

January 2016

## Assessing the Costs:

# The Impact of Prevailing Wage Requirements on Affordable Housing Construction in New York City

## Summary

The question of whether all city-subsidized affordable housing projects should be required to pay prevailing wages to construction workers has roiled housing advocates, developers, unionists, and others for decades. While proponents argue it is a matter of fair pay and better work, opponents counter that it raises costs at the expense of the amount of affordable housing that can be built.

Legislation passed in Albany last June, at the urging of the Governor, requires labor and developers to reach an agreement by January 15 on wage levels for housing construction projects with 15 or more units that benefit from the 421-a property tax break. If no agreement is reached the 421-a tax break, which developers say is crucial to the financing of much housing construction in the city and is a key element of Mayor de Blasio's affordable housing plan, would no longer be available for new projects. City Council Member Elizabeth Crowley has also introduced legislation that would require many projects receiving discretionary funding from the city to pay prevailing wages.

Prevailing wages, which are set based on guidelines that examine wages for various construction trades in a geographic area, are already required on a subset of affordable housing projects in the city that draw on certain federal funding streams. From 2010 through 2015, there were 57 new construction projects with 4,702 apartments that were subject to federal prevailing wage requirements. By comparing the construction budgets of these projects with other publicly subsidized affordable housing projects financed during 2010-2015 that were not required to pay prevailing wages (controlling for various project characteristics ranging from building size to the number of affordable units), IBO has estimated the effect of prevailing wages on construction costs of affordable housing projects. Among our findings:

- There was on average an estimated 13 percent increase in total construction costs associated with prevailing wage requirements.
- Requiring prevailing wages translates to an estimated per unit cost increase of nearly \$45,000.
- To maintain the de Blasio Administration's plan for constructing a total of 80,000 new affordable housing units, a requirement to pay prevailing wages would necessitate roughly \$2.8 billion in additional financing.

The data used by IBO has enabled us to estimate the effect of prevailing wages on construction costs. Proponents argue that prevailing wages lead to safer and better working conditions and more timely completion of projects. Opponents counter that prevailing wages add monitoring, reporting, scheduling and other costs to projects. All of these assertions are outside the scope of our analysis.



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## Introduction

There have been numerous calls to expand prevailing wage requirements to a broader segment of publicly subsidized residential development projects in New York City, an issue that has been debated among housing advocates, developers, and construction trade unions for decades. Proponents of prevailing wages argue that they ensure fair compensation and a path to the middle class for construction workers doing often dangerous work. They claim that because workers on prevailing wage jobs often have more training and experience, productivity and safety is higher than at non-prevailing wage sites. Opponents argue that with limited public resources, the added cost of requiring prevailing wages on affordable housing projects may require larger public subsidies to make projects financially viable and will yield fewer affordable units. They also claim that paying a prevailing wage adds unnecessary red-tape and reporting requirements that then slows down development.

This past June the state Legislature included language that would allow the 421-a tax property tax incentive program to continue with modifications, contingent upon labor unions and developers reaching an agreement on wages for construction projects over 15 units—including the possibility of wages pegged to existing state or federal prevailing wage schedules—by January 15, 2016. If an agreement is reached by the deadline, rental projects can receive the 421-a tax benefit if a portion of the apartments are reserved as affordable housing (the minimum share of affordable units to qualify for 421-a depends on the project's financing and location). In April, Council Member Elizabeth Crowley of Queens along with 16 co-sponsors introduced a bill that would require many construction projects receiving discretionary financing from the city to pay prevailing wages. This bill would apply to residential construction projects with more than 50 units, and would affect much of the affordable housing being built under the Mayor's Housing New York plan. As the debate on the expansion of prevailing wages continues, IBO sought to understand the impact requiring prevailing wages would have on affordable housing construction costs in New York City.

In this brief, the Independent Budget Office examines the labor rules associated with prevailing wage laws and how prevailing wages compare with the median wages across construction trades. We then use a regression analysis to estimate the increase in construction costs associated with requiring prevailing wages, using final budget cost data

for new construction affordable housing developments financed from 2010 through 2015. (Years refer to city fiscal years unless otherwise specified.) The impact that prevailing wage laws have on construction costs is one piece of a broader discussion of affordable housing development and worker wages. This analysis is focused solely on construction costs; we have not explored whether prevailing wage projects have better or worse safety or worker treatment records, or are built faster or slower when compared with similar projects that are not required to pay prevailing wages, and we have not explored how correlated the requirement to pay prevailing wages is to the use of union labor.

## Background

Prevailing wages are established by job classification, such as electrician or carpenter, and include both wage and fringe benefit amounts that must be paid or provided to workers. Unlike the city's living wage laws, prevailing wages are not a uniform wage floor.<sup>1</sup> Each trade is classified with a different wage, fringe, and paid holiday schedule. For some job classifications, there are different prevailing wages specified for new construction versus repair and maintenance work. A lower wage and fringe rate may be permitted for apprentice workers in a recognized apprenticeship program.

### ***Prevailing Wages Introduce Additional Labor Rules.***

There are two sets of rules governing prevailing wages for construction workers in New York City, the federal Davis-Bacon and Related Acts and the New York State Labor Law Section 220. These laws establish wage and fringe benefit levels and also dictate overtime, holiday, and recordkeeping rules that for many aspects go beyond standard labor laws. Hourly wages are established by trade and the type of work being performed. In addition to wages, an hourly fringe amount is established for each job classification, paid in the form of employee benefits such as health insurance premiums, retirement contributions, life insurance, vacation and other paid leave, and contributions to training funds. Alternatively, the fringe amount may be paid to the employee directly in addition to hourly wage earnings.

