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Quarterly DATA REPORT
SECOND QUARTER 2018

Fatal Injuries at Road Construction Sites among Construction Workers

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Working at road construction sites can be dangerous. Between 2011 and 2015, 609 workers lost their lives at road work zones[#], an average of 122 workers annually (BLS, 2017). This Quarterly Data Report examines the trends and patterns of fatal occupational injuries among construction workers at road construction sites over time, with special emphasis on the period after the recent economic recovery. Fatality numbers were obtained from the Census of Fatal Occupational Injuries (CFOI), and the employment data were from the Current Population Survey (CPS). Since neither the CPS nor other data sources provide employment data specifically for road construction work, employment data from the entire construction industry were used as the denominators in rate calculations. Therefore, the estimated rates may not fully represent the risk in road construction sites. Stratified and time series analyses were conducted to identify differences among subgroups in construction over time. This report also provides related information on injury prevention at road construction sites selected from a variety of sources, including the Occupational Safety and Health Administration (OSHA), the National Institute for Occupational Safety and Health (NIOSH), the Federal Highway Administration (FHWA), and CPWR.

KEY FINDINGS

- From 2003 to 2016, 1,269 construction workers died at road construction sites, accounting for approximately 9% of all construction fatalities each year.
- Between 2011 and 2016, 532 construction workers were killed at road construction sites, more than double the total for all other industries combined.
- The number of road construction site fatalities climbed to 103 in 2016 from a low level of 72 deaths in 2013, a more than 40% increase over three years.
- About half of road construction site fatalities were due to being struck by a vehicle or mobile equipment.
- More than 70% of road construction site fatalities occurred in the Highway, Street, and Bridge subsector.
- Construction workers who worked as crossing guards and paving/surfacing operators at road construction sites had the highest risk of fatal injuries.

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[#] These work zones include construction, maintenance, or utility work on a road, street, or highway.

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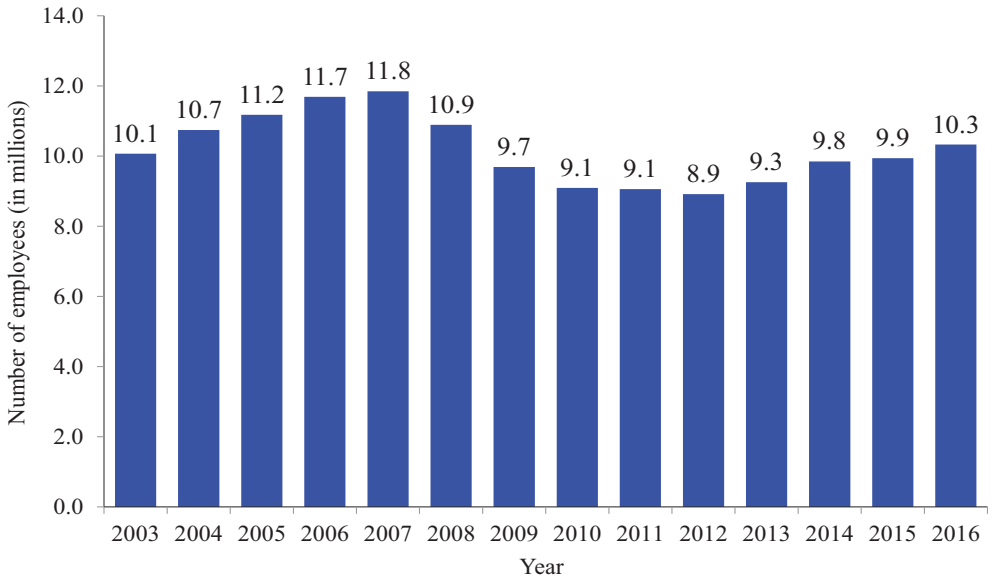
SECTION 1: Trends of Fatal Injuries at Road Construction Sites

Construction employment continues to grow. In 2016, 10.3 million U.S. workers were employed in construction, 4% more than in 2015 and a 16% increase after construction employment bottomed out in 2012 (chart 1).

1. Construction employment in the United States, 2003-2016



Source: U.S. Bureau of Labor Statistics, 2003-2016 Current Population Survey. Calculations by the authors.

