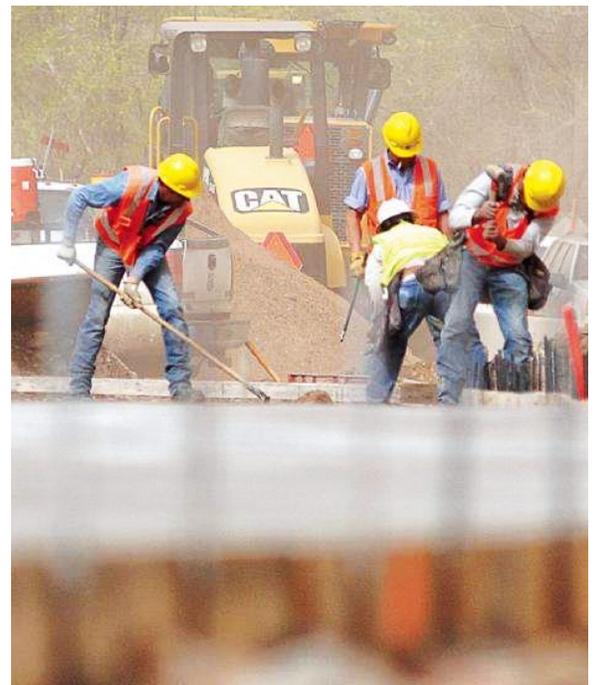


An Examination of the Economic Effects of a Potential Responsible Bidder Ordinance for St. Petersburg, FL

October 2018



Dewey Caruthers
President, The Caruthers Institute

Kevin Duncan, Ph. D.
Professor of Economics, Colorado State University-Pueblo

Frank Manzo, MPP
Policy Director, Illinois Economic Policy Institute

This study received funding from the Raise the B.A.R. campaign.

TABLE OF CONTENTS

About the Authors	i
Acknowledgements	ii
Executive Summary	iii
Introduction to the Public Construction Market and Responsible Bidding	1
Economic Conditions of Local Construction Workers	4
Addressing Injury Rates and Instability Through Apprenticeship Training <i>Training Solutions Best Practices</i>	6 12
Registered Apprenticeship is an Economic and Workforce Development Goal <i>Improved Opportunities for Minorities in the Local Construction Industry</i>	14 17
A Responsible Bidder Ordinance Would Control Construction Costs	19
A Responsible Bidder Ordinance Would Strengthen the Local Economy	23
Appendix	29
Cover Photo Credits	34

ABOUT THE AUTHORS

Dewey Caruthers is the president of The Caruthers Institute, a nonprofit, nonpartisan think tank with the mission of data-driven social change.

Kevin Duncan, PhD is a Professor of Economics at Colorado State University–Pueblo.

Frank Manzo IV, MPP is the policy director of the Illinois Economic Policy Institute and the Midwest Economic Policy Institute.

ACKNOWLEDGEMENTS

This study was undertaken by The Caruthers Institute – a nonprofit, nonpartisan think tank – in cooperation with two national experts. This study is funded by the Raise the B.A.R St. Petersburg campaign. The Institute often acts as a non-independent research arm for organizations to gather and report data for decision-making by elected officials and community leaders.

This report was initiated to assess the economic conditions and activity of the construction labor force in the St. Petersburg metropolitan area. It assesses the local living standards of the workforce currently and assesses options for creating widespread positive economic impacts that the City might implement through responsible public contracting policies.

Additionally, the data and policy analyses consider the potential outcomes of an adopted Responsible Bidder Ordinance that would set new standards for contractors bidding on and being awarded construction contracts funded by the city, including apprenticeship utilization, responsible wages, safety training, cost impacts, and reporting transparency.

EXECUTIVE SUMMARY

The Florida economy has grown significantly in the aftermath of the Great Recession. Since January 2010, the state has added 2 million jobs. Unfortunately, not all workers have gained from this economic expansion.

Construction workers, in particular, have lagged behind. While construction workers in St. Petersburg build the infrastructure that supports the entire local economy, they do not, on average, earn middle-class incomes. Local construction workers also have higher on-the-job fatality rates than other workers across Florida.

This does not have to be the case moving forward, however, as the City of St. Petersburg plans to spend nearly \$1 billion (\$906 million) in its five-year capital improvement plan (FY 18-22). One policy tool available to the city to address these problems is the adoption of a Responsible Bidder Ordinance (RBO) that covers city-procured construction projects. Public construction bidding is not like the private sector. Governments in Florida are required to select the lowest bidder, which puts added pressure on contractors to lower their bids however possible, including by reducing worker wages and by jettisoning critical long-term investments such as skills and safety training.

A local RBO would provide for government consideration of criteria *in addition to* the low bid when awarding city contracts. For example, participating contractors could be asked to provide evidence and records of previous performance on public projects, appropriate licensing, participation in OSHA safety training, disclosure of labor law and safety violations, and compliance with drug-free workplace standards.

The policy would also maintain compliance with the city's apprenticeship standards to ensure skills training for government projects. It would establish local minimum wage rates for each construction trade on projects procured by the city based on what skilled craft workers in the community are paid for comparable work. Finally, the policy would provide for compliance monitoring, enforcement, and penalties for non-compliance and false certifications.

It is important to note that an RBO policy in St. Petersburg would only apply to taxpayer-funded projects. An RBO policy would not apply to the private sector.

There are seven key benefits to an RBO for the City of St. Petersburg. An RBO would:

1. Reduce reliance on public assistance;
2. Promote pathways into the middle class;
3. Boost investment into apprenticeship training;
4. Improve safety in a dangerous industry;
5. Improve opportunities for minorities;
6. Keep construction costs stable; and
7. Strengthen the local economy.

A strong St. Petersburg is built locally with highly-trained workers. A Responsible Bidder Ordinance would strengthen the local economy while addressing the bad outcomes associated with public procurement. An RBO would be a great value for St. Petersburg's families, businesses, and taxpayers.

1. Reduce Reliance on Public Assistance

- The share of local construction workers below or near poverty is 23%, resulting in 18% of them qualifying for and receiving food stamps.
- By boosting standards and quality, an RBO would lift nearly 1,110 local construction workers out of poverty, reduce food stamp reliance by 300 workers, and reduce public Medicaid spending on more than 130 construction workers in the local economy.

2. Promote Pathways into the Middle Class

- Local construction workers earn 26% less than the average for all workers in the area and only 38.5% of them are covered by employer-provided health insurance.
- An RBO would boost construction worker earnings by an average of about 9%.

3. Boost Investment in Apprenticeship Training

- By promoting registered apprenticeship programs, an RBO would promote the hiring, development, and retention of skilled workers and improve craftsmanship.
- Fully 45% of all apprenticeship graduates in Florida graduate from joint labor-management (JATC) apprenticeship programs. JATC programs have an 18% higher completion rate and offer higher entry-level pay to apprentices than single contractor-only programs.

4. Improve Safety in a Dangerous Industry

- Construction is a particularly dangerous sector of employment in Florida. From 2014 through 2016, the on-the-job fatality rate for construction workers was 18.8 deaths per 100,000 workers— 10% higher than the national average for the occupation.
- Construction accounts for 22% of all occupational fatalities in Florida.

5. Improve Opportunities for Minorities

- There is a strong correlation with higher representation of African American workers in construction where registered apprenticeship programs prevail as industry practice.
- Responsible bidding standards have a strong track record of encouraging contractors to hire and train African Americans and other workers from underserved communities.

6. Keep Construction Costs Stable

- Labor costs account for a low and historically declining share of total costs in construction, representing just 20% of total construction costs in Florida.
- Wages and productivity are linked: As construction wage rise, the use of skilled local workers increases and more equipment and machinery are used— enhancing labor productivity.

7. Strengthen the Economy

- Additional spending by the local blue-collar construction workforce would increase annual consumer demand, creating 19 new jobs and boosting the local economy by \$3 million per year. The result would be \$111,000 in additional state and local tax revenues per year.
- If an RBO were applied to the five-year capital improvement plan for the City of St. Petersburg, it would boost the local economy by \$17 million, create 108 additional jobs, and generate \$630,000 in state and local sales tax revenue.

