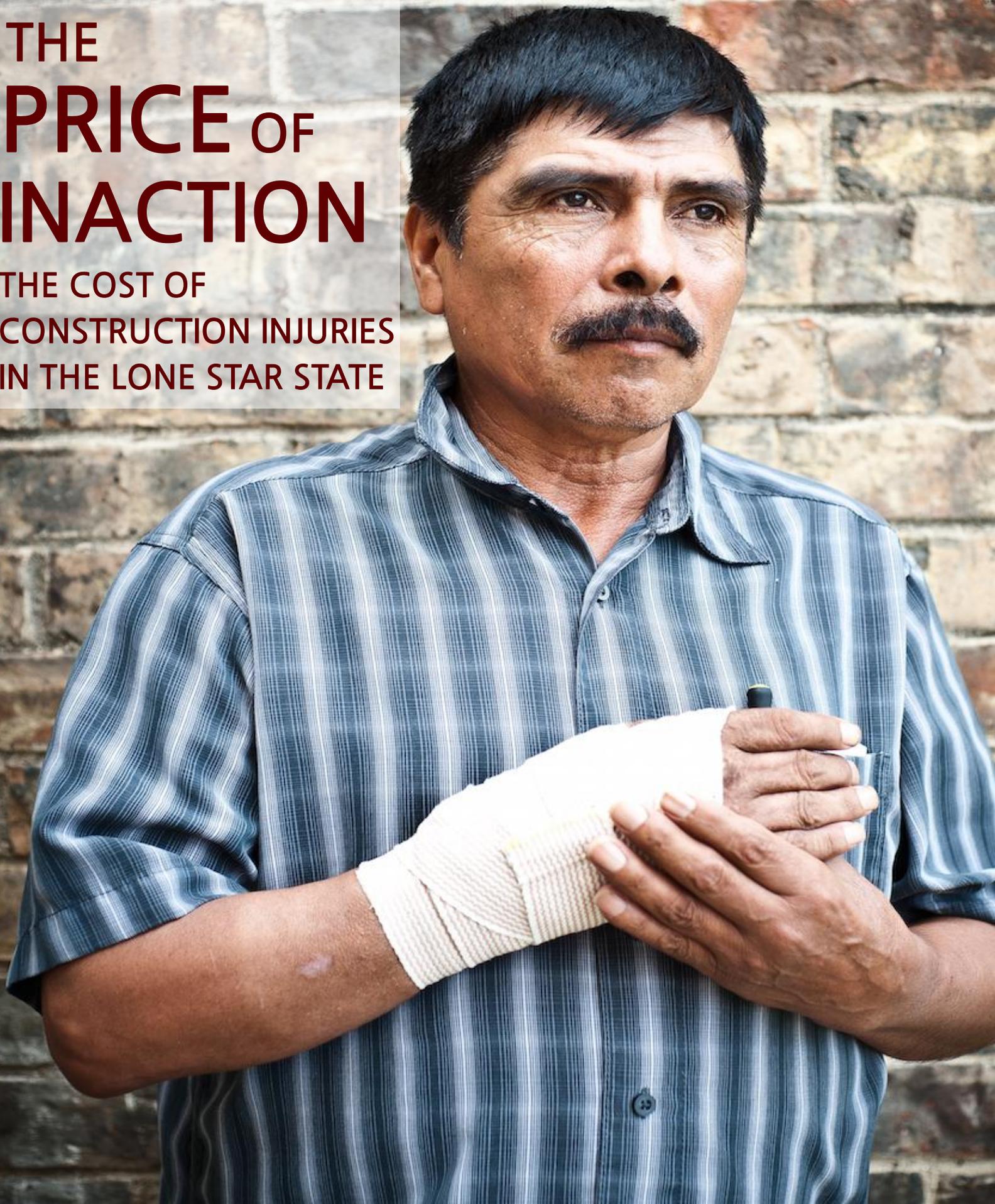


THE PRICE OF INACTION

THE COST OF
CONSTRUCTION INJURIES
IN THE LONE STAR STATE





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This report is the product of a collaboration of Public Citizen and Workers Defense Project. It was written by Bethany Boggess, researcher of Workers Defense Project and by Emily Gardner, worker health and safety advocate of Public Citizen's Congress Watch division. It was edited by Taylor Lincoln, research director of Public Citizen's Congress Watch division, by Emily Timm, senior organizing director, and by José P. Garza, executive director of Workers Defense Project. This report is a part of a series of city and state reports estimating the costs of deaths and injuries in the construction industry.

About Public Citizen

Public Citizen is a national non-profit organization with more than 400,000 members and supporters. We represent consumer interests through lobbying, litigation, administrative advocacy, research, and public education on a broad range of issues including consumer rights in the marketplace, product safety, financial regulation, worker safety, safe and affordable health care, campaign finance reform and government ethics, fair trade, climate change, and corporate and government accountability.

About Workers Defense Project

Workers Defense Project is a Texas non-profit organization that promotes fair working conditions for construction workers by educating them about their employment rights and ensuring they are treated fairly and humanely at work. Workers Defense Project provides direct services for and organizes low-wage workers to advocate for stronger protections at the state and local level. Workers Defense Project believes that by ensuring safe, fair working conditions for all workers, Texas can build a strong and sustainable construction industry that works for all Texans.

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EXECUTIVE SUMMARY

Every day, at least 15 workers become ill or are seriously injured on Texas construction sites. Even worse, a construction worker is killed in the state every three days. The industry's lowest-paid workers suffer from a disproportionate burden of these injuries and may be less likely to have basic protections in case of an injury, such as workers' compensation or medical insurance. These injuries and illnesses result in costly medical bills, but the financial impact of lost wages, lost productivity, and lifetime disabilities far outweigh the cost of medical expenses. Researchers utilized multiple existing data sources to estimate the costs of injuries, illnesses, and fatalities in the Texas construction industry, and to describe the shifting of those costs from construction businesses to injured workers, their families, and taxpayers. The experiences of injured workers are also described throughout the report.



Vigil in July 2015 for the fallen worker, Ramiro Loa.

Construction work site injuries, illnesses, and fatalities **cost an estimated \$895.9 million each year**. Elected officials at the local and state level can do more to ensure that the men and women who build Texas are not forced to bear the burden of dangerous and deadly conditions. The Workers Defense Project (WDP) and Public Citizen recommend that Texas policymakers take the following actions to mitigate this problem:

1. Require that all Texas construction employers provide workers' compensation coverage.
2. Require that all contractors on publicly funded or publicly subsidized construction sites complete a workplace health and safety prequalification process.
3. Establish a Texas Council on Construction Safety and Health, which would consist of construction workers, contractors, industry leaders, building trades unions, researchers, and labor advocates.
4. Pass a statewide policy establishing a rest break standard for construction workers.
5. Require participation in respected third party certification programs like the Better Builder Program.