Beyond establishing minimum wages and fringe benefit levels, prevailing wage laws also regulate worker hours and pay schedules. The federal Davis-Bacon prevailing wage laws require the standard time-and-a-half pay rate for any work over 40 hours in a week. The state prevailing wage laws, varying by job classification, may require overtime at either time-and-a-half or double-time for any work over

eight hours in a single day, and weekend or night shift work. Paid holidays are also specified under prevailing wage laws, but these too vary by job classification. For example, under the Davis-Bacon rules, a boilermaker would be required to get Christmas Eve and New Year's Eve off, but an electrician would not. An electrician, however, would be required to receive Washington's Birthday and Election Day as paid holidays, which a boilermaker would not.

Employees working under prevailing wage rules must be paid weekly and records of their hours, pay rate, and job classifications must be submitted to the government agency monitoring for compliance with the rules. Prevailing wage laws also encompass extensive antikickback rules, to ensure that workers are not being paid the prevailing wage rate but then coerced into returning some of that income back to their employer. A poster explaining worker rights under prevailing wage laws must be publicly displayed at the job site.

The federal and state prevailing wage laws do not include a requirement to hire union labor, and therefore developers on projects that are required to pay prevailing wages are not mandated to hire union workers. Conversely, developers

on projects with no prevailing wage requirements may choose to hire union workers.

### Prevailing Wage Rates Are Higher Than Median Industry Wages

Comparing prevailing wages to other government measures of average or median wages in various industries can be problematic because of differences in how job titles and duties are classified. For example, Davis-Bacon breaks out wages and fringe for the electrician job title by new construction work and repair and maintenance work. Additionally, Davis-Bacon allows for a separate, lower pay schedule for apprentice workers. In contrast, the federal Bureau of Labor Statistics reports one median rate for the electrician job title that reflects any type of electrical work, and this median calculation includes union and nonunion wages and apprentice wages.

Although there are local Davis-Bacon wages determined for construction projects in New York City, there is no requirement in the prevailing wage laws that workers be city residents—the construction industry in New York City employs workers who reside both within the city and in the

### How Prevailing Wages Are Determined

The process used to set prevailing wage and fringe rates differ between the federal Davis-Bacon act and the state's Section 220 rules, although for many job titles the results are quite similar.

**Davis-Bacon:** The U.S. Department of Labor Wage and Hours Division conducts a survey of wage and fringe benefit rates paid to workers in a given construction trade every three years. Contractors identified through reports by F. W. Dodge (a construction data analytics firm) are contacted directly with requests to submit wage data, although the survey is open to any interested party working in a given construction trade. Survey participation is voluntary, and prevailing wages are based upon the returned surveys, which may or may not be representative of the industry as a whole. If more than 50 percent of survey respondents report being paid the same wage and fringe benefit rate, then those wage and fringe rates are determined to be the "prevailing" amounts. If the majority threshold is not met, a weighted average of reported wages is calculated.

**Section 220:** In New York City, the Office of the City Comptroller establishes prevailing wage rates for Section

220 purposes on an annual basis. Prevailing wages are calculated according to the wages and fringe benefits for the trade union governing that job classification, so long as the Comptroller determines that at least 30 percent of workers in that trade belong to the union. If the 30 percent threshold is not met, then the Comptroller sets prevailing wages by averaging the wages and fringe paid to workers in each trade over the previous year.

For Davis-Bacon wage determinations in New York City, more than 50 percent of respondents in each trade reported the same wage and fringe rates—indicating that they are working under the same collective bargaining agreement—which then becomes the basis for the prevailing wage rates under the federal statute. For Section 220 purposes, the Comptroller has found at least 30 percent of workers to be unionized in each trade, so union collective bargaining agreements are used to set prevailing wages. In both cases, prevailing wage and fringe rates end up being based upon the collective bargaining agreements for the construction trade union that corresponds to a prevailing wage job classification. Both the federal and the state prevailing wage schedules specify the local chapter of the construction trade union whose collective bargaining agreement formed the basis for the prevailing wage determinations.

### Davis-Bacon Wages Are Higher Than Industry Median Wages: Selected Trades

Construction Trade	Davis-Bacon Prevailing Hourly Wages	Median Industry Hourly Wages	Percent Difference
Boilermaker	\$49.47	\$40.61	22%
Carpenter	50.50	29.48	71%
Cement Mason	45.88	37.37	23%
Roofer	40.70	24.41	67%
Structural Ironworker	48.75	42.62	14%

SOURCES: Davis-Bacon Wage Determinations as modified November 13, 2015; U.S. Department of Labor Bureau of Labor Statistics Occupational Employment and Wage Estimates, May 2014

NOTE: Area median wages represent the New York-White Plains-Wayne, NY-NJ metropolitan division.