INTRODUCTION TO THE PUBLIC CONSTRUCTION MARKET AND RESPONSIBLE BIDDING

A Responsible Bidder Ordinance creates a level playing field for all construction contractors by ensuring that public expenditures reflect local market standards for compensation and craftsmanship. Public construction bidding is not like the private sector. Governments in Florida are required to select the lowest bidder, which puts added pressure on contractors to engage in cutthroat bidding and labor abuses. In the low-bid model, contractors aim to lower their bids however possible, including by reducing worker wages and by jettisoning critical long-term investments such as apprenticeship training to win the short-term work. A Responsible Bidder Ordinance levels the playing field, allowing local contractors and local workers a fair shot at these government projects and incentivizing competition based on core competencies rather than on the basis of low pay.¹

A Responsible Bidder Ordinance provides for considerations of criteria *in addition to* the low bid when awarding city contractors. For example, participating contractors could be asked to provide evidence and records of

City of St. Petersburg
Construction
Expenditures FY 18-22
BY THE NUMBERS

\$779
million

Estimated dollars of planned
improvements that will
involve construction activity

86%

Estimated percent of planned
improvements that will
involve construction activity

¹ See Peter Philips (2015). "Prevailing Wages and the Free Market." Accessed at <https://www.scribd.com/document/290421784/Phillips-Prevailing-Wages-and-the-Free-Market>.



An RBO would apply only to taxpayer-funded construction projects and would not apply to the private sector.

previous performance on public projects, appropriate licensing, participation in OSHA safety training, disclosure of labor law and safety violations, and compliance with drug-free workplace standards. The policy would also

maintain compliance with the city's apprenticeship standards by requiring subcontractors to maintain or participate in apprenticeship programs. Furthermore, the policy would establish local minimum wages for each construction trade on projects procured by the City of St. Petersburg based on what skilled craft workers in the community are paid for comparable work. Total compensation would include the minimum hourly wage rates as well as health insurance and retirement benefits as negotiated in private contracts representing applicable classifications of construction workers. Finally, the policy would provide for compliance monitoring, enforcement, and penalties for non-compliance and false certifications.

Such a policy would enable contractors to pay wages and fringe benefits that attract, develop, and retain experienced workers and reduce the likelihood that those same workers will need to rely on public assistance to make ends meet. This "high road" framework for the construction industry would promote the training of skilled construction workers who are required to build the infrastructure needed for economically thriving and globally competitive communities. In an economy where 70% of contractors are having a hard time finding qualified



An RBO would help St. Petersburg contractors train and retain the skilled workers who will build nearly \$1 billion in local infrastructure improvements by 2022.

craft workers, a Responsible Bidder Ordinance would be a commonsense way to encourage skilled local workers to enter the trades by investing in apprenticeship training programs.²

The purpose of this study is to examine the impacts of the City of St. Petersburg adopting a Responsible Bidder Ordinance. Specifically, the study

will examine the effect of the responsible bidding standards on the incomes of local construction workers and the economic impact of increased construction worker incomes on Pinellas County and Hillsborough County. Due to the inherent instability of the industry, there is presently an absence of incentives to formally train workers in construction. The study will illustrate how a potential Responsible Bidder Ordinance could create incentives to use apprentices as well as providing resources for apprentice training programs. By promoting formal training, the policy could also reduce construction injury and fatality rates. The effect of the policy on opportunities for local minority workers is also explored as well as the expected effect on construction costs.

² See Associated General Contractors of America (2017). "Seventy-Percent of Contractors Have a Hard Time Finding Qualified Craft Workers to Hire Amid Growing Construction Demand, National Survey Finds." Accessed at: <https://www.agc.org/news/2017/08/29/seventy-percent-contractors-have-hard-time-finding-qualified-craft-workers-hire-am-0>.

ECONOMIC CONDITIONS OF LOCAL CONSTRUCTION WORKERS

A recent study by Florida International University finds that not all workers in the Sunshine State have benefited from the growing economy and expansion of employment.³ For example, the hourly wage rate of the typical worker in Florida has increased by \$1.27 per hour over the last 17 years. This current study finds that local construction workers lag behind others. In spite of their important role in building the infrastructure that is the basis of the local economy, construction workers in Pinellas County earn about 26% less than the average for all workers in the county (about \$34,000 versus approximately \$46,000).⁴ Employer-provided health insurance covers about 38.5% of the local construction labor force, or a coverage rate that is 24.2 percentage points lower than the average of 62.6% for all local workers. Moreover, the share of blue-collar construction workers eligible for and receiving Supplemental Nutrition Assistance Program (SNAP) food stamp assistance is 18.0%. The high rates of local reliance on food stamp assistance are the result of about one-quarter of all blue-collar construction workers earning annual incomes that place them below 150% of the official poverty line (23.3%). These are not

Public Assistance Reliance BY THE NUMBERS

1-in-4

Portion of local construction workers below or near poverty

18%

Percent receiving food stamps

³ See "State of Working Florida 2018," Center for Labor Research & Studies, Florida International University. Accessed at: <https://labor.fiu.edu/publications/state-of-working-florida/state-of-working-florida-2018-2.pdf>

⁴ Information in this section was obtained from the 2016 *American Community Survey* (5-year estimates) data from the U.S. Census Bureau is made publicly available by the University of Minnesota. Steven Ruggles, Sarah Flood, Ronald Goeken, Josiah Grover, Erin Meyer, Jose Pacas, and Matthew Sobek. IPUMS USA: Version 8.0 [dataset]. Minneapolis, MN: IPUMS, 2018. <https://doi.org/10.18128/D010.V8.0>.

”
An RBO would reduce reliance on social safety net programs, resulting in 300 fewer local construction workers on food stamps.

the kind of labor market outcomes that attract and retain skilled and career-oriented workers to the construction industry.

A statewide analysis of blue-collar construction workers in Florida and other research can be used to illustrate how responsible bidding

policies would affect workers in the local construction St. Petersburg-area labor market, including Pinellas County and Hillsborough County.⁵ Responsible bidding policies boost local construction worker incomes by an average of 8.7%.⁶ This increase in income is sufficient to lift nearly 1,100 construction workers out of poverty in Pinellas County and Hillsborough County. This represents a 2.5 percentage point drop in local construction workers who are below or near the official poverty line. In addition, about 400 more blue-collar construction workers could

⁵ Details of this analysis are presented in Appendix A.

⁶ Numerous studies measure the change in construction worker incomes associated with changes in prevailing wage laws. The average of 8.7% is based on the following studies. These include national studies as well as research specializing in or near the southern U.S. See Michael Kelsay (2016). “The Adverse Economic Impact From Repeal of the Prevailing Wage Law in Missouri.” Accessed at: <http://www.protectmofamilies.com/wp-content/uploads/2017/03/2016-Kelsay-Adverse-Effects-of-Repealing-Prevailing-Wage-in-Missouri.pdf>, Frank Manzo and Kevin Duncan (2018). “The Effect of Repealing Common Construction Wage in Indiana: Impact on Ten Construction Market Outcomes.” Accessed at: <https://midwestepi.files.wordpress.com/2018/01/mepi-csu-effects-of-repealing-common-construction-wage-in-indiana-final.pdf>, Kevin Duncan and Frank Manzo (2016). “The Economic, Fiscal, and Social Effects of Kentucky’s Prevailing Wage Law.” Accessed at: <https://illinoisepi.org/site/wp-content/themes/hollow/docs/prevailing-wage/kentucky-report-duncan-and-manzo-2016-final.pdf>, Frank Manzo, Alex Lantsberg, and Kevin Duncan (2016). “The Economic, Fiscal, and Social Impacts of State Prevailing Wage Laws: Choosing Between the High Road and the Low Road in the Construction Industry.” Accessed at: <https://illinoisepi.org/site/wp-content/themes/hollow/docs/prevailing-wage/pw-national-impact-study-final2-9-16.pdf>, and Ari Fenn, Zhi Li, Gabriel Pleites, Chimedlkham Zorigtbaatar, and Peter Philips (2018). “The Effect of Prevailing Wage Repeals on Construction Incomes and Benefits.” *Public Works Management & Policy*, DOI: 10.1177/1087724X18758340, pp 1-19. The change in benefits data was obtained from Ari Fenn, Zhi Li, Gabriel Pleites, Chimedlkham Zorigtbaatar, and Peter Philips (2018). “The Effect of Prevailing Wage Repeals on Construction Incomes and Benefits.” *Public Works Management & Policy*, DOI: 10.1177/1087724X18758340, pp 1-19. See “Employer Costs for Employee Compensation.” Economic News Release, Bureau of Labor Statistics, U.S. Department of Labor. Accessed at: <https://www.bls.gov/news.release/eccec.toc.htm>.