INTRODUCTION



Photo from Day of the Fallen, 2015.

Every year, more than 100 workers die on Texas construction sites, and thousands of construction workers end up in emergency rooms, clinics, and hospitals across the state.¹ In contrast to other industries, construction workers in Texas face the highest risk of dying on the job, yet an estimated three-fourths of construction workers lack basic benefits such as paid sick time or health insurance and at least one in three lack workers' compensation insurance.^{2,3} The lack of basic protections leaves injured workers and their families without wages during their recovery period, and burdened with high medical bills and the cost of caring for the worker if they become disabled. The primary aim of this report is to provide a basic estimate of the economic burden of construction injuries, illnesses and fatalities in Texas and the economic burden of these injuries and illnesses on injured workers and their families. Additionally, we examined the demographics of construction workers killed in Texas, the key shortfalls of Texas' workers' compensation system, and the shifting of costs related to injuries and illnesses from the construction industry to workers, their families, and taxpayers.



Gustavo Granillo, father of fallen worker, Roendy Granillo, speaks about the importance of safe working conditions at Dallas City Hall.

REPORT METHODOLOGY

To examine the economic impact of Texas’ dangerous construction sites on workers, their families, taxpayers, and the construction industry, the Workers Defense Project and Public Citizen have collaborated to produce this report at a time when the industry is experiencing both unprecedented growth, as well as increasing numbers of construction site fatalities.

Researchers reviewed a variety of existing data sources to accomplish the goals of this report. Data from the U.S. Occupational Safety and Health Administration (OSHA) describes the demographics of workers killed, while data collected by the Bureau of Labor Statistics (BLS) in the Census of Fatal Occupational Injuries (CFOI) and the Survey of Occupational Injuries and Illnesses (SOII) were analyzed to determine the total prevalence of fatal injuries and non-fatal injuries and illnesses in Texas (fatal illnesses are not reported or tracked in the U.S.). BLS data from 2013 have been utilized, as 2014 data were still preliminary at the time of writing this report. Survey data collected by the Texas Department of Insurance and by the Workers Defense Project have also been used in the discussion about workers’ compensation. Cost estimates are based on the methodology developed originally by G.M. Waehrer *et al.*, and adapted by Public Citizen.^{4,5} These estimates include the cost of medical bills, lost wages, lost productivity, and the average cost of tort cases.

To describe the demographics of construction workers killed in Texas, we have relied on OSHA investigation data from the calendar year of 2015, the most recent data available.⁶ OSHA investigates approximately 60-75% of the fatal injuries on Texas construction sites each year, so these data do not represent all construction worker fatalities that occurred in 2015. Even though the CFOI data available from the BLS provide more comprehensive estimates of the total number of fatalities that occur in Texas, they provide very few details about each case. This limits researchers' ability to determine which workers are most at risk of being killed on construction sites. Because of these limitations, the "Profile of Texas Construction Workers Killed on the Job, 2015" section of this report instead utilized far more detailed investigation data collected by OSHA in the state of Texas. OSHA data is also more current than CFOI, as OSHA fatality data are updated weekly rather than annually.

The basic estimates of the cost of construction injuries, illnesses, and fatalities relied on three sources, including the CFOI, the SOII, and the estimates on the direct and indirect costs of construction injuries and fatalities produced by Waehrer *et al.* The number of fatal construction injuries comes from the CFOI, a surveillance system administered by the BLS. The CFOI collects fatality data from medical examiners, police departments, OSHA offices, media, and other sources to enumerate every fatal occupational injury that occurs in the United States. While some under-reporting may occur within the CFOI, it is generally considered to be a comprehensive source of information about fatal workplace injuries in the United States.⁷ The SOII, which collects information about non-fatal occupational injuries and illnesses is considered to be less comprehensive than the CFOI as it relies on employers to track and report cases.⁸ The SOII surveys randomly selected businesses, and employers use data from their OSHA injury and illness logs to respond to the survey.

More detailed information about the methodology used for producing the cost estimates is found in "The Cost of Construction Injuries, Illnesses and Fatalities" section and in Appendix 1.

CONSTRUCTION WORKERS KILLED ON THE JOB, 2015

The vast majority of construction worker deaths could be easily prevented by following existing safety standards, but construction workers continue to face an unacceptable risk of loss of life or limb on their job sites. A construction worker is killed every three days on a job site in Texas.⁹ Common causes of death for construction workers include falls, being struck by equipment, vehicular incidents, and exposure to dangerous environments, such as extreme heat, trench collapses, or toxic gases.¹⁰ Such deaths could be prevented through coordinated safety programs that ensure that workers receive thorough trainings in their native language, that employers follow basic protection regulations and guidelines, that work sites are drug- and alcohol-free, and that worker safety is a key component in construction planning and design.^{11,12} However, Texas lacks many of even the most basic worker protections. Construction workers in most Texas cities do not have a right to a rest break and basic safety training for workers is not required. Without these simple prevention strategies, Texas construction workers continue to face enormous risk. Even though just 6% of Texas workers are employed in construction, they represent 23% of workers killed on the job.^{13,14}



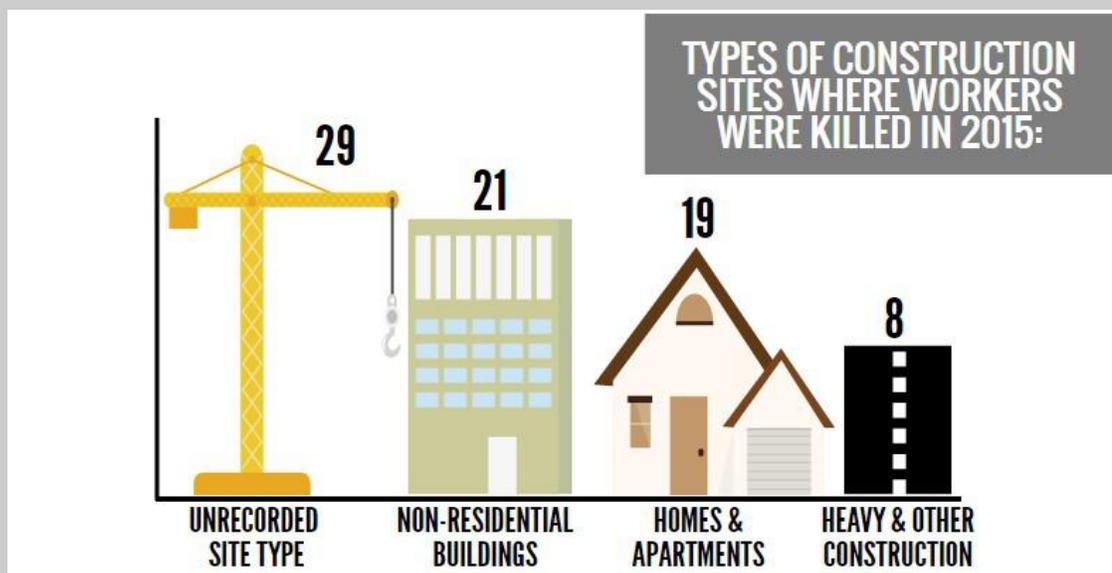
Vigil in July 2015 for the fallen worker, Ramiro Loa.