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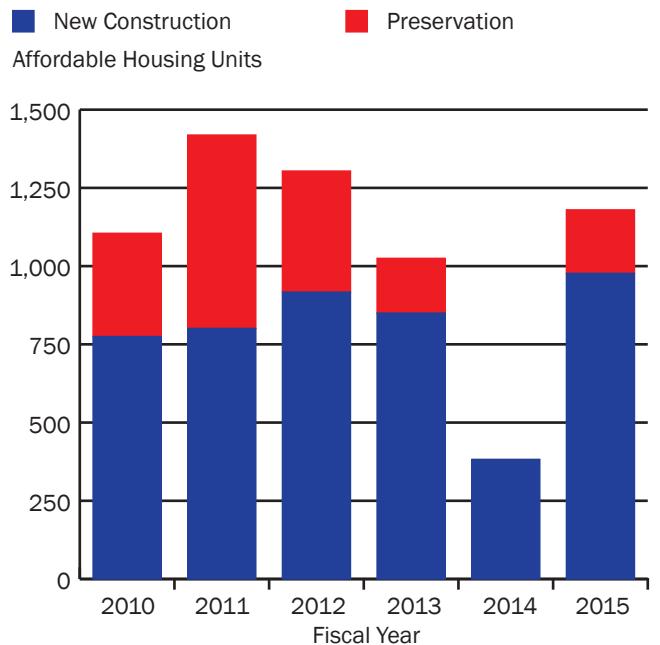
greater metro area. In comparing a selection of job titles with a single Davis-Bacon wage rate for the city to the New York metro area median wage for the equivalent title reported by the Bureau of Labor Statistics, IBO found that prevailing wage rates are higher than the industry median but by varying degrees.<sup>2</sup> (This side-by-side comparison does not differentiate between worker training or experience levels.) For example, the prevailing hourly wage for a boilermaker is 22 percent higher than the median for the industry, while the prevailing hourly wage for a carpenter is 71 percent higher than the median. These comparisons suggest that workers under prevailing wage rules are making higher wages than workers performing similar duties in the industry as a whole. Since prevailing wages in New York are based upon union collective bargaining agreements, wage differences between prevailing wages and median industry wages will be influenced by the share of workers in that trade who are unionized—greater differences between prevailing wages and industry median wages may reflect fields that are less unionized than others.

### Prevailing Wages Already Apply to Some Affordable Housing Projects

Projects using selected federal funding sources through the U.S. Department of Housing and Urban Development (HUD) are currently required to pay Davis-Bacon wages for construction work being performed. The use of even \$1 of the specific federal funding sources that trigger Davis-Bacon rules results in a requirement that prevailing wages apply to the entire construction project.

There are two main HUD funding sources used for the new construction and preservation of affordable housing in New York City that require Davis-Bacon rules if funds

### City's Housing Department Routinely Finances Prevailing Wage Construction



SOURCE: IBO analysis of Department of Housing Preservation and Development data

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assist 12 or more units: the HOME Investment Partnership Program and Section 202 Supportive Housing for the Elderly. Funding for these HUD programs is allocated through the city's Department of Housing Preservation and Development (HPD). From 2010 through 2015, 71 affordable housing projects totaling 6,415 units were required to pay prevailing wages under the Davis-Bacon and Related Acts. The majority, 57 projects containing 4,702 units, were new construction. During the study period, 2011 saw the most prevailing wage activity with the financing of Davis-Bacon construction work for 1,419 units; 2014 saw the least prevailing wage activity, with the financing of Davis-Bacon construction work for 382 units.

### Methods of Estimating the Impact of Prevailing Wages on Construction Costs

Most of the existing research looks at the impact of prevailing wages on large, publicly funded infrastructure projects such as highway and school construction, which are difficult to then translate to impacts on affordable housing construction. There are only a few previous studies that have attempted to directly relate prevailing wages to the cost of constructing affordable housing.

Analysts have used two approaches to estimating the impact of requiring prevailing wages, either a hypothetical model or multiple regression analysis. Estimating the



impact of prevailing wages through a hypothetical approach does not rely on observed cost data, but instead relies on combining assumptions about labor costs and labor’s share of a total project cost into a theoretical model. The Citizens Housing and Planning Council (CHPC) used this approach, adapting a hypothetical model developed by the Center for Governmental Research that had covered multiple areas around New York State, and then modifying it to be more specific to New York City.<sup>3</sup> The Center for Governmental Research in their study estimated that labor costs would increase by 80 percent under prevailing wages, and CHPC in their adaptation applied a Fiscal Policy Institute estimate that labor costs accounted for one-third of total development costs, defined as hard costs, soft costs, and land acquisition. Based upon these assumptions, CHPC concluded that prevailing wages would increase total development costs by 27 percent, which they then adjusted down to 25 percent to reflect possible productivity gains that may come with paying prevailing wages.

The second approach to estimating the impact of prevailing wages on affordable housing construction costs is to use multiple regression analysis to isolate the impact of prevailing wages while statistically controlling for other aspects of the development that may influence costs. Regression analysis requires both cost data and information on the buildings being constructed. A 2005 study published by three researchers at the University of California, Berkeley used multiple regression to estimate the impact of prevailing wages on affordable housing built through California’s Low-Income Housing Tax Credit Program.<sup>4</sup> The researchers analyzed actual construction costs for 205 tax credit projects across California. The authors estimate prevailing wages to increase construction costs in the range of 9 percent to 37 percent, with their most extensive models adjusting for the possibility that prevailing wage projects may have corresponded with high construction cost areas in California. Using multiple regression to estimate the impact of prevailing wages is limited by the quality of data that is able to be obtained for construction projects and the estimation techniques used to analyze the data.