RBO Impact on Workers BY THE NUMBERS

9%

Increase in construction worker earnings due to Responsible Bidder Ordinance

1,100

Fewer blue-collar construction workers in poverty due to Responsible Bidder Ordinance

receive employer-provided pension coverage. Such a policy impact would reduce the share of construction workers qualifying for SNAP food stamp assistance by over 300 workers, a 0.7 percentage point drop in food stamp reliance. By improving health insurance coverage, the policy would also reduce public Medicaid spending on more than 130 blue-collar construction workers (-0.3 percentage point) in the St. Petersburg area. Ultimately, a Responsible Bidder Ordinance would contribute to self-sufficient, middle-class careers for area

construction workers. This would help stabilize the local labor force and encourage skilled workers to seek employment in the industry.⁷

ADDRESSING INJURY RATES AND INSTABILITY THROUGH APPRENTICESHIP TRAINING

Construction is one of the most perilous occupations. Construction workers are exposed to many hazardous tasks and conditions such as working at height and in confined spaces, excavations, exposure to dust and loud noises, and the use of heavy equipment, power tools,

⁷ Peer-reviewed research indicates construction worker retention in the construction industry increases with higher quality health insurance coverage. See Kim, Jaewhan and Philips, Peter, "Health Insurance and Worker Retention in the Construction Industry," *Journal of Labor Research*, 2010, Volume 31, Number 1, 20-38.

Construction trades represent just 3% of the workforce but represent 21% of the on-the-job fatalities.

the-job fatalities that year (21%).⁸

In construction, there four primary causes of workplace fatalities that accounted for 64% of all deaths in 2016. These leading causes of deaths at construction sites were falls (39%), being struck by objects (9%), electrocutions (8%), and crush injuries (7%).⁹ Nonfatal injuries are also disproportionately high in construction, with the industry representing 6.4% of all nonfatal injuries in the private sector.¹⁰

Fatality rates are higher among workers in Florida's construction and extraction occupations than the comparable U.S. average. Using data from the Bureau of Labor Statistics at the U.S. Department of Labor, Table 1 assesses the average

1-in-5

CONSTRUCTION FATALITIES
The construction industry is responsible for more than one in five on-the-job fatalities

⁸ Based on data obtained from the May 2016 Occupational Employment Statistics by the Bureau of Labor Statistics; https://www.bls.gov/oes/2016/may/oes_nat.htm#47-0000. Based on average annual employment obtained from the Quarterly Census of Wages and Employment; Accessed at: <http://www.bls.gov/data/>. In 2014, fatalities in construction were 874 deaths followed by 735 in transportation and warehousing, 568 in agriculture, forestry, fishing, and hunting and a total of 4,251 deaths for all private industry in this year. Data obtained from TABLE A-1. Fatal Occupational Injuries by Industry and Event or Exposure, all United States, 2014, Bureau of Labor Statistics, U.S. Department of Labor, September 17, 2015. Accessed at: <http://www.bls.gov/iif/oshwc/cfoi/cftb0286.pdf>.

⁹ See Commonly Used Statistics, Occupational Safety & Health Administration, U.S. Department of Labor. Accessed at <https://www.osha.gov/oshstats/commonstats.html>.

¹⁰ See Nonfatal Occupational Injuries and Illness Requiring Days Away from Work, 2014, Bureau of Labor Statistics, U.S. Department of Labor, November 19, 2015. Accessed at <http://www.bls.gov/news.release/pdf/osh2.pdf>.

number of fatal injuries in the construction and extraction trades in both Florida and the United States from 2014 through 2016 against the average employment in this occupation over that time. This produces a fatality rate per 100,000 construction and extraction workers. The results are then compared to the average on-the-job fatality rates for all workers in Florida and all workers across the United States.

The findings indicate that construction is a particularly dangerous sector of employment for Florida workers (Table 1). Over the three-year period from 2014 through 2016, an average of 60.3 construction and extraction workers died on the job annually in Florida. Based on the average employment level of 320,593 workers in these careers, the fatality rate was 18.8 deaths per 100,000 workers. This is 10% higher than the comparable national average of 17.1 deaths per 100,000 construction and extraction employees. It is also over 5 times higher than the average fatal injury rate of 3.4 deaths per 100,000 employees for the entire workforce in Florida. Of the 809 total workplace fatalities in Florida from 2014 through 2016, construction and extraction occupations accounted for 181 deaths, or 22% of all on-the-job fatalities.

Table 1. On-the-Job Fatalities, Total Employment, and Fatal Injury Rates by Occupation in Florida and the United States, 2014-2016

Occupation	Geography	Total On-the-Job Fatalities	Average Fatalities Per Year	Average Employment Per Year	Fatality Rate Per 100,000 Workers
Workers in construction and extraction occupations	Florida	181	60.3	320,593	18.82
	United States	2,796	932.0	5,451,170	17.10
All workers in all occupations	Florida	809	269.7	7,937,537	3.40
	United States	14,847	4,949.0	137,808,320	3.59

Source: Bureau of Labor Statistics at the U.S. Department of Labor: Census of Fatal Occupational Injuries data for 2014, 2015, and 2016 and Occupational Employment Statistics data for May 2014, May 2015, and May 2016.



On average, about 60 Florida construction workers die on the job each year.

This data is troubling. However, there is also hope to be found in the research: a range of studies indicate that workers who receive formal training are less likely to suffer on-the-job injuries.¹¹ In particular, registered apprenticeship

programs deliver positive outcomes affecting safety on the job.

One way to understand the relationship between training and injury rates is by comparing union workers, most of whom have either completed or are currently enrolled in joint labor-management apprenticeship training programs, to nonunion construction workers, who are far less likely to have been exposed to formal apprenticeship training and more likely to participate in a training program sponsored only by a single contractor. For example, a study conducted by the Institute for Research on Labor, Employment and the Economy at the University of Michigan examines the effect of union membership on construction occupation fatalities in the U.S. between 2003 and 2009.¹² Results indicate that a 1% increase in a state's construction unionization rate is associated with a decrease in fatalities per thousand worker of 0.22%. When this effect is evaluated at the average number of construction worker deaths over the period, the average falls by 1.94 fatalities per 100,000 construction workers. This effect of

¹¹ See Harry Miller, Tara Hill, Kris Mason, and John Gall (2013). "An Analysis of Safety Culture & Safety Training: Comparing the Impact of Union, Non-union, and Right to Work Construction Venues." *Online Journal of Workforce Education and Development*, Vol. 6, Issue 2, pp. 1-13. Accessed at: <http://opensiuc.lib.siu.edu/ojwed/vol6/iss2/5/> and Rolland Zullo (2011). "Right-to-Work Laws and Fatalities in Construction." Ann Arbor, MI: Institute for Research on Labor, Employment, and the Economy, University of Michigan. Accessed at: <http://irlee.umich.edu/?page=publications>.

¹² See Zullo, Rolland. 2011. "Right-to-Work Laws and Fatalities in Construction." Ann Arbor, MI: Institute for Research on Labor, Employment, and the Economy, University of Michigan. Accessed at: <http://irlee.umich.edu/?page=publications>. The analysis takes into consideration the type of work conducted, worker productivity, year, and whether or not the state has an OSHA-approved health and safety program.

joint labor-management programs on reducing the construction occupation fatality rate is statistically significant. Likewise, a city-level study comparison of OSHA worksite safety violations between union and nonunion wood framing contractors in St. Louis, Missouri found that the average number of violations for worksites staffed by union workers and signatory contractors was 1.57 per worksite. For nonunion worksites the average was 4.77 violations per worksite. This difference is statistically significant.¹³

Research also suggests that labor-management programs for training are more effective than programs sponsored by employer-only groups in promoting safety in the construction industry. For example, a team of medical and health researchers examined worker perceptions and experiences regarding job safety.¹⁴ Results of the study indicate that unionized construction workers were more likely to be made aware of dangerous work practices, have received safety instructions when hired, and have regular job safety meetings. These workers were also less likely to perceive risk taking as a part of their job. Moreover, Professor Weil asserts that worker organizations play a critical role in ensuring the enforcement of safety and health policies in the construction industry because they encourage workers to exercise their rights under OSHA.¹⁵ These studies suggest that registered training programs involving labor-management cooperation are most strongly associated with reduced injury rates in construction.

¹³ Miller, Harry, Hill Tara, Mason, Kris, and Gall, John (2013). "An Analysis of Safety Culture & Safety Training: Comparing the Impact of Union, Non-union, and Right to Work Construction Venues." *Online Journal of Workforce Education and Development*, Vol. 6, Issue 2, pp. 1-13. Accessed at: <http://opensiuc.lib.siu.edu/ojwed/vol6/iss2/5/>.

