ($) – larger sized projects require greater quantities of skilled personnel over a long period in order to meet the schedule requirements. PLAs have been implemented to facilitate a steady supply of qualified workers at pre-determined rates, hours and work conditions.

3. Duration of project - collective bargaining agreements expire periodically, requiring renegotiation and frequently involving labor strikes by the unions as a negotiating tactic. Projects with extended durations are susceptible to delays resulting from these strikes, and can benefit from a PLAs no-strike clause. The PLA essentially insulates the project from these factors.

4. Local labor market (union or non-union) – in strongly unionized areas, where union contractors are likely to be the dominant players in bidding and performing on large projects (such as New York) PLAs can offer benefits with an up front contract primarily between the unions. Recently, similar to the 'Stop-Loss PLAs' of the 1980s, these PLAs offered concessions to union rates and rules but importantly cover the duration of a project. In non-union areas, PLAs are seen as a negative, non-competitive mechanism where open-shop contractors (and employees) are dictated terms which they find unworkable in practice and prevent them from managing their business and project teams in a way that is best for the project.

5. Contractor and Subcontractor Buy-In – When the contractor and subcontractors have the ability to participate in the negotiation of terms and conditions of the project, their morale may be improved and workability of the PLA increased (specifically in non-union cities if PLAs are mandated). Given most, if not all PLAs are created between the Owner and the unions *prior* to bid, it is difficult to see how there may be subcontractor buy-in unless shortlisted subcontractors are given the opportunity to amend the PLA agreement prior to formally submitting their bid. Buy-in is an issue which needs to be addressed as the PLA can be crafted to include provisions which can be more contractor and subcontractor 'friendly', which is vital to their success - particularly in 'non-union cities'.

6. PLA signatories - an important factor of PLAs is that ALL unions do not necessarily sign up to the PLA. To ensure a PLAs success, all relevant local unions must be signatory to

the agreement otherwise a 'rogue union' may complicate the project and the perceived no-strike benefit of a PLA may be lost.

Evolution of PLAs

PLAs have evolved over the years from 'Old school PLAs' to 'Stop-Loss PLAs' and more recently 'Market-Share PLAs'[6]. This has developed as follows:

- Old school PLAs were in place up until the 1980s for complex, long lasting projects, often in rural areas (such as dams, nuclear plants etc) and having the unions agree the work arrangements and rates up front and *for the duration of the whole project,* including a no-strike clause was advantageous for both public and private projects.

- Stop-Loss PLAs during the construction downturn in the 1980s took on a role to stop the loss of jobs and "deliver quality work at low prices to demanding customers" by offering union wage and benefit concessions.

- Market-Share PLAs evolved in the 1990s with the construction economy booming for a decade when there was low unemployment and lower apprenticeship training. PLAs became prevalent on smaller projects and emerged "as a new key instrument for providing users with an uninterrupted supply of qualified workers and in helping unions to stabilize or expand their share of the construction market".

International PLAs

Canada

A large PLA has recently been agreed to for a large aluminum refinery modernization at Kitimat, British Columbia, Canada. Rio Tinto Alcan in an August 28, 2008 statement[7] confirmed a PLA has been signed for the $500mil+ project with Bechtel as the construction manager. This refinery is at the end of Queen Charlotte Sound, adjacent to Indian tribal lands, approximately 900 miles from Vancouver by car and 600 miles by boat. Importantly, this project is in an isolated area, requires specific trade skills for a refinery, and is a large, long term undertaking – all consistent with the historic reasons to establish PLAs in the U.S. in the 1940s.

Australia

In the 1980s and early 1990s, Australian construction saw the development of 'site allowances' in the state of New South Wales (containing the country's largest city Sydney). In this system major contractors agreed with the unions basic rates of pay, while over and above these wage award agreements were specific site allowances between the unions and the project/main contractor. These additional union costs ranged from between $1.20 and $2.50 per hour, amounting to approximately 3% - 7% of labor costs (given the average wage at the time was approximately $35.00) and around 1.5% – 3% to overall construction cost. In 1994 these agreements were subsequently outlawed by the NSW State and federal Government as they were deemed not related to productivity.

[6] Belman, Bodah & Philips. ELECTRI International Report on PLAs. 2007
[7] www.riotintoalcan.com

4. Case Study A: Denver, Colorado

Overview

In Denver, senior representatives of the following firms and organizations were interviewed by phone, to gain an understanding of their experience with and opinion on the potential cost implications in the use of PLAs on construction projects:

- Associated General Contractors (AGC) of America
- Associated General Contractors (AGC) of Colorado
- Associated Builders and Contractors (ABC) Inc., Rocky Mountain Chapter
- Building & Construction Trades Department AFL-CIO (American Federation of Labor and Congress of Industrial Organizations)
- Three, Denver-based large general contractors
- One, Denver-based large electrical subcontractor
- One, Denver-based large mechanical subcontractor

Various other Denver organizations were contacted to obtain specific construction industry information such as current labor rates, union membership numbers, etc. These included:

- Plumber's Union Local 3
- Denver Carpenter's Union Local 55
- Building & Construction Trades Department AFL-CIO
- Union Membership & Coverage – unionstats.com
- Denver Sheet Metal Worker's Union Local 9
- Denver International Brotherhood of Electrical Workers (IBEW) Local 68
- Denver Brick and Block Layer's Union Local 7

Local Labor Market Characteristics

Colorado has not passed 'right-to-work' legislation which traditionally has limited the influence of trades unions on the employment of construction labor. Despite this, union membership among construction employees remains low, between 8% and 10% depending upon the information source[8].

Labor union activity is not widespread although it is a presence and opinion suggests several organizations such as Colorado Building and Construction Trades Council (which purports to be comprised of twenty-three craft local unions) and the IBEW union might very likely become more proactive in pursuing organized labor objectives through the implementation of collective bargaining and the use of PLAs promoted by Executive Order Number 13502.

[8] Note www.unionstats.com quotes 8.0% union membership across Colorado state, with 9.6% unionism in Colorado construction.

Davis-Bacon Prevailing Wage Rates and Current Union Rates

A comparison between prevailing wage rates for Denver County and those of five union organizations is detailed as follows:

Trade	Union	Union Rate	Prevailing Wage Rate
Plumbers & Pipe Fitters	Plumber's Union Local 3	$33.02	$33.02
Carpenters	Carpenter's Union Local 55)	$34.27 + $1.18 Dues	$34.24
Sheet Metal Workers	S/M Worker's Union Local 9	$41.14	$40.62
Electricians	IBEW Local 68	$42.67 + $1.55 Dues	$40.82
Bricklayers	Brick & Block Layers Local 7	$32.02	$32.02

Currently, it appears that there is no significant difference in wage rates determined by unions compared with prevailing wage rates for straight-time work (with the exception of electricians where union rates are $3.40, 8.3% higher). However, this table is not a predictor of actual wage rates eventually agreed to in a PLA negotiation on any specific future project but in many projects union rates have been seen as the actual PLA rates but fixed for the project life[9].

Effect on Construction Costs Derived from Local Research

Labor Costs

Interview responses to the question as to *"whether a PLA would affect labor costs"* consistently gave the opinion that PLAs would increase costs. Of particular concern was that if the terms of the PLA agreement became strongly union focused this would deter local non-union subcontractors from bidding on the project for various reasons. This holds significance due to the fact that the local workforce is 91% non-union. This may result in a prevalence of out-of-state bidders, who would need to incorporate additional monies into their bids to cover costs for such things as travel, housing, additional administration etc which would add a premium on the labor cost for the project.

Understandably, a major component of a PLA will be the determination of wages, hours and fringe benefits. Wages and hours are subject to well established 'labor laws' however, fringe benefits are likely to be more unpredictable. The presumption is that a labor organization would be negotiating for greater 'benefits' for their members rather than less. Issues could include vacations, pensions, insurances, sick pay, severances, training, etc. Agency dues would certainly be included in the PLA agreement.

[9] Belman, Bodah & Philips. ELECTRI International Report on PLAs. 2007 Page 17.

Experience suggests that these additional negotiated or bargained benefits come at a price to the owner which would be greater than the 'normal' cost of labor procured through open market competition under Davis-Bacon prevailing wages.

Ultimately, any change in labor cost over utilizing prevailing wage rates is likely to be due more to the negotiating skills of the labor representative than anything else.

Qualified/Skilled Labor

With 91% of the construction workforce being non-union, our research suggests that should a PLA be implemented which resulted in a heavily unionized project, construction would suffer as the available pool of the most qualified workers would be significantly reduced. The opinion of one interviewee was that to be successful in an open market environment, it was essential that contractor's currently trained their workforce (in state approved schemes) to a level where they were highly skilled, qualified and efficient and this produced 'better' workers than those obtained through labor halls.

A representative of a general contractor suggested that with a significant volume of non-union subcontractors deterred from bidding on a project, trades that require a high number of employees may be forced to carry out a project with considerably less skilled workers.

Productivity

From our research and interviews it is clear that labor productivity is an issue that comes into play when considering PLAs although we can come to no clear conclusion. The core of the matter centers on the question whether union or non-union labor has greater productivity for which there is only anecdotal evidence from either side.

Bidding

The overwhelming sentiment expressed in interviews was that implementing a PLA on a project in Denver will, without question, lead to an increase in the cost of construction.