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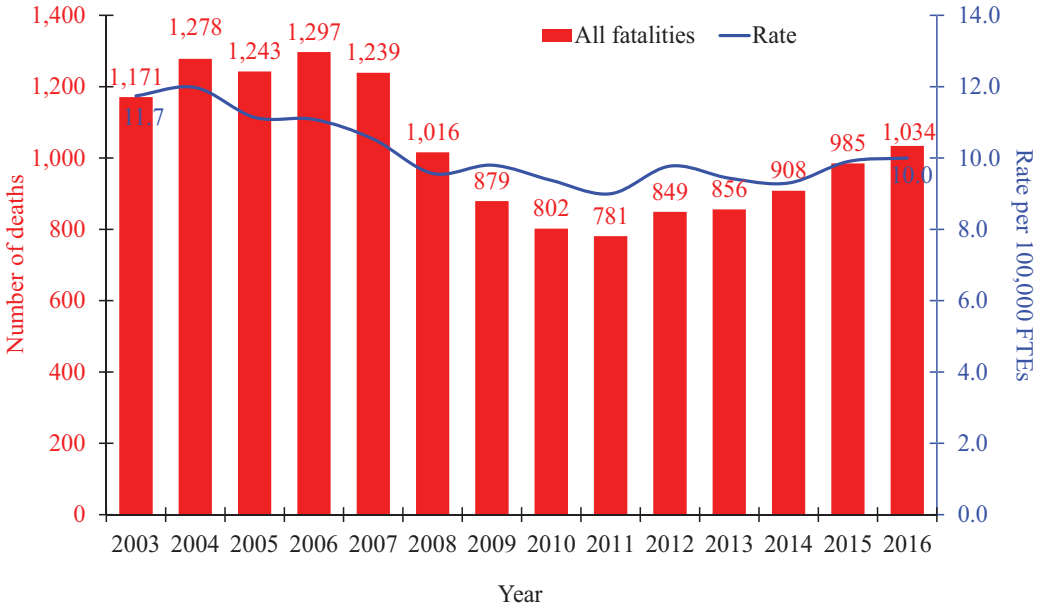
Coinciding with the employment trend, the number of fatalities among all construction workers climbed to 1,034 in 2016, 49 more deaths (or 5% higher) than in 2015, and a 32% increase since 2011, outpacing employment growth during the same period (chart 2). The rate of fatalities in construction also increased 11%, from 9.0 deaths in 2011 to 10.0 deaths per 100,000 full-time equivalent workers (FTEs) in 2016.

2. Number and rate of fatalities in construction, 2003-2016



Source: U.S. Bureau of Labor Statistics, 2003-2016 Census of Fatal Occupational Injuries. Numbers were from the online CFOI database. Employment data were from the Current Population Survey. Calculations by the authors.

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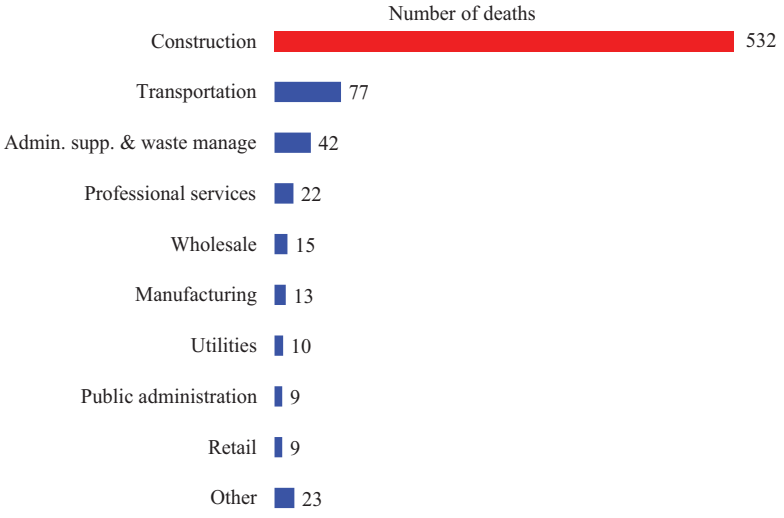
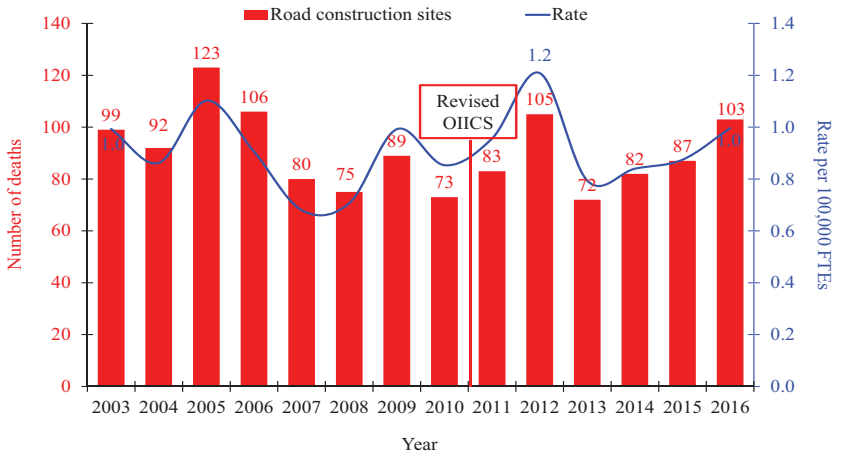
The construction industry experiences a larger burden of deaths at road construction sites than any other major industry. From 2011 to 2016, 532 construction workers were killed at road construction sites, more than twice as many fatalities as all other industries combined (chart 3). The number of fatalities among construction workers at road construction sites fluctuated year to year. The death number reached 105 in 2012, the highest since 2006, which could partially correspond to government investments in transportation infrastructure around that period[1] (The Hamilton Project, 2011; Brookings Institution, 2015; National Economic Council, 2014). After a low of 72 deaths in 2013, it climbed to 103 deaths in 2016, a more than 40% increase over three years (chart 4). Between 2003 and 2016, 1,269 construction workers died at road construction sites, accounting for approximately 9% of all construction fatalities each year. The rate of fatal injuries at road construction sites also fell and rose during the economic recession and recovery. However, the real risk at road construction sites may be underestimated because the exact number of construction workers working on such sites is unknown.