¹⁴ See Gillen, Marion, Baltz, Davis, Gassel, Margy, Kirsch, Luz and Vaccaro, Diane (2002). "Perceived Safety Climate, Job Demands, and Coworker Support among Union and Nonunion Injured Construction Workers." *Journal of Safety Research*, Vol. 33, No. 1, pp. 33-51. Accessed at: <http://www.sciencedirect.com/science/article/pii/S0022437502000026>.

¹⁵ Weil, David. (1991). "Building safety: The role of construction unions in the enforcement of OSHA." *Journal of Labor Research*, Vol. 13, Issue 1, pp. 121-132 and "Enforcing OSHA: The Role of Labor Unions." *Industrial Relations*, Vol. 3, No.1, winter, 1991, pp. 20-36.

As a consequence, quality registered apprenticeship programs play an important role in reducing injuries in the industry. A trained and skilled construction workforce is needed to reduce injuries and stabilize construction costs. However, in construction, there is a need for a skilled labor force that can build customized projects. Unlike manufacturing where the product and the production process are relatively uniform, most construction output is not standardized. Outside of residential construction, the majority of building sites, designs, and logistics vary from project to project. Broadly-trained craft workers are needed to adjust to the non-routine aspects of customized construction.

Construction is also distinct from other industries in that the inherent instability of building activity creates strong disincentives for employers and employees to invest in the type of training that leads to a highly skilled, efficient, and safe workforce. Due to fluctuations in seasons and economic activity, construction is the most unstable sector of the U.S. economy. Economic fluctuations exacerbate the training problem in construction, with downturns resulting in fewer jobs for trainable young people followed by a shortage of skilled workers when the economy expands. While concerns about skill shortages have been prevalent in construction for decades, the damage wrought by the Great Recession on the construction industry has greatly exacerbated the problem. A steep decline in construction demand caused industry employment to decline by 25% between 2006 and 2010, with contractors responding to economic instability by retaining older, more experienced workers while demonstrating reluctance to hire and train

younger workers. The result has been a particularly acute shortage of skilled construction workers during the present economic expansion.¹⁶

The end result of instability in the construction industry is a loose attachment between contractors and their employees. When work is available, contractors take on additional workers, but shed employees when a project is completed, the season comes to an end, or the economy slows. As a consequence, there is little incentive for contractors to incur the expenses associated with training. There is no guarantee that the trained worker will be retained and it is likely that at some point a trained employee may work for a competing contractor. From the worker's perspective, there is also little incentive to incur the costs of training due to intermittent spells of unemployment between building projects, transitions to work in other industries, and seasonal layoffs.¹⁷

Training Solutions Best Practices

A portion of the construction industry has responded to the mismatch between strong disincentives to train and the need for a skilled, safe, and sustained workforce by creating formal apprenticeship training programs. Apprenticeships typically involve a mix of on-the-job training and in-class theoretical education that covers the basic and specialized skills of a particular craft,

¹⁶ See Janicki, Hubert and McEntarfer, Erika. (2015). "Where Did All the Construction Workers Go?" Research Matters, U.S. Census Bureau. Accessed at: <http://researchmatters.blogs.census.gov/2015/10/16/where-did-all-the-construction-workers-go/> and Paciorek, Andrew. (2015.) "Where are the Construction Workers," Fed Notes, Board of Governors of the Federal Reserve System. Accessed at: <http://www.federalreserve.gov/econresdata/notes/feds-notes/2015/where-are-the-construction-workers-20150226.html>.

¹⁷ For a detailed explanation see Philips, Peter, "Dual Worlds: The Two Growth Paths in U.S. Construction," in *Building Chaos: An International Comparison of the Effects of Deregulation on the Construction*, (Peter Philips and Gerhard Bosch, eds.) Routledge Press, London, 2003.

such as for laborers, plumbers, electricians, or operating engineers.¹⁸ During the on-the-job component of training, the apprentice earns less than the fully-trained journeyworker.¹⁹ With this arrangement, the cost of training workers is shared between the apprentice and the employers who are sponsoring the training. Accordingly, apprenticeship programs address the disincentives that discourage employers and workers from pursuing training. Upon successful completion of the program, the apprentice becomes a certified journeyworker. The program results in a relatively homogenous skilled workforce in an industry that is otherwise largely free of certifications that reveal worker qualifications.

There are significant differences between contractor-sponsored (or “open shop”) apprenticeship programs and joint labor-management apprenticeship programs, also called JATC training programs. Funding for training in most JATC training programs is financed by a “cents per hour” investment that is part of the total wage and benefit package negotiated with participating contractors. These types of resources are rare in contractor-sponsored training arrangements where contractors pay for the cost of training directly. The important distinction is that, under the JATC system, the costs of training the next generation of workers is included in project bids. This is not the case under the contractor-sponsored arrangement.²⁰ Registered apprenticeships are much less common in this sector, though where they exist they are generally

¹⁸ On-the-job training ranges between 6,000 to 8,000 hours (3-4 years) with in-class instruction ranging between 430 to 580 hours. See Bilginsoy, Cihan (2003). “The Hazards of Training: Attrition and Retention in Construction Industry Apprenticeship Programs.” *Industrial and Labor Relations Review*, Vol. 27, Issue 1, pp. 54-67.

¹⁹ Compensation varies with the program, but usually starts at 50% of the hourly rate for the corresponding journey worker and increases with progression through the training program. See Bilginsoy, Cihan (2007). “Delivering Skills: Apprenticeship Program Sponsorship and Transition from Training.” *Industrial Relations*, Vol. 46, No. 4, pp. 738-763.

²⁰ See Construction Industry Institute (2007). “Construction Industry Craft Training in the United States and Canada.” Accessed at <http://ps.businesssocialinc.com/media/uploads/abceastflorida/craftstudy.pdf>

established by individual employers rather than by a regional employer association or labor-management organization. Consistent funding and the maintenance of transferable industry-recognized training standards have therefore been a weakness for the single contractor-sponsored model.²¹

REGISTERED APPRENTICESHIP IS AN ECONOMIC AND WORKFORCE DEVELOPMENT GOAL

The Office of Apprenticeships at the U.S. Department of Labor works in conjunction with approved State Apprenticeship Agencies to set basic standards for formal apprenticeship training. Within this framework, sponsors have freedom to determine program content, applicant qualifications, and other aspects of the program.²² In the “open shop” segment of the construction industry, apprenticeship programs are sponsored by a single contractor or by groups of nonunion employers. These employers unilaterally determine program content, set entry requirements, select apprenticeships, and monitor trainee progress. In the JATC sector,

²¹ Nonunion training programs such as those offered by the Associated Builders and Contractors are characterized by task driven and modular training with a lower priority placed on the full-scope craft training characteristic of union-sponsored training programs. See Associated Builders and Contractors, Inc. “Craft Training & Apprenticeship.” Accessed at: <http://www.abc.org/en-us/educationtraining/crafttrainingapprenticeship.aspx> and See Vincent, Jeff (2004). “Analysis of Construction Industry Apprenticeship Programs in Indiana.” Accessed at: http://www.faircontracting.org/PDFs/prevaling_wages/AnalysisofApprenticeshipProgramsinIndiana.pdf. Cihan Bilginsoy (2007). “Delivering Skills: Apprenticeship Program Sponsorship and Transition from Training.” *Industrial Relations*, Vol. 46, No. 4, pp. 738-763.

²² See “What is Registered Apprenticeship?” ApprenticeshipUSA, Employment and Training Administration, U.S. Department of Labor. Accessed at: <https://www.doleta.gov/OA/apprenticeship.cfm>.

”
JATC training programs lead to higher entry-level pay for apprentices.

apprenticeship training is jointly determined and managed by worker representatives and signatory contractors.

Information from the Registered Apprenticeship

Partners Information Data System (RAPIDS) that is collected by the Employment and Training Administration of the U.S. Department of Labor can be used to compare outcomes for joint labor-management programs and contractor-sponsored programs in Florida.²³ The RAPIDS data are collected from individual trainees.²⁴ We use this information to compare programs on the breadth of trades training, completion rates, and wage rate increases after training. The data for programs in Florida were collected over the 2005 to 2017 period.

While unionized construction workers represented about 5% of overall construction labor force in Florida, their joint labor-management (JATC) programs were responsible for *45% of total apprenticeship graduates* from private sector construction programs in the state.²⁵ JATC training programs graduated apprentices in 22 trades, while other programs graduated apprentices in only 13 trades. Female participation in training programs is disproportionately low across the board. However, JATC programs graduated 72% more women than nonunion

²³ For more information on RAPIDS see Data and Statistics, Employment and Training Administration, U.S. Department of Labor. Accessed at: https://www.doleta.gov/OA/data_statistics.cfm

²⁴ Florida is not required to submit data to US DOL. It has a state apprenticeship council and generates and houses its own data which it voluntarily submits to the RAPIDS database. The source for this analysis is the voluntarily submitted FL data in RAPIDS.