Estimating the Effect of Requiring Prevailing Wages on New Construction Costs

**Focus on New Construction Projects.** Our analysis examines the effect of a prevailing wage requirement on the cost of building new affordable housing as opposed to its impact on residential development more generally. Construction cost data was obtained from HPD, which records final construction cost budgets for all projects where at least one unit of affordable housing is counted towards the city’s affordable housing goals.<sup>5</sup> HPD project budget data was assembled for 210 new construction projects totaling 21,996 affordable housing units financed from 2010 through 2015. This data does not include projects developed under the Inclusionary Housing program, as these are primarily market-rate buildings without public financing. Additional information on building characteristics was collected from new construction building permits filed with the Department of Buildings and property tax records through the Department of Finance. (See [appendix](#) for more information on the data and methodology used in this report.)

**Final Construction Budget as Proxy for Actual Costs.** The role of HPD in affordable housing development is mainly one of financing. HPD considers its financing to be the gap funding necessary to make an affordable housing project financially viable, and scrutinizes the final construction budgets to ensure the efficient use of public resources. HPD collects a final construction budget for each project at the finance closing, the point in time at which any affordable units are then counted towards a housing plan goal. Because HPD does not collect information on total construction costs once a project is completed, final budgeted construction costs are used as a proxy for actual construction costs in this report. IBO assumes that any differences in design or construction practices on the part of the developer and HPD for projects required to pay prevailing wages will be reflected in the final budgeted construction costs.

Over the Last Six Years Largest Number of New Construction Projects Financed in 2015							
		Fiscal Year					
		2010	2011	2012	2013	2014	2015
Non-Prevailing Wage	Projects	30	20	15	25	25	39
	Affordable Units	2,485	2,976	1,271	3,217	3,383	4,123
Prevailing Wage	Projects	11	7	14	10	6	8
	Affordable Units	775	801	917	850	382	816
SOURCE: IBO analysis of Department of Housing Preservation and Development data							
New York City Independent Budget Office							

**City-Financed Projects That Pay Prevailing Wages Are Generally Smaller Than Other Projects**

Project and Building Characteristics	Mean	
	Non-Prevailing Wage (N = 154)	Prevailing Wage (N = 56)
Total Project Units	118	81
Average Unit Size (square feet)	931	713
Number of Stories	10	7
SOURCES: IBO analysis of Department of Housing Preservation and Development and Department of Buildings data New York City Independent Budget Office		

**HUD Funds Requiring Prevailing Wages Are Generally Used for Supportive and Senior Housing.** Differences in building sizes, unit sizes, and the share of a building that is designated as affordable may impact construction costs, apart from any requirement to pay prevailing wages. Most of the affordable housing financed from 2010 through 2015 under the HUD programs that require prevailing wages has been supportive and senior housing. Among prevailing wage projects, 61 percent were supportive housing and 23 percent were senior housing. In contrast, among projects that did not require prevailing wages, only 9 percent were supportive housing and 6 percent were senior housing. Supportive and senior housing, on average, have smaller units and are in smaller buildings, meaning that HPD's prevailing wage projects tend to have smaller units in smaller buildings. All of the prevailing wage projects in this analysis are 100 percent affordable, while other projects include mixed-income developments. Because of these differences, simply comparing construction costs on a per-unit basis between prevailing wage and non-prevailing wage projects, without accounting for differences such as building characteristics, would be misleading.

**Effect of Prevailing Wages on Total Construction Costs.**

Multivariable linear regression was used to estimate the impact of requiring prevailing wages on the cost of city-subsidized residential development in New York City, with construction costs indexed to 2015 dollars. Regression analysis allows for a comparison of construction costs for prevailing wage and non-prevailing wage projects, while controlling for differences in other characteristics that may also influence construction costs; these other characteristics include the share of the total project units reserved as affordable housing, the number of affordable units in the project, unit size, inclusion of enclosed parking, building height, the number of financing sources, geographical location, and the year the project was financed.

**Model 1: Impact of Prevailing Wages on Total Project Costs**

*Dependent Variable: Log of Total Project Costs*

Variable	Parameter Estimate	Standard Error
Requires Prevailing Wages	0.12097	0.03959***
Percent Affordable	-0.00800	0.00165***
Log Affordable Units	0.92570	0.02282***
Average Unit Size (Square Feet in 100s)	0.04704	0.00768***
Enclosed Parking	0.05996	0.02753**
Low-Rise Project	-0.01707	0.04759
High-Rise Project	0.10028	0.07144
Number of Financing Sources	0.05343	0.00943***
Northern Manhattan	0.01383	0.05992
Bronx	-0.14815	0.05261***
Outer Brooklyn	-0.04543	0.04887
Queens	-0.14059	0.05059***
Staten Island	-0.09720	0.08191
Year 2010	0.02796	0.05372
Year 2011	0.00774	0.05093
Year 2012	-0.06030	0.05569
Year 2013	-0.04613	0.05617
Year 2014	0.03636	0.04970
Constant	13.19098	0.19961***
N	210	
R-Squared	0.9371	
SOURCES: IBO analysis of Department of Housing Preservation and Development and Department of Buildings data NOTES: One asterisk (*) denotes statistical significance at the 10 percent level, two asterisks (**) denote statistical significance at the 5 percent level, and three asterisks (***) denote statistical significance at the 1 percent level. Low-rise and high-rise projects are relative to a mid-rise project, geographical parameter estimates are relative to core Manhattan and Brooklyn locations, and year parameter estimates are relative to 2015. New York City Independent Budget Office		

Holding other variables constant, IBO estimates that the average total construction costs for a project requiring prevailing wages is 13 percent higher than a project where prevailing wages are not required.<sup>6</sup> Total construction costs refers to all development costs other than costs associated with land acquisition—construction hard costs, soft costs, developer fees, and project reserves.<sup>7</sup> Although this cost estimate is based upon Davis-Bacon prevailing wages, given the similarity in prevailing wage levels under Davis-Bacon and Section 220, we assume this estimated difference applies to both types of prevailing wage laws.