OSHA investigates approximately three-fifths of all fatal injuries on Texas construction sites due to jurisdictional limitations.¹ There are generally between 100 and 120 fatal injuries among construction workers in Texas each year, and in 2015, OSHA investigated 77 construction worker fatalities in the state (see Appendix 2). OSHA also investigates a small number of cases of fatal illnesses that occur on job sites each year, three of which have been included in this data set. These illnesses were cardiovascular events. Deaths from occupational illnesses, such as coal miner's lung disease and silicosis, generally develop over long periods of time and the worker is more likely to die from the disease in the hospital or at home rather than at work. Because the worker generally does not die at work from a fatal illness, OSHA investigates very few fatal illness cases.¹⁵

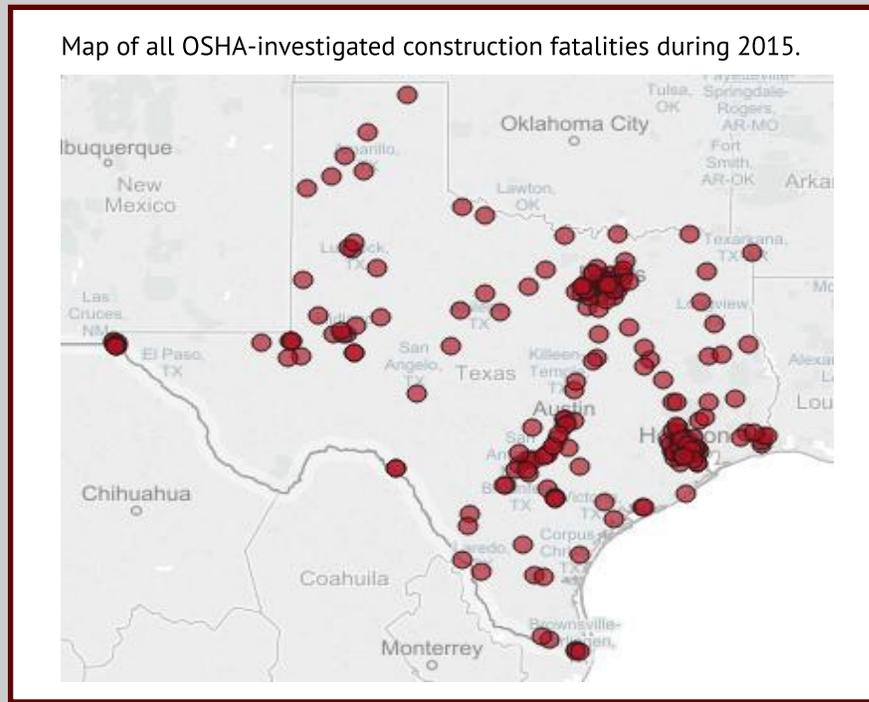
FATAL INJURY INVESTIGATIONS CONDUCTED BY OSHA, 2015

The following data has been collected from OSHA investigation reports:¹⁶
(see Appendix 2)

- **AGE:** Victims' ages ranged from 18 to 77, and the median age at the time of death was 41.
- **SEX:** Out of 77 victims, one was female and 76 were male.
- **TYPES OF CONSTRUCTION SITES:** 21 deaths occurred on non-residential building sites, 19 deaths occurred on single-family and multi-family building sites, 8 occurred on heavy and other construction sites. Twenty-nine deaths had no recorded site type.



- OCCUPATION:** The most common occupation held at the time of death was general laborer or construction helper. Nearly one-third of all workers killed were working in this occupation, one of the lowest-paid jobs on construction sites. Additionally, 7% of victims were roofers, 4% were welders, 4% were electricians, and the remaining half of victims worked in a variety of occupations.



- CAUSES OF DEATH:** The most common cause of death was falls, usually from one level to another or from a ladder. Forty-one percent of construction workers died from a fall. One in four workers was killed by being struck by an object or equipment. Other common causes of death were inhaling toxic substances, shock, heat stroke, and being trapped between objects. Three cases were cardiovascular incidents.

NOTE: Death caused by heat-related illnesses was also a major issue during 2015 in construction and other types of industries. From 2008-2013,¹⁷ there were never more than five fatal cases of heat-related illness fatalities in Texas, but OSHA inspections documented eight heat-related fatalities in Texas in 2015.

¹⁷There are a variety of scenarios in which OSHA would not investigate a fatal workplace injury. Federal OSHA investigators do not investigate fatal injuries among workers employed by local, state, or federal government. Workers killed during transit from one place to another do not require an OSHA investigation. Other select scenarios exist in which OSHA would not investigate a fatal injury, and OSHA generally does not investigate fatal illnesses. See https://www.osha.gov/OSHA_FAQs.html

ABUNDANT WORK, ABUNDANT RISK

Texas' construction industry is booming. The United States is the third largest construction market globally, and Texas has the highest dollar volume of construction in the country.^{18,19} More homes were sold in Texas in 2015 than in pre-recession years, and construction permits have increased by more than 50% since the fall-out of the Great Recession.²⁰ High population growth rates in the state have spurred a large demand for homes, offices, hotels, industrial buildings, roadways and bridges.²¹ The city of Houston has more construction workers than any other metropolitan area in the United States, with approximately a quarter of a million workers laboring in the city annually.²² There are nearly one million construction workers employed in Texas, the largest construction workforce in the U.S.²³



Fatalities in the Texas construction industry increased by 11% from 2012 to 2013, but the trend was especially alarming for immigrant workers:

Fatalities among Latino foreign-born construction workers increased by 47% from 2012-2013.