²⁵ Private sector apprenticeship programs in Florida have graduated 7,839 participants that registered since January 1, 2005. 3,564 graduates were from joint labor-management programs. 4,275 graduates were from nonunion programs. Employment and Union Density statistics from Barry Hirsch and David Macpherson. Accessed at <http://unionstats.com/>.

programs.²⁶ The average completion rate for JATC programs is approximately 18% higher than the average completion rate for contractor-sponsored programs.²⁷

In addition, apprentices earn higher incomes in JATC programs, both while receiving training and on the job after completion.²⁸ The average starting hourly wage rate for apprentices in JATC programs was \$13.72 over the 2005-2017 period. The average hourly wage earned after graduation was \$23.10, an earnings increase of \$9.38 for workers in these programs. On the other hand, the average entry-level wage for

apprentices in contractor-sponsored programs was \$11.81 per hour and \$16.72 when exiting the program. Training only increased the earnings of these workers by \$4.91 an hour. The superior outcomes in joint labor-management programs are rooted in the superior funding and defined curriculum of these accredited programs.

RBO Training Joint Apprenticeship and Training Committees (JATC) BY THE NUMBERS

72%

MORE WOMEN graduate from JATC programs than contractor-sponsored programs

18%

HIGHER COMPLETION RATE for JATC program than for contractor-sponsored

²⁶ 46 female graduates of Group Non-Joint (non-union) programs, compared with 79 female graduates of Joint Multi-Employer (union) programs.

²⁷ The average for union program is 30.4% and 24.8%. This information applies to the period before and after the Great Recession. This downturn had a severe effect on construction activity and employment. With the reduction in jobs during the recession and slow recovery in the building industry, completion rates were lower during the 2010 to 2017 period (23.5% for union programs and 18.7% for nonunion programs).

²⁸ There were 3,552 completions with both starting and exit wages (excludes 12 records without starting wages) in joint labor-management programs. In nonunion programs over the period there were 4,257 completions with both starting and exit wages (excludes 5 records without starting wages and 13 records without exit wages).

Improved Opportunities for Minorities in the Local Construction Industry

There is a strong correlation with both improved wages and higher representation of African American workers in construction where registered apprenticeship programs prevail as industry practice. St. Petersburg's Disadvantaged Worker and Apprenticeship Ordinance reporting recognizes the value of this pathway. The evidence from around the country clearly suggests that policies which encourage apprenticeship utilization create more, and better, construction career opportunities for workers who need it most.

A recent study of the New York City construction sector, for example, demonstrates that the portion of the industry that participated in joint labor-management apprenticeship programs employed a greater share of African American workers and paid them more than the rest of the industry. Workers from minority racial backgrounds accounted for 62% of all New York City residents' union apprenticeships in 2014, and African American apprentice participation has roughly doubled over 20 years, rising from 18% in 1994 to 35% in 2014.²⁹

These outcomes are in part a function of the contracting policies of cities that invest in workers. Training and wage standards create economic activity for the construction sector that is felt directly by minority workers in the area. Economic studies on minority employment in construction in other states with similar laws paint a clear picture of reduced employment inequality. Manzo, Lantsberg, and Duncan (2016) find that non-whites have a 5.6% higher probability of employment in states featuring construction wage standards than in states

²⁹ Lawrence Mishel, "Diversity in the New York City union and nonunion construction sectors," Economic Policy Institute (2017) at <https://www.epi.org/publication/diversity-in-the-nyc-construction-union-and-nonunion-sectors/>.

St. Petersburg's Disadvantaged Worker and Apprenticeship Ordinance reporting recognizes the value and importance of higher representation of African-Americans in the local construction industry.

without them. In a recent study, Manzo, Bruno, and Manzo (2018) find that these laws positively affect the incomes of African American construction workers specifically, boosting their annual incomes by 24%— even higher than their white

African American construction workers would see a larger boost to their incomes than their white counterparts.

counterparts (17%)— as compared to areas without the construction wage standards.³⁰

Areas that utilize public construction contracting standards have a strong track record of encouraging contractors to invest in

labor, including minority workers from underserved communities. The policies which support training investment accomplish the important goal of making construction trades a viable career pathway for workers of all backgrounds.

³⁰ Manzo IV, Frank, Lantsberg, Alex, and Duncan, Kevin (2016). "The Economic, Fiscal, and Social Impacts of State Prevailing Wage Laws: Choosing Between the High Road and the Low Road in the Construction Industry." Accessed at: <https://illinoisepi.org/site/wp-content/themes/hollow/docs/prevailing-wage/pw-national-impact-study-final2-9-16.pdf>. Manzo, Jill, Bruno, Robert, and Manzo IV, Frank (2018). "State Prevailing Wage Laws Reduce Racial Income Gaps in Construction: Impacts by Trade, 2013-2015." Accessed at: <https://illinoisepi.files.wordpress.com/2018/02/ilepi-pmcr-prevailing-wage-reduces-racial-income-gaps-final.pdf>. For a review of the literature, see Matt Hinkle (2018). "Prevailing Wages and Race: A Middle-Class Pathway for All," NAFC Working Paper #1. Accessed at: www.faircontracting.org.

A RESPONSIBLE BIDDER ORDINANCE WOULD CONTROL CONSTRUCTION COSTS

The adoption of construction contracting standards, such as responsible bidder policies, often leads to the reasonable question: “How will construction costs be affected?”

One may think that increases in wage rates would result in increased production costs and prices. However, production costs and inflation could be stable if the higher wages are accompanied by an increase in labor productivity.³¹ It is thus essential to assess the impact that the contracting standards have on worker productivity to answer this question.

When considering the cost effect of policies which might encourage workforce investment by employers and raise construction worker wages, it is important to consider many features of the construction industry. First, labor costs account for a low and historically declining percentage of total construction costs in construction industry. The most reliable data on construction costs can be obtained from the U.S. Census Bureau's *Economic Census of Construction*.³² These data are

Construction Labor Costs BY THE NUMBERS

20%

Labor cost share of total construction costs in Florida

Over 70%

Share of academic studies that examine public projects which find that construction wage policies do not increase total construction costs

³¹ For an illustration of these relationships see “U.S. productivity rises in second quarter, keeps labor costs in check,” Reuters, August, 9, 2017. Accessed at: <https://www.reuters.com/article/us-usa-economy-productivity/u-s-productivity-rises-in-second-quarter-keeps-labor-costs-in-check-idUSKBN1AP1FV>.

³² See the U.S. Census Bureau, *Economic Census of Construction*, Construction: Geographic Area Series: Detailed Statistics for Establishments, accessed at:

derived from a survey of construction contractors in every state that is conducted every five years. Data from the most-recent *Economic Census of Construction* indicates that labor costs (e.g., wages and benefits) for all types of construction across the nation are approximately 23% of total building costs.³³ The corresponding figure for Florida is below the national average, at just 18%.³⁴ Excluding single-family residential construction, labor costs represent approximately 20% of total construction costs— still below the national average. This suggests that *labor compensation is relatively low throughout the construction industry in Florida*. Regardless, economic research consistently finds that labor costs are a small portion of overall construction costs.³⁵

http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_23A1&prodType=table.

³³ The *Economic Census of Construction* for 2012 does not report labor costs as a percent of total costs. This ratio must be calculated based on all the data. Here, labor cost as a percent of total construction cost is derived by dividing total construction worker payroll, plus proportionally allocated total fringe benefits, by the net value of construction work. The net value of construction is based on the value of work completed by a contractor, less the value of work subcontracted to other contractors. The *Economic Census of Construction* defines construction worker payroll as the gross earnings paid in the reporting year to all construction workers on the payroll of construction establishments. It includes all forms of compensation such as salaries, wages, commissions, dismissal pay, bonuses, and vacation and sick leave pay, prior to deductions such as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The *Economic Census of Construction* defines the net value of construction as the receipts, billings, or sales for construction work done by contractors, less the value of construction work subcontracted to others. The net value of construction does not include contractor business receipts from retail and wholesale trade, rental of equipment without operator, manufacturing, transportation, legal services, insurance, finance, rental of property and other real estate operations, and other nonconstruction activities. Receipts for separately definable architectural and engineering work for others are also excluded. Nonoperating income such as interest, dividends, the sale of fixed assets, and receipts from other business operations in foreign countries are also excluded. See Construction: Geographic Area Series: Detailed Statistics for Establishments: 2012. Accessed at: See Construction: Geographic Area Series: Detailed Statistics for Establishments: 2012. Accessed at: http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_23A1&prodType=table.