The regression results suggest some additional observations other than the effects on prevailing wage. Controlling for other project characteristics, buildings with a higher share of units reserved as affordable have, on

average, lower construction costs than similar buildings with a lower share of affordable apartments. Total construction costs are estimated to be 15 percent lower where 100 percent of the units are reserved as affordable than a project where only 80 percent of the units are affordable. Although we could not test this hypothesis, this result would be consistent with the use of more expensive finishes in mixed-income developments in order to attract market-rate residents. In practice, though, the ability to use market-rate units to cross-subsidize affordable units in a mixed-income development may offset the higher construction costs.

The regression results also suggest that there are slight economies of scale for projects containing more units, as indicated by a coefficient of less than one for the variable representing the number of affordable units in the project (log affordable units). The results also indicate that adding an additional 100 square feet to the average unit size increases project hard costs by an estimated 5 percent. Kitchens and bathrooms are the most expensive pieces of an apartment to build in terms of cost per square foot, so expanding the average apartment square footage through living rooms or bedrooms would be expected to have a limited but increasing effect on construction costs. Affordable housing projects that have enclosed parking cost an estimated 6 percent more to build, on average, than projects with either no parking or open lot parking. The number of financing sources funding a project is estimated to add to total construction costs, with each additional source of financing increasing costs by an average of 5 percent, likely attributable to higher administrative costs.

Even with land acquisition costs excluded from the analysis, compared with building a similar project in the city's most expensive residential neighborhoods in Manhattan and Brooklyn, the Bronx is the least expensive location to build, followed by Queens, with total construction costs averaging 14 percent less and 13 percent less, respectively. This may result from it being less expensive to build in lower-density areas of the city, or this cost difference may reflect the share of projects in those boroughs that use union labor.

**Compensating for the Cost of Prevailing Wages.** IBO also examined the impact of prevailing wages in terms of project hard costs, which is where increased labor costs associated with paying prevailing wages would be accounted for in the construction budget. Running the same model as reported above but using the log of project hard costs as the dependent variable, we estimate that prevailing wages increase hard costs by 19

### HPD May Need to Expand Monitoring Capacity

If prevailing wage regulations are expanded to cover additional affordable housing development projects, HPD will likely need to increase its monitoring staff capacity. Currently, HPD has eight staff in its Labor Monitoring Unit dedicated specifically to overseeing prevailing wage compliance. Staff members review weekly payroll and timekeeping records submitted by contractors to HPD, mail inquiries to individual workers' home addresses to confirm that employer-reported pay matches actual pay, and conduct site visits. At site visits, monitors may interview construction workers to verify that reported job classifications match the work being performed, and that all construction workers on the job site are accounted for in the prevailing wage payroll and timekeeping records. Large projects with more construction workers require more monitoring oversight than small projects with fewer construction workers. How much the monitoring staff would need to be expanded would depend upon how many additional HPD projects would become subject to the prevailing wage law and whether there is an increase in the average size of prevailing wage projects. Additional funds for any new staffing would need to be added to HPD's budget. Although HPD monitors projects for prevailing wage compliance, the agency is limited in its ability to penalize contractors with documented labor violations—the subject of an oversight hearing by the City Council in April.<sup>9</sup>

percent, a larger estimated increase than seen in the total construction cost estimate.<sup>8</sup> (A full regression table for the hard construction cost model is included in the [appendix](#)). It appears that at least a portion of the cost increase seen in project hard costs is absorbed elsewhere in the budget—the estimated increase in hard costs does not fully translate to total project cost. This suggests that some of the higher wage costs on prevailing wage projects are being offset by cutting costs elsewhere in the budget, such as lower soft costs (for example, hiring a less expensive architect) or taking less in developer fees.

### Conclusion

Using regression to control for other project characteristics that can influence project costs, IBO found that for affordable housing construction projects in recent years, there was on average an estimated 13 percent increase in total construction cost associated with prevailing wage requirements. Some of the increases estimated for hard costs appear to be absorbed in other

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areas of the construction budget, lessening the impact of higher construction wages on the overall project budget. Prevailing wage rules set hourly wage and fringe rates by construction trade, and also set rules for overtime, holidays, and pay schedules.

In comparing Davis-Bacon prevailing wages with the median wage earned in the various construction trades, prevailing wages are higher and expanding prevailing wages to additional affordable housing projects would increase the construction costs. Based on IBO's estimate of the impact of prevailing wages on total costs, at the median total cost per unit in our study, requiring prevailing wages translates to a per unit cost increase of almost \$45,000. At the end of 2015, HPD has approximately 69,000 more units to build towards the Housing New York goal of constructing 80,000 new affordable housing units. If 10 percent of these projects are assumed to already require prevailing wages under Davis-Bacon and prevailing wage laws were expanded to cover all other projects, these results suggest that housing investment for affordable housing new construction would have to increase by roughly \$2.8 billion to cover the higher construction costs. This estimate does not include any additional funding for preservation construction projects that may also be impacted by prevailing wage rules. In the latest version of the city's 10-year Capital Commitment Plan, the city

planned to put \$7.5 billion in capital funds towards the new construction and preservation of affordable housing. One alternative to expanding the housing capital budget in response to increased construction costs is to finance fewer affordable housing units.