Interviewees from two large general contractors and one large electrical subcontractor sighted various reasons for this opinion which are consistent with those frequently narrated in publications written by opponents to the use of PLAs.

Our interviews clearly established that one of the leading implications in the use of a PLA is that it will undoubtedly result in a significant reduction in true open market competition resulting in higher costs to the owner. Interviewees did not offer empirical evidence justifying their opinion of increased costs however the implications of poor competition when bidding projects have been well documented. The Associated Builders and Contractors Inc., Rocky Mountain Chapter (ABC RMC) is openly opposed to PLAs for this very reason. The ABC RMC represents construction workers who are 91% non-union. Their fear is that instigating a PLA on a project led by a labor organization, would by design, develop into a 'union-only' environment excluding 91% of their membership from bidding the project.

Supporters of PLAs dispute the argument of these 'union-only' implications by stating that the language in a PLA cannot bar non-union contractors from being included in a labor agreement. The labor agreement in place for the construction of Xcel Energy's Comanche 3 new generating unit in Pueblo, Colorado, suggests that the opinions of the interviewees above opposed to PLAs

might be well-founded. In information provided by Xcel Energy, the PLA reached between Xcel Energy and the Colorado Building Trades Council, with support from IBEW 68, mandates that only union labor will be utilized on the project and that a preference will be given to local workers.

Interviewees (generally from an open-shop background) suggested the effect of PLAs would be a cost increase in labor costs ranging from 10 to 20%.

Other Factors

Construction delays, labor strikes and other disputes experienced by a project would have a significant impact on the final cost of construction. Information gathered from our interviews suggests that any influence a PLA may have regarding these issues depends on the language within a specific agreement. It was suggested that with a 'heavily unionized PLA' jurisdiction of work disputes can occur between different unions within the PLA which leads to delays to schedule.

Potential Cost Impact from Use of PLAs

It is acknowledged that this is not an exhaustive study into the effects a PLA might have on a future VA construction project in Denver. However, after researching the subject, interviewing industry leaders, and utilizing our knowledge of the construction industry, we believe we can offer an estimate as to the premium likely to be experienced on a project in Denver that enters into a PLA as opposed to a project subject to prevailing wages.

We estimate PLAs will have the following effect on CSI cost divisions:

Division 1, General Conditions – General contractors will likely incur cost in managing all subcontractors (possibly to different degrees) should many of the potential issues anticipated by utilization of a PLA agreement on a project in Denver materialize. We suggest this could amount to an additional 20% in labor cost.

Divisions 2 through 14 – Should the PLA develop into a 'unionized agreement' this will exclude many non-union companies (who will simply refuse to bid) and we believe this reduction in bidding competition will increase bid prices in Denver. PLA union presence requiring employer contributions to union pension plans in addition to the employer's current schemes will also add another 5%. On average this could amount to a 15% to 20% labor cost premium.

Divisions 15 and 16 – In Denver these divisions currently have stronger union market presence, and with the heavy requirement on these trades in a hospital facility, research suggests that in these divisions concessions may be less and labor rate increases are possible given these representatives are more influential, proactive and experienced in labor negotiations on behalf of their members. Combined with *current* work rules (which we believe would remain similar) for the hours and makeup of union structured teams we suggest this could amount to a 20% premium.

Overall Cost Impact – Model Project

Under the CSI cost breakdown for a 'model project' as described in Section 10, we estimate cost impacts in the current economy as described below.

Denver - CO RLB Index 12,309

	Division	Division Cost	Non labor%	Labor%	Labor % chg. due to PLA	PLA Cost	Division Change
1	General Conditions	11,174,000	60%	40%	20%	12,067,920	8.0%
2	Site work	500,000	70%	30%	15%	522,500	4.5%
3	Concrete	786,000	70%	30%	15%	821,370	4.5%
4	Masonry	927,000	50%	50%	20%	1,019,700	10.0%
5	Metals	7,265,000	92%	8%	20%	7,381,240	1.6%
6	Wood and Plastics	106,000	55%	45%	20%	115,540	9.0%
7	Thermal and Moisture	970,000	60%	40%	15%	1,028,200	6.0%
8	Doors and Windows	3,261,000	60%	40%	15%	3,456,660	6.0%
9	Finishes	4,819,000	40%	60%	15%	5,252,710	9.0%
10	Specialities	836,000	75%	25%	15%	867,350	3.8%
11	Equipment	200,000	75%	25%	15%	207,500	3.8%
12	Furnishings	1,520,000	90%	10%	20%	1,550,400	2.0%
13	Special Constr.	200,000	60%	40%	15%	212,000	6.0%
14	Conveying Systems	1,100,000	75%	25%	15%	1,141,250	3.8%
15	Mechanical	8,089,000	65%	35%	20%	8,655,230	7.0%
16	Electrical	6,414,000	60%	40%	20%	6,927,120	8.0%
		48,167,000				51,226,690	6.4%

Summary

We consider that a VA project constructed in Denver utilizing a Project Labor Agreement could experience a construction cost premium of approximately 6.4%. We see this premium unaffected by a stable or poor economic cycle.

5. Case Study B: New Orleans, Louisiana

Overview

The following organizations were interviewed to compile this report:

- Associated General Contractors (AGC) of Louisiana
- Associated Builders and Contractors (ABC) New Orleans/Bayou Chapter
- Three, New Orleans-based, large general contractors
- Two, New Orleans-based, large subcontractors

Many other local organizations were contacted but declined to participate in this study.

Local Labor Market Characteristics

Louisiana is one of 22 'right-to-work' states. As such, New Orleans has statues allowed under the Taft-Hartley Act prohibiting agreements between trade unions and employers making membership, payment dues or "fees" a condition of employment, either before or after hiring.

President George W. Bush issued proclamation 7924 to indefinitely suspend the Davis-Bacon Act in Louisiana following Hurricane Katrina. However, on October 26th, 2005 this emergency order was rescinded and New Orleans currently has a requirement for paying prevailing wages on federal projects.

Data indicates that in New Orleans is between 90% to 95% non-union. This range was confirmed by representatives of the ABC and AGC[10].

Louisiana has the distinction of being one of the only states to have shown growth in construction employment in the past year, published data suggests a year on year increase of around 7.5%. This is primarily due to the ongoing demand for labor from New Orleans and Gulf Coast rebuilding projects.

The effects of the current recession are expected to be less than most other areas of the country with a shorter downturn and quicker recovery period anticipated.

Legality

Representatives of both the ABC and AGC questioned the legality of public PLAs in the state of Louisiana. State Law LA.R.S. 23:984, prohibits any governmental body imposing any zoning, contractual, permitting or licensing condition on an employer or employee which limits their "full freedom to act" under the federal labor laws. This law is aimed at prohibiting so-called "Labor Peace Agreements" where a governmental employer (such as a city council) may require that it will not oppose the unionization of its employees, or will agree to accept a standard union contract, in exchange for issuing a building permit or zoning variance.

[10] Refer www.unionstats.com. Louisiana has 4.6% unionization across the state and 4.3% in private construction. There may be a higher percentage within the city of New Orleans.

Historical PLA Projects

There have been a limited number of large private PLA projects executed in the past 10 years, including:

- Harrah's Poydra's Hotel - $142M new build (discussed below)
- Lowes Hotel- New Build, 285 room, completed in 2003, total cost $65M
- Harrah's Casino- New Build, 115,000SF, completed in 1999, total cost $120M

Harrah's Poydra's Hotel
Harrah's Poydra's Hotel, is the most recent PLA project in New Orleans. This $142M new-build project was completed in 2008.

A general contractor involved on the project offered the following opinions:

- The City of New Orleans instigated the PLA. The main reason for its use was due to the fact the casino was to be operated with union labor.
- The effect of the PLA was an increase of between 10 to 15% on the total construction cost.

Davis-Bacon Prevailing Wage Rates and Current Union Rates

The VA project will be within the Davis-Bacon zone for Orleans County, Louisiana. Davis-Bacon rates for the major trades (including fringes) in New Orleans are:

- Electrician $33.33
- Ironworker $26.22
- Pipefitter $33.20
- Carpenter $14.70
- Laborer $10.60

It should be noted, that based on our research most non-union contractors pay their employees more than Davis-Bacon rates. Several contractors indicated that non-union base rates are in line with union base rates in most cases.

Effect on Construction Costs Derived from Local Research

Labor Costs

Local opinion consistently states that a PLA would increase labor costs. As New Orleans is approx 90 to 95% non-union, there is a concern that large out-of-state union contractors, who are able to execute the job and will agree to a PLA, will incorporate items such as travel and housing costs into their bids.

One local contractor commented that, many non-union contractors in New Orleans have their own benefits package. Under a PLA there is generally the requirement to also contribute to union benefits which therefore results in duplication. Also, given unions require a number of years of membership for these benefits to be distributed, these benefits are 'lost' to the non-union contractor and their employees.

The feedback received suggests that labor costs will increase in New Orleans between 10% and 25% as a result of implementing a PLA.

Qualified/Skilled Labor Availability

Due to the New Orleans rebuilding projects, there is a relatively strong demand for labor. This combined with a workforce that is 90% to 95% non-union suggests that a large project such as the proposed VA hospital would suffer from labor shortages in the local area. A representative at the ABC indicated that there is simply not the number of in-state unionized workers required to build a large project all union. Therefore, it can be concluded that a large percentage of out-of-state workers would have to be used on a large project in New Orleans. This is likely to increase the construction cost as items such as travel and accommodation are incorporated in labor rates.