3. Fatal injuries at road construction sites, by major industry, 2011-2016 total



4. Number and rate of fatalities at road construction sites, 2003-2016



[1]Analysis of data from the 2012 Bureau of Economic Analysis (BEA) annual input-output table and related data from the Bureau of Labor Statistics (BLS) suggests that 68% of the jobs created by investing in infrastructure are in the construction sector, 10% in the manufacturing sector, and 6% in retail trade. *See* National Economic Council, 2014, page 8 (cited in the reference section) for more information.

Source: Fatal injury data were generated by the CPWR Data Center with restricted access to BLS CFOI micro data. The views expressed here do not necessarily reflect the views of the BLS. Employment data were from the Current Population Survey. Calculations by the authors.

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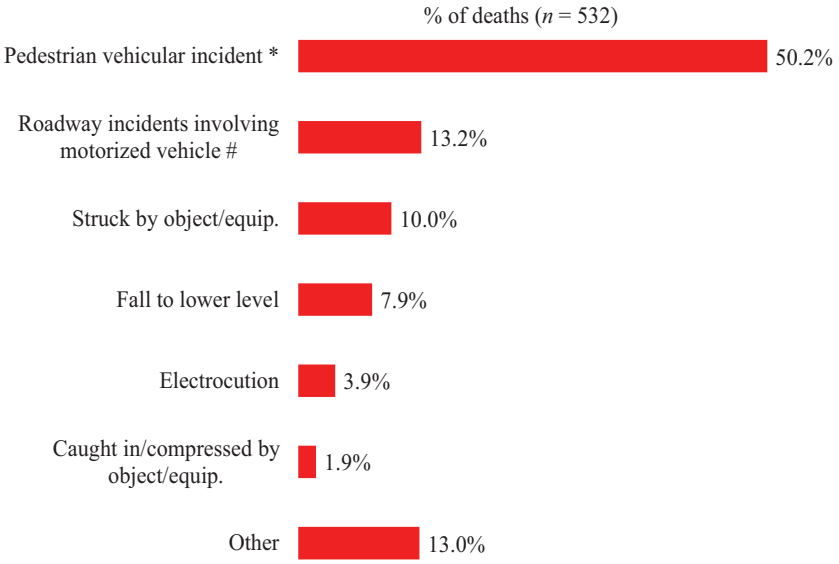
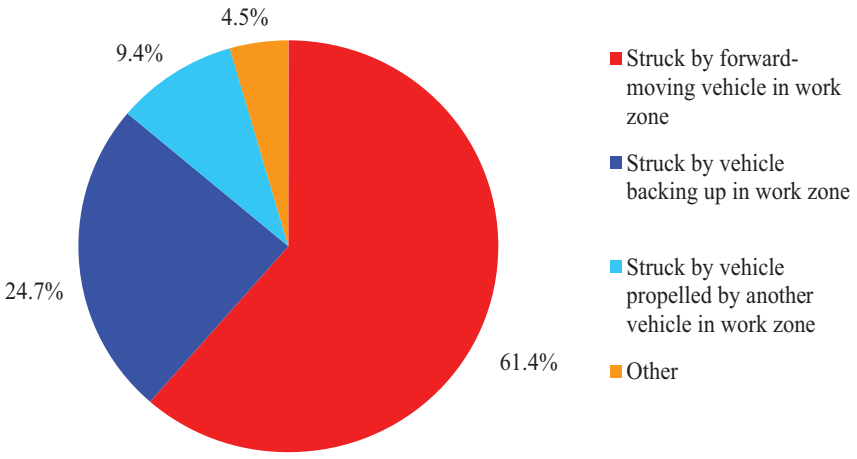
In terms of event or exposure, the most common cause of road construction deaths between 2011 and 2016 was pedestrian vehicular incidents where a worker (non-occupant of vehicle) was struck by a vehicle or mobile equipment (50.2%; chart 5). The next most common cause (13.2%) was roadway incidents that occurred while a worker was operating a vehicle. Of the 267 pedestrian vehicular incidents, 61.4% were due to a worker (non-occupant of vehicle) being struck by a forward-moving vehicle in the work zone, followed by being struck by a vehicle backing up in the work zone (24.7%; chart 6).