Higher construction costs associated with the requirement of prevailing wages is just one factor within the larger debate over affordable housing construction. The data used in this analysis do not allow us to examine how prevailing wage requirements affect worksite safety, the timeliness in which projects reach completion, or the use of union labor. Proponents of prevailing wages argue that requiring prevailing wages reduces instances of worker wage theft, ensures fair pay for what can be dangerous work, and yields higher quality buildings built more quickly by better-trained workers. Opponents argue that prevailing wages unnecessarily increase construction costs and that the reporting requirements and work schedules slow projects down without improving building quality. They argue that, with limited public resources, less affordable housing will be built if prevailing wages were to be required. As the debate around expanding prevailing wage requirements continues, the impact that requiring prevailing wages will have on construction costs is an important consideration.

*Report prepared by Sarah Stefanski*



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## Appendix: Creating the Data Set Used in This Report

### ***Regression Analysis Restricted to New Construction.***

HPD provided IBO with data on all 1,454 housing projects financed from 2010 through 2015 that have at least one unit counted towards a mayoral housing plan. The data included both preservation and new construction projects. The preservation of affordable units refers to units where steps have been taken to allow existing affordable units to remain inhabitable and economically viable; preservation can range from debt refinancing to gut rehabilitation or some combination of both. The data did not distinguish between the range of preservation types, making it difficult to compare different types of preservation projects with each other and with new construction. Moreover, out of 71 projects that required prevailing wages, 57 were new construction, indicating that HPD is primarily using the HUD funding sources that trigger Davis-Bacon prevailing wages to finance new construction projects rather than preservation. For these reasons, the regression analysis was limited to new construction projects.<sup>10</sup>

***HPD Provided Data at Building and Project Levels.*** HPD provided two sets of data for 2010 through 2015. The first data set included the number of units reserved at different levels of affordability—extremely low income, low income, moderate income, middle income—at the building level, which corresponds to borough, block, and lot identifiers used for property tax administration. The second data set is cost data at the project level (projects can consist of one or more buildings or tax lots). Cost reporting reflects the cost for the number of affordable units HPD is counting towards a housing plan goal. For projects with market-rate housing, the total project cost is prorated down to the affordable development cost based on the number of affordable units, and the prorated amount is recorded by HPD to correspond with the affordable units HPD counts towards a housing plan goal. Because of this reporting format, construction costs were evaluated while controlling for the number of affordable units rather than total project units.

### ***Building-Level Data Matched to RPAD Property Records.***

Building-level data was compiled for all six years in the study, and then projects labeled as preservation were removed. Community districts were identified for buildings by borough, block, and lot. Properties were matched to the Department of Finance's property tax database (RPAD), but the usefulness of building-related data in RPAD was limited because a subset of projects, particularly ones financed in 2015, were not yet reflected on the property

tax rolls. Either new lots were subdivided out of old block and lot parcels that do not yet appear in RPAD, or RPAD had not yet been updated to reflect the new construction project. (For example, RPAD might still report a two-story garage on a given block and lot, which is now planned for demolition to make way for a 20-story residential building. In this example, therefore, the record for the garage is not useful for providing information on building characteristics or any property tax exemptions the new development is expected to receive.<sup>11</sup>) Tax lots that did not appear in RPAD were looked up through the NYCityMap GIS program and the Department of Building's Building Information Search system by street address and old lot number to identify the new blocks or lots that had been issued for these buildings.

### ***Building-Level Data Matched to New Construction***

***Building Permits.*** New construction building permits were identified for each building through the Department of Building's Building Information Search system by borough, block, and lot. Variables pulled from permit filings include: the number of stories in the building; total number of units in a building (which for a mixed-income development will be more than the number of affordable units reported by HPD); total planned residential, commercial, manufacturing, and community square feet; if the building included enclosed parking; if the building was owned by a nonprofit; and if the project was intended for mixed-use purposes. Because new construction permit data is self-reported by the filer, IBO verified these records where possible through NYCityMap and information provided by HPD.

***Building-Level Data Aggregated to Project Level.*** Since cost data was provided at the project level, building-level data was aggregated up to the project level in order to merge the two data sets. The resulting 298 projects, identified by project name and HPD program, comprised 518 different buildings.<sup>12</sup> The highest number of stories among multiple buildings in a project was recorded as the project building height. Total residential, commercial, manufacturing, and community square footage as well as the total number of units for buildings in a project were summed together. If at least one building included enclosed parking, then the project was indicated as including enclosed parking. All community districts that the project is located in were recorded (two projects spanned two community districts, while one scatter-site project spanned three community districts).

### ***Cost Data Matched to Building Data and Construction***

***Costs Indexed to 2015 Dollars.*** Project cost data was assembled together and the number of different financing

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sources for each project was identified. Project cost data was then matched to the rolled-up building level data by project name and HPD program. Three projects were excluded from the analysis: one project was unable to be matched up, a second project did not have any costs reported, and a third project was reported twice, but under different HPD programs. After matching the data sets together, the data set included 295 observations at the project level, all new construction. Construction cost variables were indexed to 2015 dollars using the Engineering News-Record 20-City Construction Cost Index averaged by city fiscal year.

***Inclusionary Housing and Other Exclusions.*** This analysis is concerned with the impact of expanding prevailing wages on the cost of building affordable housing. Projects in the HPD data that were created under the Inclusionary Housing program were excluded from this analysis. Inclusionary Housing typically takes the form of “80/20” projects, where 20 percent of the units are set aside as affordable housing in return for zoning bonuses. Inclusionary housing projects are therefore intended primarily to be market-rate housing. Additionally, the final construction budget for Inclusionary Housing projects may not be scrutinized by HPD to the same extent as affordable housing projects that require HPD financing to fill funding gaps, as inclusionary housing projects are privately financed. A total of 77 Inclusionary Housing projects were left out of the regression analysis.