Productivity

The perception of one local contractor is that the union will query all non-union workers qualifications regardless of their experience and years in the industry simply because they are not union certified or trained. This will have the effect of reducing the available in state skilled workforce. Unions claim that their apprenticeship programs result in more efficient and productive workers, however there is no statistical data to confirm that this union labor is indeed more, or less productive in New Orleans.

Bidding

A representative at the AGC suggested that New Orleans contractors would be opposed to a PLA on any federal project. The feeling is that a project of the magnitude of the VA hospital would lend itself to large, out-of-state union contractors having the upper hand. The general feeling is that a PLA will exclude 90%-95% of the market, reducing competition and increasing costs. As a result, there is a perceived cost premium associated with bidding a PLA project in New Orleans.

Other Factors

Contractors were invited to offer their opinions on what care should be taken if PLAs were to be pursued in New Orleans:

- "They would have to be negotiated as Contractor friendly and user friendly. The Contractor does not need to be supplied employees only from the union. The main work force needs to come from the regular staff and be supplemented by the union and not the other way around. Also the employees do not have to give up their benefits package just to work on the VA project. Those without a benefits package could get benefits from the union system."

- "Allow non-union firms to use their core employees and allow them to maintain their own fringe benefits because otherwise they would be double paying."

When asked for closing comments:

- "It would be enough to just mandate Davis-Bacon wages on the VA project here in Louisiana."
- "New Orleans is not a good market for PLAs"

Potential Cost Impact from Use of PLAs

We estimate PLAs will have the following effect on CSI cost divisions:

Division 1, General Conditions – may incur a 30% cost increase to account for the perceived risk and issues of managing a PLA project in New Orleans where there is currently a low union presence.

Divisions 2 – 16 - Generally, we would expect an increase of 15% through reduced competition and the use of out-of-state workers. Based on our feedback, several trades; masonry, electrical, mechanical and carpentry will be more impacted as the differential between non union and union rates is greater in these trades. This is represented by a 20% increase.

Overall Cost Impact – Model Project

Under the CSI cost breakdown for a 'model project' as described in Section 10, and factored for New Orleans, we estimate cost impacts in the current economy as described below.

New Orleans - LA	RLB Index	12,250				
Division	Division Cost	Non labor%	Labor%	Labor % chg. due to PLA	PLA Cost	Division Change
1 General Conditions	11,120,440	60%	40%	30%	12,454,893	12.0%
2 Site work	497,603	70%	30%	15%	519,996	4.5%
3 Concrete	782,233	70%	30%	15%	817,433	4.5%
4 Masonry	922,557	50%	50%	20%	1,014,812	10.0%
5 Metals	7,230,177	92%	8%	15%	7,316,939	1.2%
6 Wood and Plastics	105,492	55%	45%	20%	114,986	9.0%
7 Thermal and Moisture	965,351	60%	40%	15%	1,023,272	6.0%
8 Doors and Windows	3,245,369	60%	40%	15%	3,440,091	6.0%
9 Finishes	4,795,901	40%	60%	20%	5,371,410	12.0%
10 Specialities	831,993	75%	25%	15%	863,193	3.8%
11 Equipment	199,041	75%	25%	15%	206,505	3.8%
12 Furnishings	1,512,714	90%	10%	15%	1,535,405	1.5%
13 Special Constr.	199,041	60%	40%	15%	210,984	6.0%
14 Conveying Systems	1,094,727	75%	25%	15%	1,135,780	3.7%
15 Mechanical	8,050,227	65%	35%	20%	8,613,743	7.0%
16 Electrical	6,383,256	60%	40%	20%	6,893,917	8.0%
	47,936,124				51,533,359	7.5%

Summary

We consider that a VA project constructed in New Orleans utilizing a Project Labor Agreement could experience a construction cost premium of approximately 7.5%. We see this premium unaffected by a stable or poor economic cycle.

6. Case Study C: New York City, New York

Overview

The discussion and conclusions represents Rider Levett Bucknall's professional opinion, based on information from the following sources:

- Review of existing studies and academic papers in the public domain
- Legislation, judicial opinion, and existing governmental practice
- Rider Levett Bucknall collective experience and expertise
- Telephone interviews with key industry experts, stakeholders and organizations:
  - Vice President of a Top 5 New York City Construction Management Firm
  - Director of Large New York City Developer
  - Vice President of New York City Contractors Association
  - Executive with New York City Public Agency (major construction programs)
  - Director in School; of Labor and Industrial Relations, Major New York Private University
  - Spokesperson for a New York Union Trades Council

This study segment concentrates on the New York City metropolitan area, generally including the five boroughs of New York City, Nassau and Suffolk counties (Long Island), and portions of Westchester County; essentially areas within 25 miles of New York City. While in close proximity, New Jersey and Connecticut have been excluded, as state laws may, to some extent impact the employment of Project Labor Agreements (PLAs).

Local Labor Market Characteristics

New York does not have 'right to work' laws and New York City and the vicinity are highly unionized in terms of both private and public sector construction projects. Our research indicates that more than 80% of all projects valued above $5 million are executed by union labor. That percentage increases as the project value goes to $25 million, which is one of the parameters of the Executive Order.

Legality

Under New York State case law derived from the Tappan Zee Bridge Project a PLA employed on a public project MUST demonstrate two critical elements; 1) it must show a fiscal advantage to the public and 2) it must be non-discriminatory. This is irrespective of all the other potential advantages of PLAs. In other words, if the PLA does not save money or if it discriminates in terms of hiring or bidding, it cannot be used.

Davis-Bacon Prevailing Wage Rates and Current Union Rates

The base pay rates of unions are similar to Davis-Bacon rates for normal straight-time work. Our review of 9 union contracts revealed that Davis-Bacon base rates ranged from 10.2% below union rates to parity with union rates. Union fringe benefits and assessments were higher than Davis-Bacon figures. For purposes of this study we extracted the 'union-only' fringes and assessments, such as apprenticeship training, and dues check-off, and assumed that pension and other benefits were the same for both. In this way we could isolate the union 'premium'

costs. As is the case with most PLAs reviewed for this study, PLA rates were based on union rates with specific concessions from normal union scales, often as a freeze on base wages for the project, a reduction of holidays, a change in apprentice ratios and possibly reduced overtime pay.

Due to the previously mentioned heavy union presence, most studies in this area compare PLA projects with other union projects not utilizing a PLA. Regional trade councils, when touting the benefits of PLAs, will often quote potential savings in terms of conventional union contracting methodology. This is due to the fact that larger projects will likely be built union. With union projects starting out with higher base rates and fringe benefits, PLA projects will generally compare favorably. Comparing PLA projects with prevailing wage (non-union), will likely reflect a smaller potential savings, as prevailing wage projects start with slightly lower base rates and fringe benefits.

Effect on Construction Costs Derived from Local Research

Labor Costs

New York City construction has employed PLAs in both the public and private sectors for many years. The reasons for this relatively wide spread use of PLAs varies. One executive with a large New York developer told us that they use PLAs on all their projects, basically because they provide a management structure *which ensures that the project will run smoothly with little or no interruption.* A city agency representative cited that they use PLAs because the nature of their work often *involves a great deal of "off hours", which makes custom tailored PLAs very cost effective.*

What we have learned, however, is that normal, straight-time journeyman labor is not what makes PLAs attractive. In New York, where the vast majority of the work is done on a union basis anyway, cost advantage lies often in what we will call second tier labor issues as well as less quantifiable intangible issues, such as:

- Second and third shift costs
- Make-up days
- Non-standard 40 hour work weeks
- Scheduled overtime

The examples above represent opportunities for significant cost saving in a well structured PLA, but are not as clearly discernable as savings if one only compares union scale with prevailing wage – given (as discussed above) that federal Davis-Bacon prevailing wage and union scale are almost identical.

As an example of the savings attainable, we studied the PLA used by the New York City Schools Construction Authority (NYCSCA) [11]. This PLA was established in 2004 and will remain in effect until the program completion in 2009 - if not renewed. Some elements of this PLA include:

- Four day **or** five day forty hour work week at straight time rates. This essentially saves overtime rates (a 50% premium) on 8 hours if there are 4 x 10 hour shifts.

[11] Total program value is approx $13.1 billion. All of the refurbishment projects - valued at $6.7 billion came under a PLA agreement.

- Shift differential at a flat 5% premium for both second and third shifts. Normal shift differential can be anywhere from 15% to 25%.
- Recognized six standard holidays' verses the normal eight to ten.
- Provides for a 3:1 apprenticeship ratio. Normal ratios range from 4:1 to as much as 5:1. Apprentices are paid significantly less than journeymen and can still be extremely work-effective.

Prior to it's' implementation in 2004, this PLA was studied by Hill International[12]. The study was intended to measure the effectiveness of the provisions above and concluded that a PLA would create a reduction of 18.7% in labor cost (roughly $474 million) over the 5 year life of the PLA. In 2008, a follow-up study, also by Hill was carried out analyzing four years of actual project data. The new study revealed actual labor cost savings of roughly $221 million (9%). While still significant, this is however half of the 2004 projection. Interestingly, the difference was primarily due to actual construction execution– where less overtime was used than initially planned. This highlights the value of using actual data rather than bid projections, as too many non-PLA and even non-labor variables may enter the equation.