Nationally, the construction industry relies heavily on immigrant workers, largely from Mexico and Central America. An estimated 28% of construction workers nationally are immigrants, and in Texas, at least 40% of workers in the industry are foreign-born.²⁴ Research conducted with immigrant construction workers in the United States indicates that these workers are more vulnerable to labor rights violations, including wage theft, retaliation, lack of overtime pay, and an increased exposure to health and safety hazards.^{25,26} Immigrants and people of color also experience disproportionate rates of work-related fatalities and non-fatal injuries in the construction industry. Conditions are particularly dire for immigrants and people of color employed in Texas' construction industry.²⁷

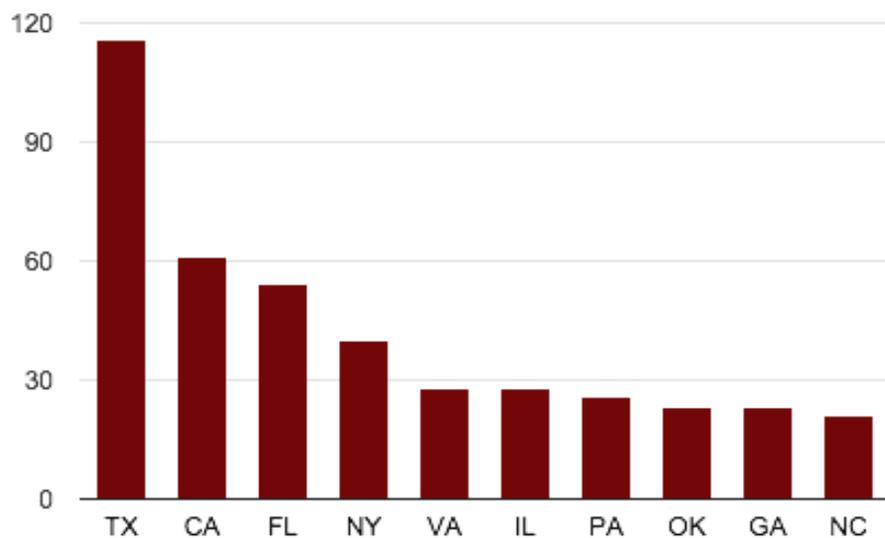


TEXAS CONSTRUCTION WORKERS FACE TWICE THE RISK OF DYING ON THE JOB COMPARED TO CONSTRUCTION WORKERS IN CALIFORNIA.

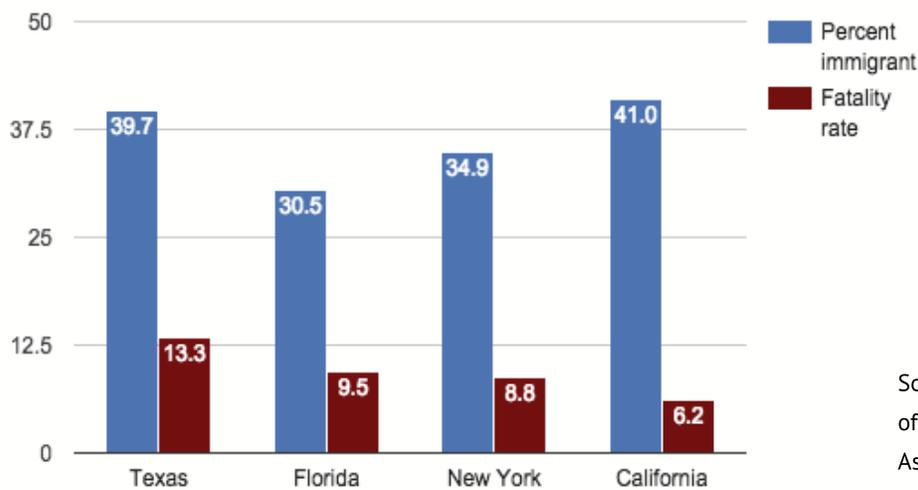


Approximately two out of every three construction workers killed in Texas are Latino.²⁸ Recent fatal injury trends are also alarming. From 2012 to 2013, the total number of construction worker fatalities in Texas increased by about 11%, while fatalities among foreign-born Latino construction workers in the state increased by an astounding 47% during this time period.²⁹ The risk that immigrant construction workers face in Texas becomes even more severe when comparing Texas to other states with large construction industries. In 2013, only 10 states had more than 20 construction workers killed on the job (see Chart 1). One hundred and sixteen construction workers died in Texas in 2013, compared to 61 fatalities in California, even though the two states have approximately the same size construction workforce.³⁰ Texas is one of the most dangerous states in the United States for construction workers and immigrant workers in Texas face the highest risk of dying on the job.

Chart 1. States with highest number of construction fatalities, 2013



Source: Bureau of Labor Statistics, Census of Fatal Occupational Injuries



Sources: Bureau of Labor Statistics, Census of Fatal Occupational Injuries, National Association of Home Builders

Chart 2. Top 4 states' percentage of immigrants in construction workforce vs. construction fatality rates

Immigrant workers may face increased risk on work sites partially because of language barriers or cultural differences, but data indicate that local industry norms and state regulatory practices may also play a critical role in work site safety. In the four states with the largest construction workforces, states with a larger proportion of immigrants in the industry do not necessarily have a higher fatality rate (see Chart 2), indicating that other factors not related to the worker may be an important factor in workplace fatality rates.^{31,32} Surprisingly, California has the highest percentage of immigrant construction workers, yet has the lowest construction fatality rate. Texas' construction fatality rate is 2.2 times higher than California's, even though it has a lower percentage of immigrant workers in its construction workforce.

WORKER CASE STUDY: INJURED ON THE JOB WITHOUT WORKERS' COMP

Marcos, whose name has been changed to protect his anonymity, is a 27-year-old painter with more than twelve years of experience in Texas' construction industry. In 2015, Marcos fell nearly 20 feet off of a ladder while painting in a new home under construction in a suburb of Austin. Marcos suffered a compound fracture of the elbow. Marcos' crew leader drove him to the county indigent hospital and told Marcos that he had to tell the doctor that he fell while working on his own house - not at work. Marcos received an outpatient surgery for the fracture, and was pressured into returning to work just one week after his injury. Neither the crew leader nor the painting company had workers' compensation or basic health insurance, leaving Marcos scrambling to pay his rent and basic living expenses along with thousands of dollars of medical bills.