³⁴ The average for Florida is low because single-family residential construction, where construction worker wages and benefits are very low, represents about 15% of total construction in the state. Residential construction is unusually high in Florida. In comparison, residential construction represents less than 8% of the net value of construction in California.

³⁵ See for example, Philips, Peter (2014). "Kentucky's Prevailing Wage Law: An Economic Impact Analysis." Accessed at: <http://www.faircontracting.org/wp-content/uploads/2014/02/Kentucky-Report-2014-Philips.pdf>. Also see, Duncan, Kevin and Waddoups, Jeff (2014). "Does the Release of Davis-Bacon Certified Payrolls Cause Competitive Harm to

“Economic research consistently finds that labor costs are a small portion of overall construction costs.”

Second, research suggests that wages and productivity are inextricably linked in construction. For example, Blankenau and Cassou (2011) find that the use of skilled and unskilled construction labor is very sensitive to wage rates.³⁶ When construction wage rates increase, more skilled and productive construction

workers are employed, replacing less skilled and untrained workers. Changes in wage rates also affect the use of equipment in the construction industry. Balistreri, McDaniel, and Wong (2003) find that when wages increase, more capital equipment and machinery are used in construction, enhancing labor productivity.³⁷

Accordingly, the preponderance of peer-reviewed academic research examining the relationship between wages and costs in the construction industry finds that the adoption of construction wage standards does not increase building costs due to changes in productivity.³⁸

Contractors?” Accessed at:

https://www.denvergov.org/content/dam/denvergov/Portals/741/documents/PW_General/Torres%20Report%20on%20Certified%20Payrolls-%20Duncan%20and%20Waddoups%20December%202014%20Final.pdf.

³⁶ Blankenau, William and Cassou, Steve (2011). “Industry Differences in the Elasticity of Substitution and Rate of Biased Technological Change Between Skilled and Unskilled Labor.” *Applied Economics*, Vol. 43, pp. 3129-3142. In this study skilled workers are defined as those with 16 or more years of education and unskilled workers are defined as those with 12 or fewer years of schooling.

³⁷ Balistreri, Edward, Christine McDaniel, and Eina Vivian Wong (2003). “An Estimation of U.S. Industry-Level Capital-Labor Substitution Elasticities: Support for Cobb-Douglas.” *The North American Journal of Economics and Finance*, Vol. 14, No. 3, 343-356.

³⁸ Academic research differs from other types of research in that the former undergoes “peer-review” prior to publication in a scholarly journal. A peer-review is not based on whether reviewers agree with the research results; rather, the purpose of the review is to ensure quality, provide credibility, and maintain standards in the discipline. One benefit of this type of review is that peer experts are more likely to detect errors that may not be obvious to casual readers. It is entirely up to casual readers to evaluate the accuracy of research that has not been peer reviewed. Peer reviewers typically recommend significant refinements to the research prior to publication acceptance. Reviewers more often reject research as unworthy of publication. Peer reviewed journals in economics typically have rejection rates in excess of 70%. While peer-reviewed is not perfect, it is the only widely accepted method of research validation.



An RBO would keep construction costs stable.

For example, over 80% of academic studies that examine school construction projects find that construction worker wage policies do not increase total construction costs. The corresponding figure exceeds 70% when studies examining a variety of building types such as schools, highways, offices, and affordable housing, are considered. These studies are based on the statistical analysis of hundreds and thousands of bids. The findings consistently show that, since labor costs are a low percent of total construction costs, relatively minor changes in labor productivity are needed to offset any inflationary effect of higher construction wages.

Almost all peer-reviewed studies conducted in the 21st Century involve statistical analyses of contractor bids, because bid-costs account for adjustments in labor productivity that are associated with changes in wages and benefits.³⁹ As an example of this research, Waddoups and May (2014) examine the effect of responsible bidder polices on school construction costs in Ohio.⁴⁰ These policies required contactors to incorporate health insurance and other worker benefits such retirement benefits, minimum wage rates, and apprenticeship training into their bids. The responsible contractor policies were enacted in Ohio beginning in 2000. Using data

³⁹ The peer-reviewed research contrasts sharply in terms of method and results with studies that have not been peer-reviewed. The latter often use the flawed 'wage differential' method which guarantees a cost effect. For more on this work and its critique see, Peter Philips (2013). "Mr. Rosean's Magical Thinking A Short Evaluation of Alex Rosean's 2013 Prevailing Wage Methodology. Accessed at: https://economics.utah.edu/research/publications/2013_12.pdf; and Duncan, Kevin (2016). "The Wage Differential Method: Promising Construction Costs Savings with the Repeal or Weakening of Prevailing Wage Laws that Cannot be Delivered." Accessed at <https://www.csupueblo.edu/hasan-school-of-business/doc/kevin-duncan/wage-differential-method-critique-duncan-2016.pdf>.

⁴⁰ See Waddoups, Jeffrey and May, David (2014). "Do Responsible Contractor Policies Increase Construction Bid Costs?" *Industrial Relations*, Vol. 53, No. 2, April, 2014. Accessed at: <http://onlinelibrary.wiley.com/doi/10.1111/irel.12056/abstract>.

from 1997 through 2008, both before and after the policies were enacted, the examination of school construction bids revealed no statistically significant difference in bid-costs for schools built before and after the responsible contractor policy.⁴¹

The peer-reviewed research contrasts sharply in terms of method and results with studies that have not been peer-reviewed– which are not based on the statistical analysis of project bids. For example, a recent study by the Anderson Economic Group relies on differences between prevailing wage rates and alternative rates to measure the cost of the policy. This method has been resoundingly criticized by professional economists as a misleading, “back of the envelope” technique that ignores important changes in labor productivity that accompany and offset higher wage rates in the construction industry. Peer-reviewed studies that are based on the statistical examination of actual bids submitted by contractors provide a better, more comprehensive analysis of Responsible Bidder Ordinances and similar policies.

A RESPONSIBLE BIDDER ORDINANCE WOULD STRENGTHEN THE LOCAL ECONOMY

A Responsible Bidder Ordinance can increase the incomes of construction workers employed on capital improvement projects funded by the City of St. Petersburg. The increase in compensation would stimulate additional local economic activity, as construction workers spend

⁴¹ A difference that is not statistically significant is likely due to chance, implying that there is no causation. A difference that is statistically significant is unlikely due to chance, implying causation.

a significant portion of their earnings back in the local community at retail and service industries. The increase in health and retirement benefits would also result in expanded business for local insurance and investment establishments. Consequently, the total effect on the local economy would be greater than the initial increase in construction worker incomes and benefits.⁴²

The adopted 2018 capital improvement budget for the City of St. Petersburg is used to illustrate the economic impact of a potential Responsible Bidder Ordinance.⁴³ The most recent budget includes approximately \$160 million in purchases and construction funded by the city. About \$138 million of the budget involves construction work.⁴⁴ This analysis provides the City Council with a measure of the impact *if* a Responsible Bidder Ordinance was currently in effect. Since construction workers employed on projects in St. Petersburg reside primarily in Pinellas County and Hillsborough County, the economic impact is assessed for the two counties. The IMPLAN economic impact software is used to evaluate the effect of a potential Responsible Bidder Ordinance on local economic activity, employment, and tax revenue. IMPLAN uses an input-output model, which measures the inter-industry relationships within an economy. Specifically, input-output analysis is a means of measuring the market transactions between

⁴² Several studies have measured the economic impact of policies that increase construction worker incomes. For recent examples see Russell Ormiston, Dale Belman, and Matt Hinkel (2017). "New York's Prevailing Wage Law: A Cost Benefit Analysis." Accessed at: <https://www.epi.org/publication/new-yorks-prevailing-wage-law-a-cost-benefit-analysis/> and Michael Kelsay (2016). "The Adverse Economic Impact From Repeal of the Prevailing Wage Law in Missouri." Accessed at: <http://www.protectmofamilies.com/wp-content/uploads/2017/03/2016-Kelsay-Adverse-Effects-of-Repealing-Prevailing-Wage-in-Missouri.pdf>.

⁴³ See "Operating Budget & Capital Improvement Program, Fiscal Year 2018." City of St. Petersburg. Accessed at: http://www.stpete.org/city_departments/docs/FY18%20Complete%20for%20web.pdf.