The *Building and Construction Trades Council of Greater New York and Vicinity* (BCTCGNY) has recently completed, with the participation of organizations such as the *Building Trades Employees Association*, a 'Core PLA', which can be implemented by any contractor. Specific provisions of the Core PLA have not been made public as of this writing; however we have learned that many of them are as bulleted above. According to both union and contractor sources the intent of this new Core PLA will be to achieve a 25% reduction in overall labor costs for long duration projects by freezing future wage rate increases and offering overtime concessions.

Qualified/Skilled Labor

In a largely unionized environment such as New York City, with well established union hiring practices and a significant numbers of craft available, a PLA would be advantageous in assuring a supply of qualified labor. With multiple simultaneous major projects common in New York City, the union hiring hall is best suited to ensure labor supply.

At present many of the largest multi-year mega-projects in the area are completed or nearing completion. This includes four (4) new professional sports stadia and one new professional sports arena. New large projects will undoubtedly surface, however most will be in infrastructure or transportation and will be realized as a result of the federal "Stimulus" program. A sample of some major projects planned for New York City in the next ten years includes:

- NJ Transit 4 tube Hudson River Tunnel ($9 Billion)
- Infrastructure for new campus for a major New York City University ($1 billion)
- New World Trade Center complex ($5 Billion)
- 2nd Avenue Subway completion ($4 Billion)

The Core PLAs being proposed by the trades council offers concessions to owners and are designed to relieve the manpower surplus accumulating as a result of the end of a ten-year

[12] Project Labor Agreements in New York State: In the Public Interest. By Fred B. Kotler, J.D., Associate Director of the Construction Industry Program, School of Industrial and Labor Relations, Cornell University. March, 2009

building boom, and put their members back to work. PLAs often provide for priority in accessing available manpower. PLAs may offer the best way to compete for skilled manpower in the next decade. In New York it is unlikely that sufficient quantities of trained non-union personnel would be available

Both the NYCSCA PLA and the BCTCGNY Core PLA provide a significant cost saving provision in the reduction of the apprentice / journeyman ratio. In the skill trades for example, 3rd and 4th year apprentices are capable of performing most tasks at a much lower cost than journeymen.

Productivity

An example offered by an official of the School Construction Authority (SCA) may best illustrate the value of PLAs in New York. When the SCA instituted a PLA covering all their projects, there was a general concern among their cadre of non-union contractors. The contractors feared that the union hiring hall would send them the least desirable workers. Moreover the contractors believed that the union workers were difficult to work with and would possibly sabotage their projects. These concerns manifested initially with higher, non-competitive non-union bids. However within 4 months, the non-union contractors began to appreciate the quality and productivity they were getting from the union craft, and subsequently bids became competitive.

Since New York is predominately union, especially on larger and more visible work, the non-union infrastructure for training and development of craft does not measure up to that of the unions. Union productivity can, in most cases, offset generally minor differences in wage rates.

Bidding

In his March 2009 treatise on Project Labor Agreements in New York State, Cornell University Associate Director in the School of Industrial and Labor Relations, Fred B. Kotler makes the point that “when properly applied PLAs are consistent with New York State competitive bidding laws”. As a second layer of protection the law states that unions cannot lawfully favor their members and discriminate against qualified non-members. Virtually all arguments against PLAs as discriminatory and restrictive have been dismissed by the New York State courts at all levels.

The two biggest factors in determining number of bidders are Bidding Procedures and Market Conditions.

In NYC, the Wicks Reform Act of 2008 allows general contractors to bid under a PLA and waives the requirement for separate prime contracts (such as separating Plumbing, Heating, and Electrical). Therefore PLA projects naturally have fewer bidders as only general contractors, rather than multiple parallel prime subcontractors bid for projects. It is therefore very difficult in New York to compare the effect of a PLA on bid numbers, as this reform reduces the number of bidders on PLAs markedly. However a study by the New York State Division of Budget concluded the Wicks Reform Act is a cost saving measure which is expected to save New York State taxpayers $200 million in 2009, plus another $14 million annually in debt service, by reducing the administration, complexity and overlaps which can occur in having parallel prime contractors on projects.

Market conditions present a simple but time tested equation. In good times, when there is more work, there are fewer bidders. The opposite is true during difficult economic periods such as the present. Contractors become more or less selective depending on the economy and their

financial condition. There are just too many variables here to draw the conclusion that this bidding phenomenon is solely PLA driven.

Potential Cost Impact from Use of PLAs

This study looked at base rates and fringe benefits for nine trade unions and compared these to published Davis-Bacon rates/decisions for New York City and Long Island. In order to consider all the advantages of the PLA, a formula was devised which strongly weights straight-time base labor rates, but also considers issues such as holiday pay concessions, increased apprenticeship ratios, relaxed overtime and shift differential costs, as well as other intangible cost benefits. The formula differs according to trade and is based on Rider Levett Bucknall experience. The resulting cost impact percentages, by trade, were then used to populate the table below.

Overall Cost Impact – Model Project

Under the CSI cost breakdown for a 'model project' as described in Section 10, and factored for New York, we estimate cost impacts in the current economy as described below.

New York - NY RLB Index 19,370

	Division	Division Cost	Non labor%	Labor%	Labor % chg. due to PLA	PLA Cost	Division Change
1	General Conditions	17,583,913	60%	40%	-20%	16,177,200	-8.0%
2	Site work	786,823	70%	30%	-7%	770,299	-2.1%
3	Concrete	1,236,885	70%	30%	-4%	1,222,043	-1.2%
4	Masonry	1,458,769	50%	50%	-4%	1,429,594	-2.0%
5	Metals	11,432,533	92%	8%	-4%	11,395,949	-0.3%
6	Wood and Plastics	166,806	55%	45%	-4%	163,804	-1.8%
7	Thermal and Moisture	1,526,436	60%	40%	-3%	1,508,119	-1.2%
8	Doors and Windows	5,131,657	60%	40%	-4%	5,049,551	-1.6%
9	Finishes	7,583,397	40%	60%	-4%	7,401,395	-2.4%
10	Specialities	1,315,567	75%	25%	-2%	1,308,990	-0.5%
11	Equipment	314,729	75%	25%	-6%	310,008	-1.5%
12	Furnishings	2,391,941	90%	10%	-7%	2,375,197	-0.7%
13	Special Constr.	314,729	60%	40%	-8%	304,658	-3.2%
14	Conveying Systems	1,731,010	75%	25%	-8%	1,696,390	-2.0%
15	Mechanical	12,729,217	65%	35%	-9%	12,328,247	-3.1%
16	Electrical	10,093,361	60%	40%	-7%	9,810,747	-2.8%
		75,797,773				73,252,189	-3.4%

This study concludes that PLAs may be beneficial in the New York City metropolitan area. The balance of New York State is not included in this study and as this area is more rural, less densely populated, with a very different union presence this conclusion will likely vary for this area.

Summary

In the greater metropolitan area of New York City Project Labor Agreements (PLAs) have been used successfully by both public and private sector clients. There appears to be no cost premium associated with the employment of a PLA in the heavily unionized New York City area, as prevailing wage rates are comparable to union wages, and most, if not all major projects are executed on a union basis.

We consider that a VA project constructed in New York could use a Project Labor Agreement to negotiate construction cost savings of up to approximately 3.4% in a poor economy. We see that during a stable cycle, a PLA will likely be cost neutral.

7. Case Study D: Orlando, Florida

Overview

In the Orlando, Central Florida area, the following organizations were interviewed to compile this report:

- Association of Building Contractors Inc. (ABC)
- Florida Building and Construction Trades Council (FBCTC)
- Two large prominent Orlando general contractors
- Five large non-union subcontractors primarily in the electrical and mechanical/plumbing crafts.
- Two large unionized electrical subcontractors
- IBEW Electrical Union (Local 606)

Local Labor Market Characteristics

Florida is one of 22 'right-to-work' states and has only 3.7% of private construction employees as union members with 6.4% of total state employees as union members.[13]

The unions local to the Orlando VA project are Electrical (Local 606) with approx 800 members, Sheet Metal (Local 15) has approx 450 members and Plumbing (Local 803) has around 770 members.

Davis-Bacon Prevailing Wage Rates and Current Union Rates

The VA project will be within the Davis-Bacon zone for Orange County, Florida.

Various subcontractors noted that the Davis-Bacon rates for the Central Florida region were generally very low and not reflective of the rates most employers (both union and non-union) paid their employees. The belief is that this is due to poor response by Florida contractors to the Davis-Bacon survey. For example the Davis-Bacon prevailing rates for electricians, sheet metal workers and carpenters ranges from $11.41 to $12.95 (including fringes)[14], while contractor rates are above $20.00 and union rates around $28.00 for these trades[15].

The Cape Canaveral Kennedy Space Center is adjacent to Orlando and has much higher Davis-Bacon rates reflecting the fact that this is an 'Industrial' facility. Rates here are approx $12 higher than in Orange County (i.e. including fringes, under Davis-Bacon a Plumber receives $44.34 at Cape Canaveral, vs. $32.74 in Orange). A Top 3 mechanical subcontractor also confirmed hourly rates at the Cape as "*20-25% above their current hourly rates"*.

A large non-union HVAC contractor noted that local base pay rates are already similar to union rates to attract and retain qualified staff and only Cape Canaveral projects would require an increase to pay rates.