Even with twelve years of experience, Marcos was only paid \$95 a day for 12 hour work days, earning approximately \$7.91 an hour while working on homes with a sales price of \$300,000 or more. "I used to earn even less than that working for other guys, before I had the experience," Marcos said in an interview with WDP staff. Marcos was eventually fired for filing an OSHA complaint about the unsafe working conditions. Poverty wages, retaliation, and workplace injuries often go hand-in-hand on construction sites, and the industry's most vulnerable workers are bearing the brunt of these abuses.

THE COST OF INJURIES, ILLNESSES AND FATALITIES

The primary aim of this report is to provide a basic estimate of the cost of construction injuries and fatalities in the state, but such estimates may mask the true social burden of these injuries.³³ In Texas, the lowest-paid construction workers likely face the highest risk of death and injury at work. Many of these workers are immigrants from Mexico and Central America, and they often have little or no access to benefits like health insurance and workers' compensation to help them weather these crises. As a result, these workers experience lost wages, lost household productivity, and high medical bills when they are injured. Because of the lack of basic protections, the economic toll is greater on low-wage workers and those who lack health insurance and workers' compensation. Thus, lawmakers should keep in mind that workplace injuries affect different sub-populations of workers in different ways.

"We know every day that going to work might kill us, but what can we do? We have to make a living."

—Martín Arriagas Belman, a 28-year-old house framer who suffered rib and vertebral fractures after falling from the second story of a single-family house under construction in Austin, TX.

COST ESTIMATE METHODOLOGYⁱⁱ

The cost estimates presented here rely on the methods adapted by Public Citizen from the work by Waehrer *et al.*, which estimated the direct and indirect costs of fatal and non-fatal injuries in the U.S. construction industry.^{34,35} The cost estimates produced by Waehrer *et al.*, were in 2002 dollars. We have applied a general increase of 29% to the cost estimates to reflect the inflation rate that occurred between 2002 and 2013, but this is a conservative estimate since some costs in the model, such as the cost of medical care, have increased faster than the consumer price index (45% versus 29%, respectively).^{36,37}

Cost estimates for non-fatal injuries and illnesses are based on events that required the worker to lose at least one day of work, and include the cost of medical care, lost wages (both short-term losses and long-term losses for those who experienced a permanent disability), business productivity losses, household productivity losses, and quality of life losses (based on tort liability cases for non-fatal work injuries). The Waehrer study found that the 2002 cost of a non-fatal occupational injury or illness was \$42,093, or \$54,300 in 2013 dollars (see Appendix 1).

Cost estimates for fatal injuries include all of the above, but wage losses were estimated for the number of years of life lost after a worker died and tort liability cases for fatal injuries. The Waehrer study found that the 2002 cost of a fatal occupational injury was \$3,954,669, or \$5,101,523 in 2013 dollars (see Appendix 1).

The number of fatal injuries and non-fatal injuries and illnesses relies on data from the CFOI and the SOII in 2013 by the BLS. Data from 2013 have been used as estimates for this report, as 2014 data are still preliminary and incomplete. While the number of fatal injuries is considered to be comprehensive, it is very likely that the number of non-fatal events is an undercount based on extensive evidence that underreporting of non-fatal injuries and illnesses is severe and systemic in U.S. and Texas workplaces. A recent study found that 90% of SOII respondents did not comply with OSHA recordkeeping requirements, the data source used to determine the prevalence of non-fatal injuries and illnesses in the SOII.³⁸ Thus, all estimates presented here should be considered conservative.

ⁱⁱ This report invokes the costs of injuries and fatalities to buttress the case that the Texas policymakers should take steps to reduce the incidence of workplace accidents and deaths. This should not be interpreted as an endorsement of the use of cost-benefit analysis as a prerequisite for moving forward with public safety measures. Policymakers who are beholden to cost-benefit analysis would require government agencies to demonstrate that the quantifiable monetary benefits of any proposed action would outweigh the costs. Adherence to this philosophy inhibits problem-solving for numerous reasons. For instance, the formulas invoked for cost-benefit analyses invariably overstate the costs and understate the benefits. On the cost side, they often ignore the ability of industry to develop less-expensive solutions through innovation and economies of scale. On the benefits side, they typically do not permit agencies to place a value on protecting against likely harms that are not quantifiable. Ultimately, bowing to cost-benefit analysis prevents government agencies from implementing feasible solutions to major problems.

RESULTS

Waehrer *et al.*, conservatively estimated that the total cost of a workplace fatality in the construction industry was \$3.9 million in 2002 dollars, which would be \$5.1 million in 2013 dollars. Each non-fatal occupational injury or illness requiring days away from work cost on average \$42,093, or \$54,300 in 2013 dollars. Based on BLS data, there were 116 construction fatalities in Texas during 2013 and approximately 5,600 injuries or illnesses requiring days away from work.³⁹ Therefore, the estimated total cost of both fatal injuries and non-fatal injuries and illnesses in Texas during 2013 was approximately \$895.9 million (\$895,856,668), with fatalities costing approximately \$591.7 million and non-fatal events costing more than \$304 million (see Appendix 1 for detailed methods). These figures are incidence-based, which means they only reflect the costs of incidents occurring in 2013 and do not include costs accumulated from events that occurred in previous years.

Because Texas does not require employers to carry workers' compensation coverage, most of the \$895.9 million in costs of construction injuries, illnesses, and fatalities in Texas is likely being absorbed by injured workers, their families, and taxpayers. More workers in Texas lack workers' compensation insurance than any other state, and thus workers and their families may be facing a higher economic and social burden than their counterparts across the country.⁴⁰



**\$895.9 MILLION = THE ESTIMATED ANNUAL COST OF
WORKPLACE INJURIES, ILLNESSES & FATALITIES IN
THE TEXAS CONSTRUCTION INDUSTRY.**

INJURED AND UNINSURED: SHIFTING THE COST FROM EMPLOYERS TO FAMILIES

Texas' "Opt-In" Workers' Compensation System

Texas is the only state in the country that has never required employers to carry workers' compensation insurance.⁴¹ Many refer to Texas' workers' compensation policy as an "opt-out" system, but it is more accurately described as an "opt-in" system since employers must proactively choose to go above legal requirements and purchase coverage for their employees. Because of this, Texas workers are stuck in a dysfunctional system that does little to ensure that workers have access to basic medical care in the case of an injury, let alone access to wage replacement or disability benefits.

Approximately 67% of Texas businesses choose to purchase workers' compensation insurance for their employees.⁴² Such employers are referred to as "subscribers." These businesses employ approximately 80% of workers across all industries in Texas.⁴³



WDP youth members at an immigration vigil, 2015.