Also not included in the regression analysis were two projects that did not have any information on enclosed parking indicated on the new construction building permits, and six projects where the hard cost per unit exceeded \$500,000. (In one case, hard costs exceeded \$2 million per unit.) IBO assumed that these high-cost units were reporting errors. The \$500,000 limit was chosen as it was the largest break in the distribution of cost per unit in the data set. Finally, four projects with no hard costs reported by HPD were dropped from the model that uses hard costs as the dependent variable, leaving a total of 206 projects with hard costs reported.

***Other Variables That Were Considered But Ultimately Not Included in Regression Models.*** Several variables were considered for inclusion in the model, but were found to not be informative and therefore were dropped in order to gain additional degrees of freedom. These variables include indicator variables for whether the project is located on a corner lot, projects with large average unit sizes, scattered-site housing, senior housing, and supportive housing. The main difference seen in senior and supportive housing

was that average unit size was smaller, and so this feature was better captured by including the average square foot per unit. Geography indicator variables at the smaller community district level were also considered, but the sparsity of observations across the city’s 59 community districts made it necessary to work at a higher level of geography. The new construction building permit data included information on whether the project was owned by a nonprofit organization. IBO chose not to include this variable in the model, however, because the owner and the developer are often different entities, and many affordable housing projects are done as a partnership between nonprofit and for-profit businesses, blurring much of this distinction.

### **Variable Descriptions**

***Construction Total Costs (logarithm):*** Total costs for the project as reported by HPD, not including land acquisition costs.

***Construction Hard Costs (logarithm):*** Hard costs for this analysis reflect the sum of budgeted hard costs and hard-cost contingencies as reported by HPD. Since it is unknown whether contingency funds are tapped, we assume that these funds are used. Hard costs represent materials and labor, and are exclusive of land acquisition costs, soft costs, soft-cost contingencies, developer fees, and project reserves.

***Requires Prevailing Wage:*** An indicator variable equaling one if a project requires prevailing wages to be paid under the Davis-Bacon and Related Acts. HPD provided information on which projects required prevailing wages.

***Percent Affordable:*** Percent of total project units that are reserved as affordable. The sum of low income, moderate income, middle income, and superintendent units reported by HPD was divided by the total number of units in the building reported by HPD and in the new construction building permits. The fraction is presented in percentage terms for ease of interpretation. This variable distinguishes between projects that are 100 percent affordable versus mixed-income projects.

***Affordable Units (logarithm):*** Since reported costs are in terms of the affordable units recorded by HPD, controlling for the number of affordable units is necessary. This variable was logged because the shape of the data indicated that there were some returns to scale for adding additional units to a project.

**Average Unit Size (Square Feet in 100s):** This variable was created by taking the total residential square footage reported in the new construction building permits and dividing it by the total number of units planned for the building. The underlying assumption is that for mixed-income projects, affordable units are, on average, the same size as the market rate apartments, which is a general design requirement for mixed-income projects. The variable was put in hundreds of square feet for ease of interpretation.

**Enclosed Parking:** An indicator variable equaling one if a building in a project reported enclosed parking on the new construction building permit filed with the Department of Buildings.

**Low-Rise, Mid-Rise, and High-Rise Project:** Low-rise projects contain buildings five or less stories tall. Mid-rise projects were classified as buildings from 6 to 15 stories. High-rise projects are 16 stories or taller. Building height was found to be highly correlated with the total square footage of the project (the sum of residential, commercial, manufacturing, and community space reported in the new construction building permits), as well as the total number of units in the project.

**Number of Financing Sources:** A count of the number of financing sources used to fund the project. The financing sources used for the projects were detailed in the project cost data from HPD.

**Core Area:** An indicator variable equaling one for projects located in Manhattan Community Districts 1 through 8 (the southern tip of Manhattan up to 110th Street on the west side and 96th street on the east side) and Brooklyn Community Districts 1, 2, and 6 (Greenpoint/Williamsburg, Fort Greene/Brooklyn Heights, and Park Slope/Carroll Gardens, respectively).

**Northern Manhattan, Outer Brooklyn, Bronx, Queens, and Staten Island:** Indicator variables for the geographies not coded as a core development area. The remaining community districts in Manhattan were coded as northern Manhattan and the remaining community districts in Brooklyn were coded as outer Brooklyn. The indicator variables Bronx, Queens, and Staten Island are at the borough level.

**Year 2010-Year 2015:** Indicator variables for the fiscal year in which the project was financed and affordable units were counted towards a mayoral housing plan goal.