[13] Refer www.unionstats.com
[14] Refer Government Purchasing Office - www.gpo.gov/davisbacon/
[15] Interview – Top 3 Electrical Contractor and Top 10 Mechanical Contractor Interviews

Effect on Construction Costs Derived from Local Research

Labor Costs

The response to the effect PLAs will have on labor costs, varied considerably, as below:

- 5% project increase (from large general contractor)
- 20% cost to job (large mechanical subcontractor)
- Depends when job is posted [as to what the Davis-Bacon rates are] and would add a legal team for project duration for continual legal review and advice (large electrical subcontractor)
- Increase from $21 to $28 per hour for electrical, i.e. 33% (large electrical subcontractor)
- Don't think it will drive wages up (large unionized electrical subcontractor)

However two large electrical subcontractors (the largest, and another top ten) and another top ten mechanical subcontractor stated their organizational policy is not to bid on a PLA project, given the restrictive labor rules, second pension plan contributions and union hiring hall requirements.

Qualified/Skilled Labor

With unions having a minor influence in Florida, it is perceived that PLAs would reduce the quality of labor available for a large project such as the proposed VA hospital. For example the HVAC trade would require an estimated 150 sheet metal craft workers at the peak for a project of this nature. Given only 400 local union workers in this trade, one large project would take a large portion of the available labor and if there were one or two other large projects, local labor pools would be depleted. However commentary also conceded that given the current downswing in the Florida (and national) construction market if there was a large project requiring labor union affiliation, this would assist in increasing union rolls accordingly.

Productivity

Given the high non-union presence in Orlando and that the current workforce carries out many large projects, the conclusion is that productivity is not affected by having either union or non-union labor on a project.

One large mechanical subcontractor estimated that some union labor may be slightly better trained with similar slightly improved productivity; however his view was that non-union contractors can offset this by manning the job accordingly and having various helpers to assist the skilled staff productivity. A union electrical subcontractor also sighted an example where an owner required 80 electricians within forty eight hours to get a delayed project back on schedule and where these men actually worked under the direction of a non-union electrical contractor. While this example shows that the union halls can assist with short term labor issues, if there is an overall insufficient labor pool in the area (i.e. 96% of Florida construction is non-union) the project productivity as a whole may in fact be limited, particularly if there are multiple large union projects being performed concurrently.

Bidding

A major factor and one difficult to quantify is the fact that many large local Orlando subcontractors have stated they would simply not bid in on a PLA mandated project. The effect of this would be twofold:

1. Large out-of-state union contractors would bid for the job, requiring accommodation and per diems for their staff
2. The total number of bidders will be reduced, potentially decreasing competition and increasing cost (at a potential penalty estimated by Carr at 3.2% for each withdrawal of bidder)[16]

Other Factors

While PLAs have been successful in Central Florida, with the most significant example being the first phase of Walt Disney World in Orlando from 1967 to 1971 - this was primarily due to large out-of-state union contractors coming together in Florida to deliver a large complex project in an area where there was both little skilled labor and minimal union presence at the time. Now, forty years on Disney has 95% open-shop construction and has had many project successes with this delivery technique.

A large union electrical subcontractor stated that the International Brotherhood of Electrical Workers (IBEW) has allowed a large degree of flexibility for their firm to alter standard union pay scales with a particular example given of a multiple shift hotel refurbishment (with $1.5mil electrical work) where shift and overtime rates were reduced to standard rates. This reflects the non-union majority in Florida and this union subcontractor noted this concession was allowed by the IBEW to enable him to compete with non-union competitors.

Most interviewees believed that the no-strike clause would have little impact in Florida as currently strikes are a 'non issue' in the region, whereas at the other end of the spectrum, a large mechanical subcontractor stated he has seen strikes with both union and non-union labor, but that nowadays, the risk of strikes is minimized due to this being a contract clause from owner to the general contractor which is then contractually passed down to the subcontractor - for the subcontractor implement what is necessary to ensure no-strikes on a project.

Potential Cost Impact from Use of PLAs

We estimate PLAs will have the following effect on CSI cost divisions:

Division **1, General Conditions** – contractors will likely increase their general conditions by 33% to account for their perception of risk with PLAs in administering their paperwork requirements, legal input and review, increased margin to account for this risk, and overall increased labor and supervision to manage the various trades where they are cognizant that some subcontractors may have a labor pool they are unfamiliar with.

Division 4. Masonry. The masonry trade will incur a 20% labor increase to reflect the higher rates of union contractors in the area.

[16] Analysis of Impacts on Jefferson County Courthouse Complex through PLAs. Paul Carr. Sept 2000.

Division 9. Finishes. The drywall trade would be subject to a 30% increase in hourly rates, reflected by a 15% increase in the overall finishes hourly rates, and 9% increase for the trade.

Division 10. Specialties. With systems crossing both electrical and mechanical trades prevalent in this division, specialties would have a 10% increase in labor costs.

Division 13. Special Construction - With systems crossing both electrical and mechanical trades prevalent in this division, specialties would have a 10% increase in labor costs.

Division 15. Mechanical – the sheet metal, plumbing and sprinkler trades would all be affected by union conditions – particularly 'work rules' as well as an increase in pay rates. This is estimated at 20%.

Division 16. Electrical – basic non-union rates are around $21/hour including fringes and union rates at $28 would reflect a 33% increase in normal hourly rates.

Overall Cost Impact – Model Project

Under the CSI cost breakdown for a 'model project' as described in Section 10, and factored for Orlando, we estimate cost impacts in the current economy as described below.

Orlando - FL RLB Index 12,200

	Division	Division Cost	Non labor%	Labor%	Labor % chg. due to PLA	PLA Cost	Division Change
1	General Conditions	11,075,051	60%	40%	33%	12,536,957	13.2%
2	Site work	495,572	70%	30%	5%	503,006	1.5%
3	Concrete	779,040	70%	30%	5%	790,725	1.5%
4	Masonry	918,791	50%	50%	20%	1,010,670	10.0%
5	Metals	7,200,666	92%	8%	0%	7,200,666	0.0%
6	Wood and Plastics	105,061	55%	45%	10%	109,789	4.5%
7	Thermal and Moisture	961,410	60%	40%	10%	999,867	4.0%
8	Doors and Windows	3,232,123	60%	40%	10%	3,361,408	4.0%
9	Finishes	4,776,326	40%	60%	15%	5,206,196	9.0%
10	Specialities	828,597	75%	25%	10%	849,312	2.5%
11	Equipment	198,229	75%	25%	10%	203,185	2.5%
12	Furnishings	1,506,540	90%	10%	10%	1,521,605	1.0%
13	Special Constr.	198,229	60%	40%	10%	206,158	4.0%
14	Conveying Systems	1,090,259	75%	25%	0%	1,090,259	0.0%
15	Mechanical	8,017,369	65%	35%	20%	8,578,585	7.0%
16	Electrical	6,357,202	60%	40%	33%	7,196,353	13.2%
		47,740,466				51,364,742	7.6%

Summary

We consider that a VA project constructed in Orlando utilizing a Project Labor Agreement could experience a construction cost premium of approximately 7.6%. We see this premium unaffected by a stable or poor economic cycle.

In Florida there is a low union percentage and strong contractor sentiment opposing PLAs. In the Orange County area of Orlando, Florida, it is likely that many large subcontractors will refuse to bid on a PLA project. Given the low numbers of available union labor in Florida, we believe that a PLA would likely not "advance the federal Government's interest in achieving economy and efficiency in federal procurement".

8. Case Study E: San Francisco, California

Overview

In the San Francisco region, information to compile this report was collected from the following organizations:

- The Northern California Mechanical Contractors Association
- The Brick and Craftworkers Union, Local 3
- San Francisco Building & Construction Trades Council
- Associated Builders and Contractors, Inc. (ABC)
- One large retail developer
- Two large, prominent California-based general contractors
- One large, Bay Area-based electrical subcontractor

Local Labor Market Characteristics

California does not have 'right-to-work' laws. The number of private construction employees registered as union members exceeds 20% with 18.4% of total state employees union members[17].

PLAs have been used in the San Francisco region (Bay Area) by public agencies such as the Public Utilities Commission and the San Francisco Airport Authority for large complex, long term, and multi-craft construction projects[18].

Construction Activity

At the time of writing, about 25 percent of the San Francisco City's approximately 16,000 building trades – 4,000 workers - are currently out of work, compared with nearly full employment in 2008[19].

San Francisco City has seen a steep drop in building permit applications. In July 2008 building permit applications numbered 5,600 valued at $240 million; in the month of January 2009 this had fallen to 4,000 applications valued at just $78 million. The City is trying to do its part to encourage construction by extending some permits that would otherwise soon expire[20].

Davis-Bacon Prevailing Wage Rates and Current Union Rates

The VA project in the Bay Area will fall under the San Francisco, California Davis-Bacon zone prevailing wage rates.

Various subcontractors and local union chapters noted that the Davis-Bacon rates for the Bay Area were generally in line with the rates set by the local Collective Bargaining Agreements (CBAs) which union employers paid their employees. As such, the use of PLAs in the Bay Area market would be anticipated to match the Davis-Bacon Rates. Therefore, it is unlikely that there will be labor rates impacts from the use of PLAs in this market.