Employers who do not purchase workers' compensation insurance are referred to as "non-subscribers," and they may offer some kind of alternative insurance or nothing at all. An estimated 15% of Texas workers have some kind of alternative coverage, which may or may not have wage replacement benefits.⁴⁴ Even though employees of non-subscribers in Texas have the right to sue their employer for negligence, alternative workers' compensation plans frequently require secretive arbitration processes if disputes arise, prohibiting workers from filing lawsuits.⁴⁵ It is not known what percentage of claims is eventually approved in either the traditional workers' compensation system or with alternative insurance plans. More than 470,000 workers in the state, or 5% of the workforce, have no coverage at all.⁴⁶ As a result of this policy, Texas has the highest percentage of workers not covered by workers' compensation in the country.⁴⁷

Despite a lack of research on how this opt-in system affects injured workers and their families, state legislatures across the country are pushing to adopt similar workers' compensation policies. The Tennessee and South Carolina legislatures recently considered opt-out measures.⁴⁸ Also, industry advocates are trying to save Oklahoma's opt-out law, which was recently declared unconstitutional by the Oklahoma Workers' Compensation Commission.⁴⁹ In the meantime, many vulnerable workers are left out the system completely and are forced to rely on their own savings or on Medicaid and county indigent programs.⁵⁰ Injured workers with "alternative" insurance plans often discover that such plans may be worse than having nothing at all. Injured workers who file claims in alternative plans are not legally protected from retaliation by their employer,⁵¹ and emerging research indicates that workers with the most severe injuries and illnesses fare poorest under the alternative plans.⁵²

Comprehensive workers' compensation data specific to the construction industry is not available in Texas.ⁱⁱⁱ The Texas Department of Insurance conducts regular surveys of Texas businesses, and these data indicate that approximately 80% of the construction workforce is covered by a workers' compensation plan.⁵³ However, only 15-19% of businesses respond to this survey, rendering the findings highly likely to be systematically biased and therefore unreliable.⁵⁴ A survey of 1,194 construction laborers in five major urban areas employed on randomly selected construction sites in Texas found that 32% of workers said that they had no coverage, and an additional 26% did not know if they had coverage.⁵⁵ Therefore, estimates on the lack of workers' compensation coverage range from a minimum of 20% to a potential maximum of 58% of the construction workforce in Texas.

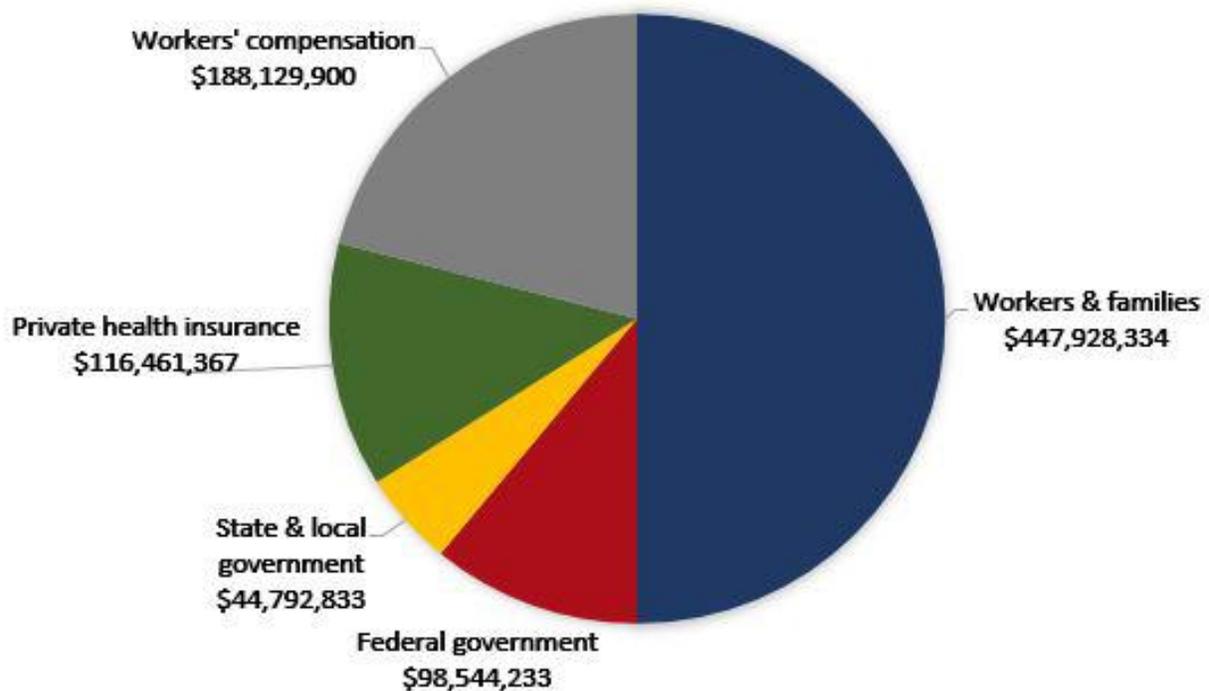
ⁱⁱⁱ Similarly, there is a lack of data on workers' compensation coverage specific to the construction industry on a national level. More research is needed to examine national and state level trends in this area.

Economic Burden on Working Texas Families

Texas construction workers experience some of the highest fatality rates in the country, and approximately 15 construction workers are seriously injured or become ill on their job sites each day in Texas. Yet Texas workers also have the lowest workers' compensation coverage rates in the country. National estimates indicate that the shifting of the costs associated with workplace health issues is severe, with an estimated 50% of all costs borne directly by injured workers and their families.⁵⁶

As more specifically described earlier in this report, the estimated annual cost of workplace injuries, illnesses, and fatalities in the Texas construction industry is \$895.9 million. Therefore, based on national cost-shifting estimates, injured Texas construction workers and their families are burdened with more than \$447.9 million (50% of the estimated \$895.9 million) in injury, illness and fatality costs annually (see Chart 3).⁵⁷ Texas taxpayers pay at least \$143.3 million for the care of injured and ill construction workers annually through the form of federal, state, and local government spending on medical care and on long-term care for disabled workers. Private health insurance companies pay an additional \$116.5 million. Workers' compensation pays an estimated \$188.1 million, or 21%, of the total, an extremely generous estimate since Texas workers' compensation coverage rates are far lower than the national average.

Chart 3. Cost-shifting estimates of construction injury and illness costs in Texas, 2013



Sources: Occupational Safety and Health Administration, Bureau of Labor Statistics.