## Regression Results for Hard Cost Impact Estimate

Model 2: Impact of Prevailing Wages on Hard Costs of Construction		
Dependent Variable: Log of Construction Hard Costs		
Variable	Parameter Estimate	Standard Error
Requires Prevailing Wages	0.17586	0.03022***
Percent Affordable	-0.00646	0.00165***
Log Affordable Units	0.91266	0.02097***
Average Unit Size (Square Feet in 100s)	0.04963	0.00608***
Enclosed Parking	0.07316	0.02638***
Low-Rise Project	-0.00820	0.04648
High-Rise Project	0.18744	0.06001***
Number of Financing Sources	0.02541	0.00670***
Northern Manhattan	-0.02678	0.05966
Bronx	-0.13649	0.04720***
Outer Brooklyn	-0.07422	0.05031
Queens	-0.19244	0.05204***
Staten Island	-0.06735	0.09738
Year 2010	-0.09837	0.03913**
Year 2011	-0.08057	0.03889**
Year 2012	-0.10887	0.04124***
Year 2013	-0.11216	0.04070***
Year 2014	-0.02815	0.03765
Constant	12.97392	0.19182***
N	206	
R-Squared	0.9527	
SOURCES: IBO analysis of Department of Housing Preservation and Development and Department of Buildings data		
NOTES: One asterisk (*) denotes statistical significance at the 10 percent level, two asterisks (**) denote statistical significance at the 5 percent level, and three asterisks (***) denote statistical significance at the 1 percent level. Low-rise and high-rise projects are relative to a mid-rise project, geographical parameter estimates are relative to core Manhattan and Brooklyn locations, and year parameter estimates are relative to 2015.		
New York City Independent Budget Office		

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## Endnotes

<sup>1</sup>The term “living wage” is often used in a general context to refer to the hourly wage a worker would need to earn in order to fall above a given poverty threshold. New York City’s living wage law sets a specific wage floor for workers under many city contracts and city-subsidized economic development projects. Living wage is currently set at \$11.50 per hour plus \$1.63 per hour in fringe benefits (or additional wage in lieu of benefits), and is tied to the inflation rate. The state’s minimum wage has two levels, one for tipped workers and another for other workers.

<sup>2</sup>The Citizens Budget Commission did a similar comparison of hourly wage for Section 220 wages to the mean of New York City metro wages reported through the Bureau of Labor Statistics and concluded that prevailing wages were “almost universally higher.” See Maria Doulis, *Six Things New Yorkers Should Know About Prevailing Wages*, Citizens Budget Commission (February 2012). Proponents of prevailing wages acknowledge higher wages, but then counter this with claims that higher labor costs are offset by greater productivity and a better trained workforce. See Fiscal Policy Institute, *The Economic Development Benefits of Prevailing Wage* (May 2006).

<sup>3</sup>Roistacher, Elizabeth A., Jerilyn Perine, and Harold Shultz, *Prevailing Wisdom: The Potential Impact of Prevailing Wages on Affordable Housing*, Citizens Housing and Planning Council (December 2008).

<sup>4</sup>Dunn, Sarah, John M. Quigley, and Larry A. Rosenthal, “The Effects of Prevailing Wage Requirements on the Cost of Low-Income Housing,” *Industrial and Labor Relations Review*, vol. 59, no. 1 (October 2005), pp. 141-157.

<sup>5</sup>Projects financed between 2010 and December 2013 were counted towards Former Mayor Bloomberg’s *New Housing Marketplace Plan* development goals while projects financed from January 2014 through 2015 were counted towards Mayor de Blasio’s *Housing New York* development goals.

<sup>6</sup>The confidence interval for the prevailing wage parameter estimate at an alpha level of 0.05 is from 4 percent to 22 percent. Robust standard errors were used. Because the dependent variable is the natural log of total project costs, the percentage change in cost is interpreted as the exponentiated coefficient on that variable.

<sup>7</sup>A total of 69 projects received free land or paid \$1 per lot. Other projects appear to have paid less than the market rate for land, while other projects paid market-rate prices up to \$34 million. Converting land prices into inflation-

adjusted dollar terms is problematic, as land prices fluctuate year to year apart from standard price indices. Given such variation, land acquisition costs were found to create more noise than value in the analysis, and were ultimately not included in the total cost regression model.

<sup>8</sup>The confidence interval for the prevailing wage parameter estimate at an alpha level of 0.05 is from 12 percent to 27 percent. Robust standard errors were used. A similar result of a higher estimated impact of prevailing wages on hard costs relative to total costs was seen in the referenced California study. The authors for that report found a larger prevailing wages impact on “site and structure costs” (site preparation and construction hard costs) than compared to total development costs.

<sup>9</sup>The transcript of the April 21, 2015 City Council Hearing titled “[Oversight—The Mayor’s Housing Plan: Contractor Employment Practices and Accountability](#).”

<sup>10</sup>Although recorded by HPD as new construction, affordable units served under HPD’s HomeFirst Down Payment Assistance Program were not considered new construction for the purposes of this analysis. HomeFirst program participants receive a grant towards down payment assistance and closing costs to purchase a one- to four-family home, condominium, or cooperative in the city. HPD classifies HomeFirst units as new construction in its reporting since this program is not maintaining existing affordable housing (preservation), but instead adds to the number of affordable units in the city. These units, however, are generally existing houses, not new buildings being constructed. HPD recorded 212 HomeFirst projects from 2010 through 2015.

<sup>11</sup>The impact of receiving a property tax benefit on residential housing construction was considered, although did not factor into the final regression analysis. Property tax benefits, including 421-a, 420-c, Article XI, and Urban Development Action Area Projects were flagged in the Department of Finance RPAD data, but no tax benefits were recorded for projects financed in 2015, and a much smaller share of projects financed in 2014 were flagged for a property tax exemption than seen for earlier years. This indicated that many recently financed projects may have property tax exemptions that are not reflected in the RPAD records. Most of these projects would qualify for as-of-right property tax exemptions such as 421-a.

<sup>12</sup>One project was listed in the cost data but not the building-level data. Building characteristics were pulled from the new construction building permit and NYCMap and added to the building-level data set provided by HPD.

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