[17] Refer www.unionstats.com
[18] Civic Center Project Labor Stability Study, City of Brentwood; prepared by Scarth-Lyons and Associates
[19] Refer www.sfgate.com
[20] Refer www.sfgate.com

Effect on Construction Costs Derived from Local Research

Labor Costs

Information published by the San Francisco Public Utilities Commission regarding their Water System Improvement Program Labor Agreements (WSIPLA), noted that as of January 9, 2009 nine projects had been awarded under the WSIPLA. The dollar value of the nine contracts awarded subject to their PLA is "less than the sum of the low end of the related engineer's estimates". In addition, the report notes that this "indicates that the WSIPLA has not adversely affected bidding on WSIP projects" and "work on all six projects has proceeded without disruption for labor related issues"[21].

Qualified/Skilled Labor

Despite the high cost of living, the Bay Area is well represented by qualified and skilled labor. Compared with other U.S. regions, the Bay Area has a proportionately high number of building trade union members and skilled labor for large projects will be generally unaffected by PLA implementation.

Bidding

Feedback from non-union contractors suggests that they will not bid on projects with PLAs owing to what they consider onerous conditions inherent in the PLA. However, due the current economic downturn it is likely that there is sufficient competition among union contractors to generate high bid participation. Bid prices are expected to result in negligible cost variance to comparable projects with prevailing wages[22].

For example, a representative of the San Francisco Building and Construction Trades Council cited an example in the San Francisco Unified School District which indicates their recent experience with PLAs has illustrated a) competitive bidding of 7 or more contractors, b) lowest bids submitted with either prevailing wage or PLA conditions, that were below the independent project estimates by similar percentages. This reinforces the WSIPLA example above that PLAs in the Bay Area market do not have an adverse effect on the number of bids or construction cost, relative to the use of prevailing wage requirements. One of the reasons that this may be the case in the Bay Area is because the building trade unions have a particularly strong presence in the construction market.

Other Factors

Economic Cycle

While we are currently experiencing a poor economic period and anticpate a neutral effect of a PLA on construction labor costs. We anticipate that during a stable period a PLA will have a slight affect on labor costs. Given San Francisco is strongly unionized and PLAs are a common occurrence, when the market becomes more buoyant, we believe that PLAs will serve to increase construction costs at approximately 1.5%, with a range from 0% to 3%.

[21] San Francisco Public Utilities Commission, Water System Improvement Program, Project Labor Agreement, Quarterly Report – Second Quarter 2008-2009
[22] Refer to http://www.dir.ca.gov/dlsr/FAQ_PrevailingWage.html

Potential Cost Impact from Use of PLAs

Differing views exist regarding the potential cost impacts of using PLAs on construction projects. The non-union ABC of California cites that the use of PLAs removes an important component of competitive bidding, which is for *"competing contractors to develop creative ways to streamline staffing and eliminate the 'bloat' of overstaffing and cumbersome craft work rules requirements"*[23]. The ABC has also lobbied for high dollar thresholds to be placed for subcontract values within a PLA project, to allow smaller or minority contractors to provide contract services without being signatory to the PLA. Studies from the mid 1990's [24] suggested that the labor costs could be 20% - 25% higher than that encountered on federal projects with prevailing wages.

By contrast, union organizations take a view that "the total package of wages and benefits" – the "prevailing wage" – is supposed to be the same for all contractors, union or not, on public works, and given the generally higher level of training and productivity in the unionized workforce, the PLAs requirements, far from being a disadvantage, would seem to present some actual advantages to non-union contractors" [25]. However PLAs typically require all contractors, union or non-union, live up to the terms of union agreements and to utilize union referral systems for some of the hiring.

Given the high prevalence of union based construction in San Francisco and general parity of union pay with Davis-Bacon rates we believe there will be both sufficient bidding competition on these large projects and that a PLA agreement will serve to assist the execution of what would in any event by a unionized construction project.

General Conditions

In the Bay Area, union contractors typically work on a high proportion of large value private and public sector projects. Union contractors are generally more familiar with the requirements of PLAs and because of the relative competition between union contractors, are unlikely to increase their general conditions relative to prevailing wage projects.

[23] http://www.agc-ca.org/member.aspx?id=1110
[24] The Estimated Cost of PLAs on Federal Construction. Journal of Labor Research. Vol XIX, No 1. by Max Lyons. Winter 1998.
[25] http://www.sfbuildingtradescouncil.org/content/view/288/32/

Overall Cost Impact – Model Project

Under the CSI cost breakdown for a 'model project' as described in Section 10,and factored for San Francisco, we estimate cost impacts in the current economy as described below.

San Francisco - CA RLB Index 17,044

	Division	Division Cost	Non labor%	Labor%	Labor % chg. due to PLA	PLA Cost	Division Change
1	General Conditions	15,472,391	60%	40%	0%	15,472,391	0.0%
2	Site work	692,339	70%	30%	0%	692,339	0.0%
3	Concrete	1,088,357	70%	30%	0%	1,088,357	0.0%
4	Masonry	1,283,596	50%	50%	0%	1,283,596	0.0%
5	Metals	10,059,685	92%	8%	0%	10,059,685	0.0%
6	Wood and Plastics	146,776	55%	45%	0%	146,776	0.0%
7	Thermal and Moisture	1,343,138	60%	40%	0%	1,343,138	0.0%
8	Doors and Windows	4,515,435	60%	40%	0%	4,515,435	0.0%
9	Finishes	6,672,763	40%	60%	0%	6,672,763	0.0%
10	Specialities	1,157,591	75%	25%	0%	1,157,591	0.0%
11	Equipment	276,936	75%	25%	0%	276,936	0.0%
12	Furnishings	2,104,710	90%	10%	0%	2,104,710	0.0%
13	Special Constr.	276,936	60%	40%	0%	276,936	0.0%
14	Conveying Systems	1,523,146	75%	25%	0%	1,523,146	0.0%
15	Mechanical	11,200,659	65%	35%	0%	11,200,659	0.0%
16	Electrical	8,881,324	60%	40%	0%	8,881,324	0.0%
		66,695,779				66,695,779	0.0%

Summary

From information gathered for this study, it appears that the Davis-Bacon prevailing wage rates for the Bay Area have parity with the rates set by the local collective bargaining agreements with the building trade unions. As such, the use of PLAs in the San Francisco, Bay Area market is anticipated to match the prevailing wage rates and therefore there is likely to be minimal impact on labor rates and construction costs.

Evidence from sources suggests that the experience of the use of PLAs in the Bay Area does not adversely impact competition, nor does it appear to lead to increases in construction costs relative to projects using only prevailing wages. One of the reasons that this is the case in the Bay Area is because the trade unions have a particularly strong presence in the construction market compared with other U.S. cities.

Overall we consider that a VA project constructed in the San Francisco, Bay Area utilizing a Project Labor Agreement will have a neutral cost effect in a poor economic cycle. In a stable economic cycle we consider a PLA will serve to increase construction costs at approximately 1.5%, with a range from 0% to 3%.

9. Comparative Findings and Conclusions

Rider Levett Bucknall research suggests that the effect of introducing PLAs will incur a cost impact across the U.S., however this impact varies by location.

Labor Cost

'Poor' Economic Cycle

In our analysis of the five cities in the current 'poor' economic cycle, RLB has determined that the PLA construction cost effect could be in the order of:

Denver CO	+6.4%
New Orleans LA	+7.5%
New York NY	-3.4%
Orlando FL	+7.6%
San Francisco CA	neutral

'Stable' Economic Cycle

During a stable period which some commentators speculate may commence in late 2010, the PLA construction cost effect will affect the stronger unionized locations. In a busy construction period, we believe the concessions that may be offered today would not necessarily be given (such as not freezing labor rates over the project duration or requiring overtime pay for shifts/out of hours/weekends). This is consistent with what has been seen in previous PLA phases, as discussed in the Electri report referencing the "Stop-Loss" period of PLAs in the 1980s. In non-union areas, we do not see PLAs varying for either a poor or stable cycle.

Based on this, the PLA construction cost effect in a stable period, could be in the order of:

Denver CO	+6.4%
New Orleans LA	+7.5%
New York NY	neutral
Orlando FL	+7.6%
San Francisco CA	+ 1.5%

Sensitivity Analysis

As previously discussed the cost effect of PLAs is not an exact science and many factors can contribute to increasing a project construction bid cost.

Appendix 2 details a sensitivity analysis applied to the Orlando model project. For this city, in the current poor economic cycle, we anticipate a 7.6% construction cost increase as above. By evaluating 'low' and 'high' scenarios for the effect on the labor costs we believe the range for Orlando is for a potential construction cost increase between 6% and 9%. We therefore feel our figures above have a range of +/- 1.5%.