The Texas construction industry generated an estimated \$74.1 billion in 2013.⁵⁸ If the industry assumed all of the \$895.9 million in estimated costs associated with construction industry fatalities and non-fatal injuries and illnesses, it would equate to just 1.2% of the industry's annual gross domestic product. However, instead of construction businesses bearing this burden, the industry's lowest-paid workers, their families, and Texas taxpayers have been shouldered with the lifelong economic and social consequences of Texas' dangerous construction sites.

The highest costs associated with construction site injuries are being placed on the industry's most impoverished workers.



Photo from worker Memorial Day 2015, Dallas, TX.

RECOMMENDATIONS

Based on these findings, the Workers Defense Project and Public Citizen recommend providing immediate assistance to injured construction workers, and policies to reduce the number of injuries, illnesses, and fatalities occurring on Texas construction sites. The recommendations below describe innovative strategies to both keep workers safe on the job and to ensure that injured workers and their families are protected in the event of a workplace injury or illness.

1. Require that all Texas construction employers provide workers' compensation coverage.

Not only does workers' compensation coverage pay for the medical care and wage replacement that Texas workers need in the event of an injury, but workers' compensation plans incentivize safe work site practices and safety training.

2. Require that all contractors on publicly funded or publicly subsidized construction sites complete a workplace health and safety prequalification process.

Several "responsible contractor" policies have been introduced across the country.^{iv} As part of the bidding process, the state would review the employer's history of health and safety, review a site-specific safety plan and work with the contractor to address any weaknesses prior to contracting. Independent monitoring post project implementation to verify that the plan is adhered to is highly recommended. As part of this review process, all contractors would be required to:

- **Provide OSHA 300 logs and other injury/illness reports.** Contractors with a history of more injuries would not necessarily be disqualified, but they will have to build strong safety plans and ensure that a safety manager is on-site.
- **Establish an on-site worker health and safety committee.** Construction workers employed on the site should meet regularly and present key safety and health concerns to management without fear of retaliation. Committee members should reflect the demographics of the site workforce.
- **Require OSHA-10 training for all workers on the site, and ensure that a safety professional with at least OSHA-30 training is on site.** This will help ensure that all workers are aware of safety hazards on worksites, and are able to report such hazards to site supervisors, site safety managers, or to OSHA. Training should be provided in a language that all workers understand.

^{iv} See, e.g., H.B. 977, 2016 Leg., Reg. Sess. (Md. 2016); H.B. 906, 2013 Gen. Assemb. (N.C. 2013); H.B. 2018, 108th Gen. Assemb., Reg. Sess. (Tenn 2014).



3. Establish a Texas Council on Construction Safety and Health, which would consist of construction workers, contractors, industry leaders, building trades unions, researchers, and labor advocates. This Council should conduct research about key and emerging safety and health issues in the industry in order to create policy recommendations for state and local lawmakers.

4. Pass a statewide policy establishing a rest break standard for construction workers. A simple rest break can ensure that construction workers get the rest and water they need to keep them safe on the job. Texas has experienced a growing number of heat-related fatalities, which are easily prevented with rest, shade, and water. Well-rested workers are also less likely to make mistakes that result in injuries or deaths. Dallas and Austin have adopted such standards at the local level, requiring a minimum 10 minute break for every four hours of work.

5. Require participation in respected third party certification programs like the Better Builder Program. WDP's Better Builder program partners with developers to ensure safety standards, fair wages, proper classification of workers, create training opportunities, and provide independent third party monitoring to ensure that these standards are met. Better Builder provides value-added to construction contracts by preventing and resolving safety issues so that construction projects are completed on time and under budget.

CONCLUSION

Every day, at least 15 workers become ill or are seriously injured on Texas construction sites, and a construction worker is killed in Texas every three days. Immigrant workers and people of color suffer from a disproportionate burden of workplace injuries and may also be less likely to have basic protections in case of an injury, such as workers' compensation or medical insurance. Construction worksite injuries, illnesses, and fatalities generate an estimated \$895.9 million in costs *each year*. This hefty bill is primarily borne by construction workers, who too often receive unfairly low wages for their labor, in addition to their families, and Texas taxpayers. The cost to Texas families is simply too high, and Texas elected officials must act to prevent costly injuries and accidents, and to reduce the burden placed on families and taxpayers. Elected officials at the local and state level can and should do far more to ensure that the men and women who build Texas are not forced to bear the burden of dangerous and deadly working conditions.

Appendix 1: Detailed Methodology for Cost Estimation

The model for estimating the costs of fatal construction injuries and non-fatal injuries and illnesses is based on the original research by Waehrer *et al.*, and the modified formula developed by Public Citizen. The number of fatal injuries comes from the BLS CFOI. The number of non-fatal injuries and illnesses that required at least one day away from work comes from the BLS SOII.

Cost of Fatal Injuries

- Total number of construction fatalities (BLS, 2013): 116
- Estimated cost per construction fatality in 2002 dollars: \$3,954,669
- Estimated cost per construction fatality in 2013 dollars (adjusted for 29% inflation): \$5,101,523

$$116 \text{ fatalities} \times \$5,101,523 = \$591,776,668$$

Cost of Non-Fatal Injuries and Illnesses

- Estimated number of non-fatal injuries and illnesses requiring at least one day away from work in the construction industry: 5,600
- Estimated cost per non-fatal case in 2002 dollars: \$42,093
- Estimated cost per non-fatal case in 2013 dollars (adjusted for 29% inflation): \$54,300

$$5,600 \text{ non-fatal injuries and illnesses} \times \$54,300 = \$304,080,000$$

$$\text{Combined costs of injuries, illnesses, and fatalities} = \$895,856,668$$

Appendix 2: OSHA Construction Fatality Investigations, 2015

Note: This is a limited version of the full data set obtained.