⁴⁴ Information from Section 2 of the City of St. Petersburg "Operating Budget & Capital Improvement Program, Fiscal Year 2018" was used to separate construction-related capital improvements from improvement purchases. Line-item descriptions including terms such as improvements, repairs, replacements, and other project descriptions that obviously involved street and sidewalk work, etc. were used to identify construction projects. See Section 2, "Operating Budget & Capital Improvement Program, Fiscal Year 2018." City of St. Petersburg. Accessed at: http://www.stpete.org/city_departments/docs/FY18%20Complete%20for%20web.pdf.

businesses and between businesses and consumers. This framework allows for the examination of how a change in one sector affects the entire economy.⁴⁵ In this way, input-output analysis is able to analyze the economic effects of a change in construction worker incomes by measuring the multiplier, or ripple effect, as an initial change in worker earnings stimulates further changes in transactions between businesses and households.⁴⁶

The economic impact is based on the portion of the capital improvement budget for the City of St. Petersburg that involves construction activity, or approximately \$138 million. Since labor costs are a small share of total construction costs (20% in Florida), labor costs for the capital construction projects is approximately \$27.6 million (i.e., \$138 million multiplied by 20%). This labor cost share is used to assess the impact of a Responsible Bidder Ordinance on construction workers in Pinellas County and Hillsborough County.

Research suggests responsible bidder policies increase the incomes of workers on city-funded projects by 8.7% and that voluntary fringe benefits, such as health and retirement benefits, increase by about 13%.⁴⁷ Information from the Bureau of Labor Statistics regarding

⁴⁵ IMPLAN (IMpact analysis for PLANning) was originally developed by the U.S. Department of Agriculture to assist the Forest Service with land and resource management planning. The Minnesota IMPLAN Group started work on the data-driven model in the mid-1980s at the University of Minnesota. The software was privatized in 1993 and made available for public use. The software utilizes input-output model with data available at the zip-code, county, metro, state, and national levels.

⁴⁶ The results reported in this study are based on the most recent IMPLAN data for Pinellas and Hillsborough counties (2016). IMPLAN deflators are used to adjust for changes in prices over time. The results are reported in 2018 dollars.

⁴⁷ Numerous studies measure the change in construction worker incomes associated with changes in prevailing wage laws. The average of 8.7% is based on the following studies. These include national studies as well as research specializing in or near the southern U.S. See Michael Kelsay (2016). "The Adverse Economic Impact From Repeal of the Prevailing Wage Law in Missouri." Accessed at: <http://www.protectmofamilies.com/wp-content/uploads/2017/03/2016-Kelsay-Adverse-Effects-of-Repealing-Prevailing-Wage-in-Missouri.pdf>, Frank Manzo and Kevin Duncan (2018). "The Effect of Repealing Common Construction Wage in Indiana: Impact on Ten Construction Market Outcomes." Accessed at: <https://midwestepi.files.wordpress.com/2018/01/mepi-csu-effects-of->

The total effect of a local RBO on the local economy would be greater than the increase in construction worker earnings.

the distribution of income, income-related benefits, and health and retirement benefits indicates that the weighted overall increase in employee compensation due to a responsible bidder policy would be 9.1%, or \$2.5 million. Economic impact results are

reported in Table 2.⁴⁸

The portion of construction worker income associated with a potential Responsible Bidder Ordinance would generate 13 more jobs in local retail and service industries. This additional economic activity would generate approximately \$89,000 in state and local tax revenue. The increase in spending on health and retirement benefits of approximately \$515,000 would generate about \$1.2 million in local economic activity, create an additional six more jobs in the region, and result in a \$22,000 increase in state and local tax revenue. The combined impact of additional income and benefits associated with a Responsible Bidder Ordinance would

[repealing-common-construction-wage-in-indiana-final.pdf](#), Kevin Duncan and Frank Manzo (2016). "The Economic, Fiscal, and Social Effects of Kentucky's Prevailing Wage Law." Accessed at: <https://illinoisepi.org/site/wp-content/themes/hollow/docs/prevailing-wage/kentucky-report-duncan-and-manzo-2016-final.pdf>, Frank Manzo, Alex Lantsberg, and Kevin Duncan (2016). "The Economic, Fiscal, and Social Impacts of State Prevailing Wage Laws: Choosing Between the High Road and the Low Road in the Construction Industry." Accessed at: <https://illinoisepi.org/site/wp-content/themes/hollow/docs/prevailing-wage/pw-national-impact-study-final2-9-16.pdf>, and Ari Fenn, Zhi Li, Gabriel Pleites,

Chimedlkham Zorigtbaatar, and Peter Philips (2018). "The Effect of Prevailing Wage Repeals on Construction Incomes and Benefits." *Public Works Management & Policy*, DOI: 10.1177/1087724X18758340, pp 1-19. The change in benefits data was obtained from Ari Fenn, Zhi Li, Gabriel Pleites,

Chimedlkham Zorigtbaatar, and Peter Philips (2018). "The Effect of Prevailing Wage Repeals on Construction Incomes and Benefits." *Public Works Management & Policy*, DOI: 10.1177/1087724X18758340, pp 1-19.

⁴⁸ The increase in construction worker income of \$1.97 million is less than the economic impact for this category (\$1.823 million) because IMPLAN adjusts the direct effect for the portion that is spent outside of the two-county region. This is an appropriate adjustment since consumers do not spend all of their income in the local economy.

increase economic activity in the two-county region by approximately \$3 million, create and support 19 more local jobs and generate about \$111,000 in additional state and local tax revenue.

IMPLAN also reports industry-level impacts, which are reported in Table 3. The increase in wages and benefits would result in an increase in revenue for local finance, insurance, and real estate businesses of approximately \$1.2 million. This is consistent with consumer spending patterns in the U.S. where much of spending is on financial, medical, and other services.⁴⁹ These findings illustrate the important economic development function of a potential Responsible Bidder Ordinance. By lifting incomes for construction workers employed on city capital improvement projects, the policy also positively affects industries that are not directly related to the construction industry.

RBO Impact on Economy BY THE NUMBERS

**\$17
million**

Increase in economic activity
2018-2022 for Pinellas and
Hillsborough Counties

\$630,000

Additional state and local tax
revenue 2018-2022 for
Pinellas and Hillsborough
Counties

Table 2. Economic Impact of Responsible Bidder Ordinance on Pinellas and Hillsborough Counties

Category	Direct Effects	Economic Impact	Employment Impact	State and Local Tax Revenue Impact
Wage income	\$1,970,000	\$1,823,000	13	\$89,000
Benefits	\$515,000	\$1,172,000	6	\$22,000
Total	\$2,485,000	\$2,995,000	19	\$111,000

Source: IMPLAN economic impact software with data for Pinellas and Hillsborough counties.

⁴⁹ According the most recent GDP data for Q1, 2018, Services represent approximately 64% of personal consumption expenditures for 2018. See Table 1.1.6 Real Gross Domestic Product, Chained Dollars, National Data, Bureau of Economic Analysis, U.S. Department of Commerce. Accessed at: <https://www.bea.gov/iTable/iTable.cfm?reqid=19&step=2#reqid=19&step=3&isuri=1&1921=survey&1903=6>.

Table 3. Economic Impact of Responsible Bidder Ordinance on Selected Industries in Pinellas and Hillsborough Counties

Industry Group	Revenue Impact
Finance, Insurance & Real Estate	\$1,220,000
Wholesale, Retail & Restaurants	\$343,000
Health Care Providers	\$264,000
Owner-Occupied Dwellings	\$222,000

Source: IMPLAN economic impact software with data for Pinellas and Hillsborough counties.

The \$3 million net economic impact of a potential Responsible Bidder Ordinance represents about 2.2% of the value of construction-related capital improvement projects for the City of St. Petersburg in 2018. This percentage can be used as a general rule of thumb to estimate the economic impact of a responsible bidder policy on other city construction projects. For example, the five-year capital improvement plan for the City of St. Petersburg covering FY18–FY22 provides for an estimated \$602 million in total capital improvements.⁵⁰ This is in addition to an estimated investment of \$304 million in planned wastewater improvements through 2021, for a combined total of \$906 million.⁵¹ If the percentage of this planned expenditure that represents construction-related capital improvements is the same as the adopted 2018 plan, then approximately 86.3% or \$779 million of the FY18–FY22 planned improvements will involve construction activity.⁵² If covered under a Responsible Bidder Ordinance, the impact of the construction spending would be a boost of \$17 million overall to local economic activity. Other results can be proportionately scaled and applied. *As a result, the*

⁵⁰ See “Operating Budget & Capital Improvement Program, Fiscal Year 2018.” City of St. Petersburg. Accessed at: http://www.stpete.org/city_departments/docs/FY18%20Complete%20for%20web.pdf.