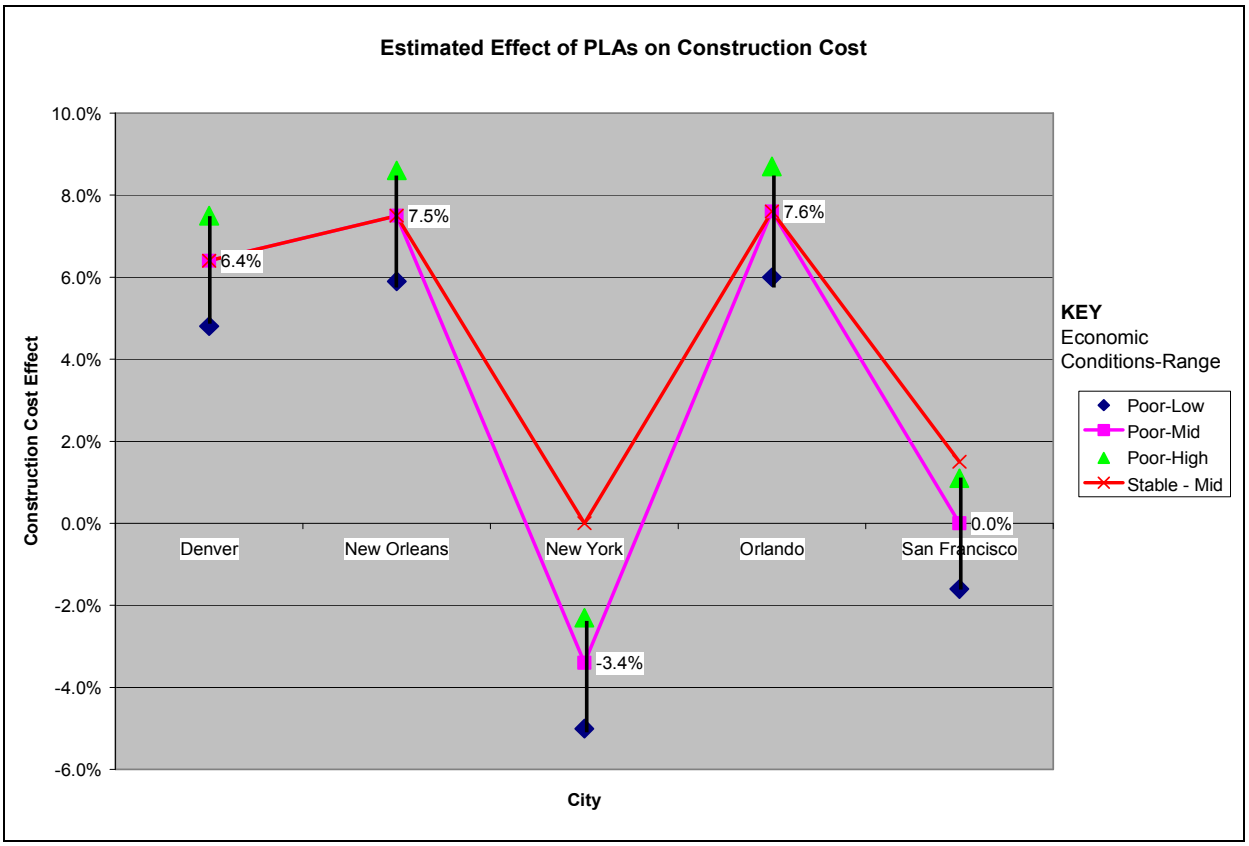

Figure 1 – Sensitivity Analysis of PLAs for the five study locations.

Conclusion

In locations where current union presence is stronger (San Francisco CA and New York NY), and in difficult economic times where construction activity is low, a PLA can offer concessions to normal union work rates and rules. While these are concessions against a 'normal' union job, they are not necessarily concessions against the standard stand alone Davis-Bacon rates. Most large projects in these cities are 'union jobs' and the PLA can actually be beneficial to a project.

In New York, we consider that a PLA could be used to negotiate construction cost savings of approximately 2% to 5% in a poor economy. In a stable economy we see that the effect of a PLA in New York would be relatively cost neutral ranging from -1.5% to +1.5%.

In San Francisco, we see a PLA would be relatively cost neutral ranging from -1.5% to +1.5% in a poor economy. In a stable economy we see that the effect of a PLA in San Francisco would have a construction cost increase range from 0% to 3%.

In locations where union presence is lower than the national average (Denver CO, New Orleans LA, and Orlando FL), we estimate that PLAs will increase project labor costs and thereby increase the projected total construction cost. In both a poor and stable economy in these cities, this construction cost increase ranges from 5% to 9%.

Various studies by Beacon Hill (refer Section 3 above) indicate PLAs increase a projects cost by 14% to 25%, however, Kotler[26] argues that these reports fail to segregate labor costs and do not account for other project factors, such as site factors, scope or quality. We tend to agree with Kotler, however, without carrying out a rigorous check analysis of the Beacon Hill source data and regression analysis, even if 50% of the "PLA effect" could be excluded and assigned to other non-labor factors, this would still leave a 7% to 12.5% 'PLA effect' for the construction cost. For the analysis to be entirely disqualified (as Kotler suggests) the PLA projects would ALL need significant non-labor nuances to drive the square foot cost up - as separate to the PLA effect. We do not believe this is the case. Comparative data in a report by Lyons in 1998 estimated that "*Based on the higher wage costs associated with PLAs, the cost of federally owned construction will rise by 1.7 to 7.0 percent annually*[27]

Qualified / Skilled Labor

Our city studies have shown that the effect of PLAs on skilled labor resources will vary by location.

In strongly unionized areas, with a large existing union presence, a PLA will provide a framework where the union halls supply skilled labor to the project site. Even if multiple PLA or other union projects are being constructed at the same time, the quantity of local union labor is likely to cope with this workload.

In non-union areas, feedback from industry sources generally raised dire concern with the effect that PLAs would have on the current skilled labor pool and ability for union-only labor to meet project demands. While PLA proponents argue that both union and non-union labor can work under a PLA, the negative issues associated with the PLA tend to dictate that non-union contractors refuse to agree to PLAs and do not bid on PLA projects. As a result we believe that PLAs will have a significant negative effect on skilled labor in Denver, New Orleans and Orlando. There is over 90% non-union labor in these locations, and apart from the basic exclusion of the local labor, the union workforce is likely to be required to be supplemented by out-of-state union labor to meet project demands, particularly if many PLA type projects are occurring concurrently in one area. This out-of-state labor will cost the project in additional travel and subsistence costs, possibly affect the project quality due to labor shortages, and will negatively affect the local construction economy.

Productivity

Whether not a project has a PLA or not, should not affect productivity or schedule in terms of the rate of production per day - as a project will be manned accordingly by subcontractors to meet schedule. However, there is strong evidence to suggest that the result of a PLA that dictates work rules, double benefits, team structure and activities on non-union type contractors will be that *production costs* will increase - given these union related requirements.

[26] PLAs in New York State: in the Public Interest. Cornell University. March 2009. page 22
[27] The Estimated Cost of PLAs on Federal Construction. Journal of Labor Research. Vol XIX, No 1. by Max Lyons, Winter 1998.

Bidding

In non-union areas, where a PLA prompts responsible bidders to refuse to bid this will have the effect to raise bid prices. Less competition has been shown to increase bid costs, but counter arguments state that as long as 6 or 7 bidders are present, this enables a true competitive bid.

In our opinion, a framework such as a PLA that excludes responsible bidders and has the potential to increase costs should not be used – particularly in Denver, Orlando and New Orleans.

Other Factors

Strikes have become a rare event in U.S. construction and given the main original and advocated benefit of a PLA was to prevent strikes in isolated, non-union areas, the PLA adds very little value to the no-strike argument as both PLA and non-PLA advocates cite many examples for projects where there have been strikes but also no-strikes – unrelated to whether or not a PLA is in place.

Targeting safety, employment of minority and women owned businesses, meeting prevailing Davis-Bacon rates, ensuring 100% worker eligibility status for project workers and focusing on preventing strikes, can all be contract clauses and procurement approaches without a PLA.

10. Appendix 1 - Comparative Cost Impacts – Tabulation

Rider Levett Bucknall has significant experience in estimating the cost of health care projects in Denver, CO. For the purposes of this report, a 'model hospital' has been created based on the Denver location, with labor and non labor percentages then assigned to each division. Note below, that the MEP divisions 14 to 16 comprise approximately 32% of the total construction cost.

In a Quarterly Construction Cost Report, RLB produces a comparative cost index for four of the five cities of this study. For this report, the New Orleans location required specific regional study to evaluate its cost index. Utilizing the model hospital and cost index, comparative costs across the five locations have been established.

While we are conscious that many of the projects may be ten times larger than the model hospital, it is important to note that these values have been established to provide a comparative reference and to build up the projected percentage cost impact for each location.