Victim Name	Age/Sex	Event Date	Injury or Illness
Ibarra, Lino	36\M	1/5/2015	The victim landed on his head and suffered head trauma and a broken nose.
Gomez, Salvador	46\M	1/6/2015	Concussion and fractured chest.
Lewellyn, Lester	41\M	1/14/2015	Head trauma.
Martinez, Fabian	26\M	1/28/2015	Blunt force trauma to the head.
Hernandez, Sostenes	39\M	1/29/2015	skull fracture
Valdivia Jr., Martin	20\M	1/19/2015	Blunt force trauma to the body.
Fortner, Michael	50\M	2/3/2015	death
Lujano, Abel	61\M	2/4/2015	Employee received head trauma causing him to be in a coma.
Andrade Sr., Jose	62\M	2/3/2015	The employee died as the result of mechanical asphyxia and blunt force injuries.
Suarez, Fernando Manual	77\M	1/13/2015	The hazard of being struck in the face as a result of falling or flying rebar.
Lucio, Florencio	29\M	2/12/2015	Blunt force injury to the head.
Moreno, Jesus	49\M	2/24/2015	Blunt force trauma to the head
Ramos-Obando, Luis	36\M	3/16/2015	A large wooden beam struck the employee in the head.
DeLeon, Jimmy	42\M	3/16/2015	electrocution.
Ledesma-Perez, Julio Cesar	37\M	4/2/2015	1 Fatality/3 hospitalized but was treated and released.
Reyes-Gurney, Stephanie	28\F	3/28/2015	Fall from elevation
Sanchez, Jose Herminio	40\M	4/7/2015	struck-by fatality
Medina, Victor	41\M	3/31/2015	Traumatic internal injury.
Acosta, Enrique	57\M	4/16/2015	Impact to the head resulting in death.
Orozco-Fuentes, Wilman	23\M	4/13/2015	Employee landed dorsally, and reportedly was spitting blood at the time.
Rosales, Jesus	32\M	4/28/2015	Electrocution.
Nava, Leonardo	25\M	4/29/2015	Employee #1 fell 17 feet onto a concrete sidewalk causing fatal injuries.
Esquivel, Carlos	48\M	5/4/2015	The employee sustained a head injury and/or medical emergency.
Torres, Jorge	44\M	5/14/2015	Fractured skull with lacerations to the right and left frontal lobe.
Gutierrez, James	21\M	6/10/2015	Exposure to a hazardous chemical, hydrogen cyanide.

Victim Name	Age/Sex	Event Date	Injury or Illness
Thaemert, Jeff	50\M	6/12/2015	Fatality
Burney, Tommy	65\M	6/15/2015	Death
Moser, Tommy	55\M	6/19/2015	Electrocution/death
Guevara, Frederick	39\M	6/28/2015	The employee fell down and suffered head trauma.
Rico, Jose Lewis	67\M	6/23/2015	Internal Injuries caused by struck by and crush by injuries.
Gomez, Eddie	30\M	7/7/2015	brain swelling and in coma.
Loa, Ramiro	31\M	6/29/2015	Death.
Castaneda, John Marcos	62\M	6/30/2015	Crushing and as asphyxiation
Palacios, Gabriel	53\M	7/4/2015	Employee was not connected to a lanyard and subsequently fell 34 feet to his death.
Diaz Ramirez, Manuel	63\M	7/14/2015	The employee suffered from a fracture of the C1 vertebrae, dislocated hip, and contusion on his forehead.
Lowe, Thomas	62\M	6/4/2015	Death from carbon monoxide poisoning.
Granillo, Roendy	25\M	7/19/2015	Heat stroke
Koehler, James	57\M	7/11/2015	Hydraulic system fail and victim was crushed underneath machinery.
Guillen, Salvador	66\M	8/11/2015	Crushed by wheels.
Jaquez, Rodolfo	55\M	8/13/2015	The employee lost his balance and fell 17 feet to the ground where he struck his head on a cinderblock wall and died form his injuries.
Ramirez, Emilio	27\M	8/15/2015	Head trauma/Broken bones
Ramirez, Jasso	53\M	7/13/2015	Heat stroke/ exposure.
Ramirez, Christopher	22\M	8/15/2015	Electrical shock, he stopped his breathing and subsequently few weeks later died.
Kilgore, Arthur	55\M	8/18/2015	Blunt force trauma
Fisher, Donald	52\M	8/13/2015	Apparent diabetic coma resulting in heart failure, possibly contributed to by dehydration.
Crabtree, Daniel	19\M	8/28/2015	Cause of death: blunt head trauma due to a fall from ladder.
Sanchez, Fernando	40\M	7/24/2015	Blunt force trauma caused the death of this employee.
Torres-Leyva, Rafael	51\M	9/1/2015	electrical shock

Victim Name	Age/Sex	Event Date	Injury or Illness
Reyes, Pedro	65\M	8/25/2015	The employee sustained a fractured sternum and ribs when provided with 1st aid
Barksdale, Jeremy	43\M	9/10/2015	Electrocution
Banderas, Jose	31\M	9/2/2015	Head injuries
Brooks, Michael	47\M	7/6/2015	Death/Asphyxiation
Martinez, Pablo Cruz	34\M	9/10/2015	Worker fell 10 feet.
Ruhter, Robert	30\M	9/17/2015	Electrocution.
Rodriguez, Juan	21\M	9/22/2015	Employee was electrocuted.
Hernandez, Javier	50\M	9/25/2015	Death
Gonzales, Ricardo O.	43\M	9/21/2015	Unknown as of this date 10/02/15 and waiting to receive autopsy report. Medical
Gabriel-Rangel, Juan	32\M	10/8/2015	Head trauma.
Mendoza Carillo, Sergio	23\M	10/21/2015	multiple fractures and blunt force trauma
Payen, Reyes	39\M	10/21/2015	multiple fractures and blunt force trauma
Hernandez-Brito, Solomon	18\M	10/17/2015	Blunt force injuries to the skull
Martinez, Juan	33\M	10/29/2015	Fatal head trauma
Morales, Candelario	42\M	10/17/2015	Massive head injuries and death.
Lloyd, Roy Gene	60\M	11/9/2015	Death from fractures to the chest.
Whitehead, Stephen	29\M	11/16/2015	Head concussion and broken bones in the back and body.
Pedersen, Anthony	41\M	11/9/2015	head injury
Granados, Sergio	24\M	11/17/2015	Electrical shock followed by a fall from approximately 17 feet.
Juarez, Armando	24\M	11/18/2015	Not recorded
Carmody, Arthur	55\M	9/17/2015	Heart attack
Santillan, Francisco	21\M	12/3/2015	The worker flew 20 yds and was killed instantly.
Leija-Hernandez, Alfonso	27\M	12/3/2015	Head fracture.
Shaw, Bruce	66\M	12/9/2015	All over body injury
Cornejo, Ruben	57\M	12/15/2015	Not recorded
Saldivar, Gerardo	57\M	12/14/2015	Blunt force trauma
Johnson, Gary	58\M	12/14/2015	drowning
Rakotonirainy, Timothy	39\M	12/23/2015	Aortic dissection.
Cordova, Steven	32\M	10/8/2015	Crush and amputation injuries to both legs.

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IN THE LONE STAR STATE

A COLLABORATION BETWEEN PUBLIC CITIZEN & THE WORKERS DEFENSE PROJECT