⁵¹ See “Mayor Rick Kriseman Unveils Wastewater Improvement Plan,” New Release, City of St. Petersburg. Accessed at: https://www.stpete.org/internal-news-detail_T2_R274.php.

⁵² 86.3% equals the ratio of construction-related 2018 capital improvements (\$138 million) to total capital improvements (\$160 million).

complete impact would be \$17 million in economic activity, the creation of 108 additional jobs, and about \$630,000 more in state and local sales tax revenue in the two-county area.

As described previously, the potential economic impact of responsible bidder policies is not large for the same reason the policy would not increase construction costs: labor costs are a small share of total construction costs. However, the policy would have a significant positive impact on local economic activity that would benefit industries that are not directly related to the construction industry.

APPENDIX A

A statewide analysis of blue-collar construction workers in Florida that is based on data from the 2016 *American Community Survey* provides statistical evidence that higher wages are associated with more employer-provided health insurance coverage and less reliance on food stamps (Figure A). A 1% increase in annual construction worker wages is associated with a 0.14 percentage-point increase in the share of blue-collar construction workers covered by an employer-provided health plan. Every 1% increase also reduces the share of construction workers below or near the official poverty line by 0.28 percentage points. As paychecks for Florida's blue-collar construction workforce increase, they become less and less likely to qualify for social safety net programs. In fact, a 1% increase in a construction worker's annual wages

reduces the likelihoods that he or she receives SNAP food stamp assistance by 0.08 percentage points and relies on public health insurance through Medicaid by 0.04 percentage points. All three results are statistically significant with 99% confidence.

The St. Petersburg Responsible Bidder Ordinance is projected to boost local construction worker earnings by an estimated 8.7%. By boosting blue-collar construction incomes and increasing the hiring of local contractors, a Responsible Bidder Ordinance would decrease spending on public assistance programs and increase local and state tax revenues. Figure B aggregates the estimated increase in annual construction worker earnings and findings from the probabilistic regression models to predict impacts on the 43,600 blue-collar construction workers in Pinellas County (15,300 workers) and Hillsborough County (28,300 workers).

Figure A: The Impact of Higher Construction Wages on Social in Outcomes in Florida, 2016

Probability of:	ln(wage)	Z score	Constant: Baseline
Having employer-provided health insurance	0.143 ***	13.42	0.412
Being below 150% of the official poverty line	-0.284 ***	-24.77	0.173
Receiving SNAP food stamp assistance	-0.036 ***	-7.64	0.050
Being on Medicaid	-0.080 ***	-8.80	0.198

Source: 2016 American Community Survey (5-year estimates). The regressions control for age, racial or ethnic background, gender identification, citizenship status, immigration status, veteran status, marital status, and county.

The St. Petersburg Responsible Bidder Ordinance is projected to boost local construction worker earnings by an estimated 8.7%. By boosting blue-collar construction incomes and increasing the hiring of local contractors, responsible bidding policies decrease spending on public assistance programs and increase local and state tax revenues. Figure B aggregates the estimated increase in annual construction worker earnings and findings from the probabilistic regression models to predict impacts on the 43,600 blue-collar construction workers in Pinellas County (15,300 workers) and Hillsborough County (28,300 workers).

Economic data reveal that a potential St. Petersburg's Responsible Bidder Ordinance would reduce poverty and promote employer-provided health insurance coverage. For nearly 1,100 construction workers in Pinellas and Hillsborough Counties, the average 8.7% pay raise associated with the new policy would be so significant that they no longer are below or near the official poverty line— a 2.5 percentage point drop in local construction worker poverty. About 400 blue-collar construction workers, or 1.2 percentage-point more would receive employer-provided pension coverage. As a Responsible Bidder Ordinance lifts St. Petersburg workers out of poverty, it would remove hundreds of local construction workers from dependency on social safety net programs. The policy would reduce the share of construction workers qualifying for SNAP food stamp assistance by over 300 workers, a 0.7 percentage point drop in food stamp reliance. By improving health insurance coverage, the policy would also reduce public Medicaid spending on more than 130 blue-collar construction workers (-0.3 percentage point) in the St. Petersburg area (Figure B).

Responsible Bidder Ordinances promote ladders into the middle class for local construction workers. The policy would boost annual construction worker wages, improve health insurance coverage, reduce poverty, and decrease spending on public assistance programs— at no additional cost to the taxpayer. A 2018 case study in Indiana found that construction worker earnings were 8.3% higher, worker turnover was 1.6 percentage points lower, and USDOL-approved apprenticeship training was supported in the 9 counties with high-road local

construction policies in the state.⁵³ Similarly, a potential RBO would promote the hiring, development, and retention of highly-trained local workers to build St. Petersburg’s schools, roads, and bridges safely and efficiently. By leveling the playing field, the policy would increase hiring of local contractors, ensuring that more tax dollars remain in the community. Ultimately, a Responsible Bidder Ordinance is a good value for taxpayers in the St. Petersburg area.

Figure B: Estimated Social Impact of Potential Responsible Bidder Ordinance in St. Petersburg Area, 2016

Social Outcome for Construction Workers	Estimate Effect	Workers Impacted
Employer-provided health insurance coverage	1.24%	399
Share below 150% of the official poverty line	-2.47%	-1,078
Medicaid health coverage	-0.31%	-136
Share receiving SNAP food stamp assistance	-0.70%	-305

*Source: 2016 American Community Survey (5-year estimates). *Reported only for those workers with positive earnings.*

The complete results of the regression model are presented in Figure C.

⁵³ Frank Manzo and Jill Manzo (2018). “Responsible Bidder Ordinance Promote Local Construction Standards: Evidence from Indiana.” Accessed at: <https://midwestepi.files.wordpress.com/2018/05/mepi-responsible-bidder-ordinances-report-final1.pdf>.

Figure C: Probit Regression Results for the Effect of a 1 Percent Annual Increase in Blue-Collar Construction Worker Incomes Per Year on Social Outcomes in Florida, 2016

Average Marginal Effect (AME)	P(Employer Health)	P(150% Poverty)	P(Medicaid Health)	P(SNAP Food Stamps)
ln(annual wages)	0.1431*** (0.011)	-0.2841*** (0.011)	-0.0359*** (0.005)	-0.0805*** (0.009)
Age	0.0018 (0.003)	0.0170*** (0.003)	-0.0014 (0.002)	0.0067** (0.003)
Age ²	-0.0000 (0.000)	-0.0002*** (0.000)	0.0000 (0.000)	-0.0001*** (0.000)
White non-Latino	-0.0816* (0.043)	0.0182 (0.031)	-0.0093 (0.016)	0.0687* (0.036)
African American	0.0026 (0.045)	0.0289 (0.033)	0.0145 (0.017)	0.1475*** (0.038)
Latino or Latina	-0.1400*** (0.043)	0.0628** (0.031)	0.0044 (0.016)	0.1748*** (0.036)
Woman	0.0063 (0.034)	-0.0290 (0.029)	-0.0139 (0.036)	-0.0691** (0.029)
Non-citizen	-0.2292*** (0.019)	0.0247** (0.012)	-0.0429*** (0.010)	0.0468*** (0.016)
Foreign born	-0.0323 (0.020)	0.0213 (0.014)	0.0001 (0.009)	-0.0198 (0.018)
Veteran	-0.0047 (0.021)	-0.0055 (0.022)	-0.0089 (0.011)	-0.0233 (0.021)
Married	0.0907*** (0.118)	0.0788*** (0.009)	0.0363*** (0.006)	-0.0269** (0.011)
Pinellas County	-0.0229 (0.027)	-0.0079 (0.022)	0.0054 (0.012)	-0.0254 (0.025)
Constant	0.4124*** (0.006)	0.1729*** (0.004)	0.0502*** (0.003)	0.1980*** (0.005)
N=	9,946	9,946	9,946	9,946
r ²	0.124	0.294	0.053	0.064

Source: 2016 American Community Survey (5-year estimates). *Reported only for those workers with positive earnings.

COVER PHOTO CREDITS

Baikovicus, Jimmy. ([2015](#)). "From Brickell City Centre in the Workings Series." *Flickr Creative Commons User. Attribution 2.0 Generic (CC BY 2.0)*.

The Durango Herald. ([2010](#)). "Working on Florida."

Oines, Daniel. ([2013](#)). "Road Closed." *Flickr Creative Commons User. Attribution 2.0 Generic (CC BY 2.0)*.