Denver - CO	RLB Index	12,309		**(Note: Denver is the model hopital)**		
Division	Division Cost	Non labor%	Labor%	Labor % chg. due to PLA	PLA Cost	Division Change
1 General Conditions	11,174,000	60%	40%	20%	12,067,920	8.0%
2 Site work	500,000	70%	30%	15%	522,500	4.5%
3 Concrete	786,000	70%	30%	15%	821,370	4.5%
4 Masonry	927,000	50%	50%	20%	1,019,700	10.0%
5 Metals	7,265,000	92%	8%	20%	7,381,240	1.6%
6 Wood and Plastics	106,000	55%	45%	20%	115,540	9.0%
7 Thermal and Moisture	970,000	60%	40%	15%	1,028,200	6.0%
8 Doors and Windows	3,261,000	60%	40%	15%	3,456,660	6.0%
9 Finishes	4,819,000	40%	60%	15%	5,252,710	9.0%
10 Specialities	836,000	75%	25%	15%	867,350	3.8%
11 Equipment	200,000	75%	25%	15%	207,500	3.8%
12 Furnishings	1,520,000	90%	10%	20%	1,550,400	2.0%
13 Special Constr.	200,000	60%	40%	15%	212,000	6.0%
14 Conveying Systems	1,100,000	75%	25%	15%	1,141,250	3.8%
15 Mechanical	8,089,000	65%	35%	20%	8,655,230	7.0%
16 Electrical	6,414,000	60%	40%	20%	6,927,120	8.0%
	48,167,000				51,226,690	6.4%

Orlando - FL	RLB Index	12,200				
Division	Division Cost	Non labor%	Labor%	Labor % chg. due to PLA	PLA Cost	Division Change
1 General Conditions	11,075,051	60%	40%	33%	12,536,957	13.2%
2 Site work	495,572	70%	30%	5%	503,006	1.5%
3 Concrete	779,040	70%	30%	5%	790,725	1.5%
4 Masonry	918,791	50%	50%	20%	1,010,670	10.0%
5 Metals	7,200,666	92%	8%	0%	7,200,666	0.0%
6 Wood and Plastics	105,061	55%	45%	10%	109,789	4.5%
7 Thermal and Moisture	961,410	60%	40%	10%	999,867	4.0%
8 Doors and Windows	3,232,123	60%	40%	10%	3,361,408	4.0%
9 Finishes	4,776,326	40%	60%	15%	5,206,196	9.0%
10 Specialities	828,597	75%	25%	10%	849,312	2.5%
11 Equipment	198,229	75%	25%	10%	203,185	2.5%
12 Furnishings	1,506,540	90%	10%	10%	1,521,605	1.0%
13 Special Constr.	198,229	60%	40%	10%	206,158	4.0%
14 Conveying Systems	1,090,259	75%	25%	0%	1,090,259	0.0%
15 Mechanical	8,017,369	65%	35%	20%	8,578,585	7.0%
16 Electrical	6,357,202	60%	40%	33%	7,196,353	13.2%
	47,740,466				51,364,742	7.6%

New Orleans - LA	RLB Index	12,250				
Division	Division Cost	Non labor%	Labor%	Labor % chg. due to PLA	PLA Cost	Division Change
1 General Conditions	11,120,440	60%	40%	30%	12,454,893	12.0%
2 Site work	497,603	70%	30%	15%	519,996	4.5%
3 Concrete	782,233	70%	30%	15%	817,433	4.5%
4 Masonry	922,557	50%	50%	20%	1,014,812	10.0%
5 Metals	7,230,177	92%	8%	15%	7,316,939	1.2%
6 Wood and Plastics	105,492	55%	45%	20%	114,986	9.0%
7 Thermal and Moisture	965,351	60%	40%	15%	1,023,272	6.0%
8 Doors and Windows	3,245,369	60%	40%	15%	3,440,091	6.0%
9 Finishes	4,795,901	40%	60%	20%	5,371,410	12.0%
10 Specialities	831,993	75%	25%	15%	863,193	3.8%
11 Equipment	199,041	75%	25%	15%	206,505	3.8%
12 Furnishings	1,512,714	90%	10%	15%	1,535,405	1.5%
13 Special Constr.	199,041	60%	40%	15%	210,984	6.0%
14 Conveying Systems	1,094,727	75%	25%	15%	1,135,780	3.7%
15 Mechanical	8,050,227	65%	35%	20%	8,613,743	7.0%
16 Electrical	6,383,256	60%	40%	20%	6,893,917	8.0%
	47,936,124				51,533,359	7.5%

New York - NY	RLB Index	19,370				
Division	Division Cost	Non labor%	Labor%	Labor % chg. due to PLA	PLA Cost	Division Change
1 General Conditions	17,583,913	60%	40%	-20%	16,177,200	-8.0%
2 Site work	786,823	70%	30%	-7%	770,299	-2.1%
3 Concrete	1,236,885	70%	30%	-4%	1,222,043	-1.2%
4 Masonry	1,458,769	50%	50%	-4%	1,429,594	-2.0%
5 Metals	11,432,533	92%	8%	-4%	11,395,949	-0.3%
6 Wood and Plastics	166,806	55%	45%	-4%	163,804	-1.8%
7 Thermal and Moisture	1,526,436	60%	40%	-3%	1,508,119	-1.2%
8 Doors and Windows	5,131,657	60%	40%	-4%	5,049,551	-1.6%
9 Finishes	7,583,397	40%	60%	-4%	7,401,395	-2.4%
10 Specialities	1,315,567	75%	25%	-2%	1,308,990	-0.5%
11 Equipment	314,729	75%	25%	-6%	310,008	-1.5%
12 Furnishings	2,391,941	90%	10%	-7%	2,375,197	-0.7%
13 Special Constr.	314,729	60%	40%	-8%	304,658	-3.2%
14 Conveying Systems	1,731,010	75%	25%	-8%	1,696,390	-2.0%
15 Mechanical	12,729,217	65%	35%	-9%	12,328,247	-3.1%
16 Electrical	10,093,361	60%	40%	-7%	9,810,747	-2.8%
	75,797,773				73,252,189	-3.4%

San Francisco - CA	RLB Index	17,044				
Division	Division Cost	Non labor%	Labor%	Labor % chg. due to PLA	PLA Cost	Division Change
1 General Conditions	15,472,391	60%	40%	0%	15,472,391	0.0%
2 Site work	692,339	70%	30%	0%	692,339	0.0%
3 Concrete	1,088,357	70%	30%	0%	1,088,357	0.0%
4 Masonry	1,283,596	50%	50%	0%	1,283,596	0.0%
5 Metals	10,059,685	92%	8%	0%	10,059,685	0.0%
6 Wood and Plastics	146,776	55%	45%	0%	146,776	0.0%
7 Thermal and Moisture	1,343,138	60%	40%	0%	1,343,138	0.0%
8 Doors and Windows	4,515,435	60%	40%	0%	4,515,435	0.0%
9 Finishes	6,672,763	40%	60%	0%	6,672,763	0.0%
10 Specialities	1,157,591	75%	25%	0%	1,157,591	0.0%
11 Equipment	276,936	75%	25%	0%	276,936	0.0%
12 Furnishings	2,104,710	90%	10%	0%	2,104,710	0.0%
13 Special Constr.	276,936	60%	40%	0%	276,936	0.0%
14 Conveying Systems	1,523,146	75%	25%	0%	1,523,146	0.0%
15 Mechanical	11,200,659	65%	35%	0%	11,200,659	0.0%
16 Electrical	8,881,324	60%	40%	0%	8,881,324	0.0%
	66,695,779				66,695,779	0.0%

11. Appendix 2 – Sensitivity Analysis

The following tables represent low and high scenarios for Orlando. We see that this is representative for defining a range for the five cities of this study.

Orlando - FL

LOW RLB Index 12,200

	Division	Division Cost	Non labor%	Labor%	Labor % chg. due to PLA	PLA Cost	Division Change
1	General Conditions	11,075,051	60%	40%	25%	12,182,556	10.0%
2	Site work	495,572	70%	30%	5%	503,006	1.5%
3	Concrete	779,040	70%	30%	5%	790,725	1.5%
4	Masonry	918,791	50%	50%	15%	987,700	7.5%
5	Metals	7,200,666	92%	8%	0%	7,200,666	0.0%
6	Wood and Plastics	105,061	55%	45%	10%	109,789	4.5%
7	Thermal and Moisture	961,410	60%	40%	10%	999,867	4.0%
8	Doors and Windows	3,232,123	60%	40%	10%	3,361,408	4.0%
9	Finishes	4,776,326	40%	60%	12%	5,120,222	7.2%
10	Specialities	828,597	75%	25%	10%	849,312	2.5%
11	Equipment	198,229	75%	25%	0%	198,229	0.0%
12	Furnishings	1,506,540	90%	10%	0%	1,506,540	0.0%
13	Special Constr.	198,229	60%	40%	10%	206,158	4.0%
14	Conveying Systems	1,090,259	75%	25%	0%	1,090,259	0.0%
15	Mechanical	8,017,369	65%	35%	17%	8,494,403	6.0%
16	Electrical	6,357,202	60%	40%	25%	6,992,922	10.0%
		47,740,466			LOW	50,593,762	6.0%

HIGH

	Division	Division Cost	Non labor%	Labor%	Labor % chg. due to PLA	PLA Cost	Division Change
1	General Conditions	11,075,051	60%	40%	40%	12,847,059	16.0%
2	Site work	495,572	70%	30%	10%	510,440	3.0%
3	Concrete	779,040	70%	30%	10%	802,411	3.0%
4	Masonry	918,791	50%	50%	25%	1,033,640	12.5%
5	Metals	7,200,666	92%	8%	0%	7,200,666	0.0%
6	Wood and Plastics	105,061	55%	45%	12%	110,735	5.4%
7	Thermal and Moisture	961,410	60%	40%	12%	1,007,558	4.8%
8	Doors and Windows	3,232,123	60%	40%	12%	3,387,265	4.8%
9	Finishes	4,776,326	40%	60%	15%	5,206,196	9.0%
10	Specialities	828,597	75%	25%	12%	853,455	3.0%
11	Equipment	198,229	75%	25%	12%	204,176	3.0%
12	Furnishings	1,506,540	90%	10%	12%	1,524,618	1.2%
13	Special Constr.	198,229	60%	40%	12%	207,744	4.8%
14	Conveying Systems	1,090,259	75%	25%	0%	1,090,259	0.0%
15	Mechanical	8,017,369	65%	35%	25%	8,718,889	8.8%
16	Electrical	6,357,202	60%	40%	33%	7,196,353	13.2%
		47,740,466			HIGH	51,901,463	8.7%

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