5. Fatal injuries at road construction sites, by event or exposure, sum of 2011-2016



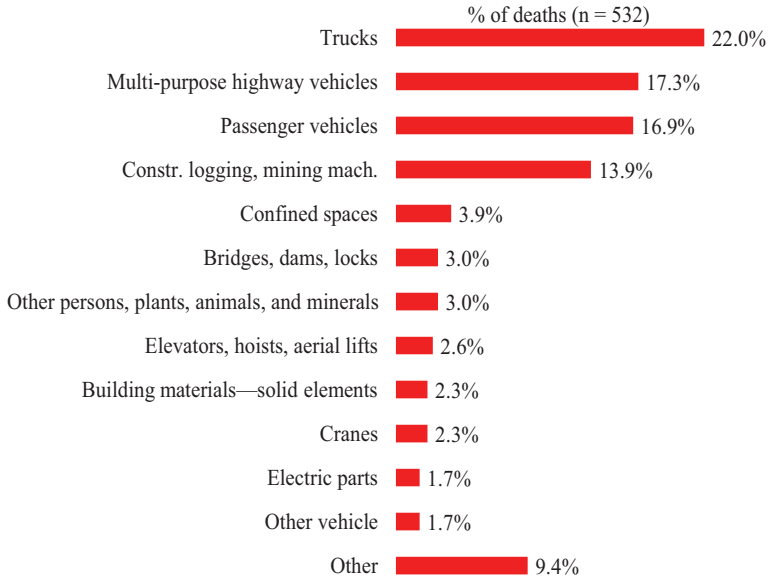
6. Fatal pedestrian vehicular incidents at road construction sites, by subcategory, sum of 2011-2016



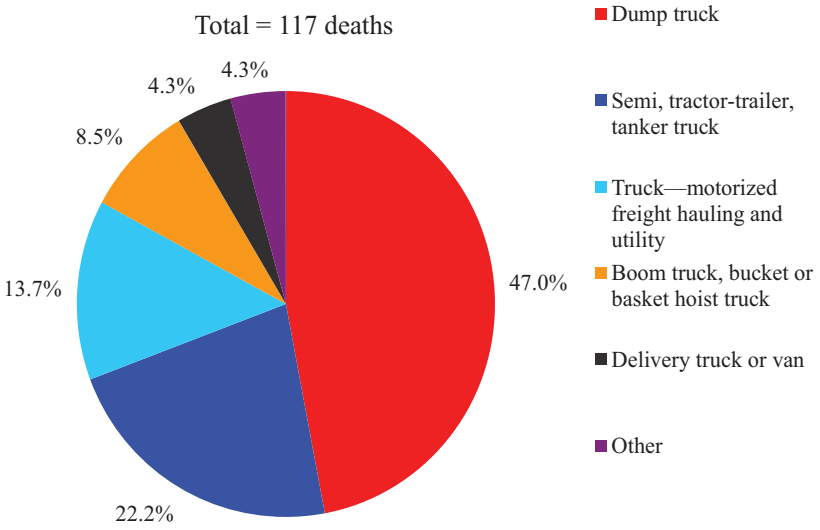
* This group includes pedestrians and other non-occupants of vehicles who were struck by vehicles or other mobile equipment in normal operation regardless of location.
# This group includes injuries to vehicle occupants which occurred on roadways.
Source: Fatal injury data were generated by the CPWR Data Center with restricted access to BLS CFOI micro data. The views expressed here do not necessarily reflect the views of the BLS.

When stratified by the primary source of fatalities, trucks were the top source of deaths at road construction sites, involved in nearly one-quarter (22%) of such incidents (chart 7). Multi-purpose highway vehicles (such as pick-up trucks and SUVs) were the second most common source, causing 17.3% of construction fatalities at those sites, followed by passenger vehicles (including automobiles, buses, and passenger vans). Among 117 truck-related road construction site fatalities, nearly half (47.0%) were caused by dump trucks, followed by semi-tractor-trailers and tank trucks (22.2%; chart 8).

7. Fatal injuries at road construction sites, by primary source, 2011-2016 total



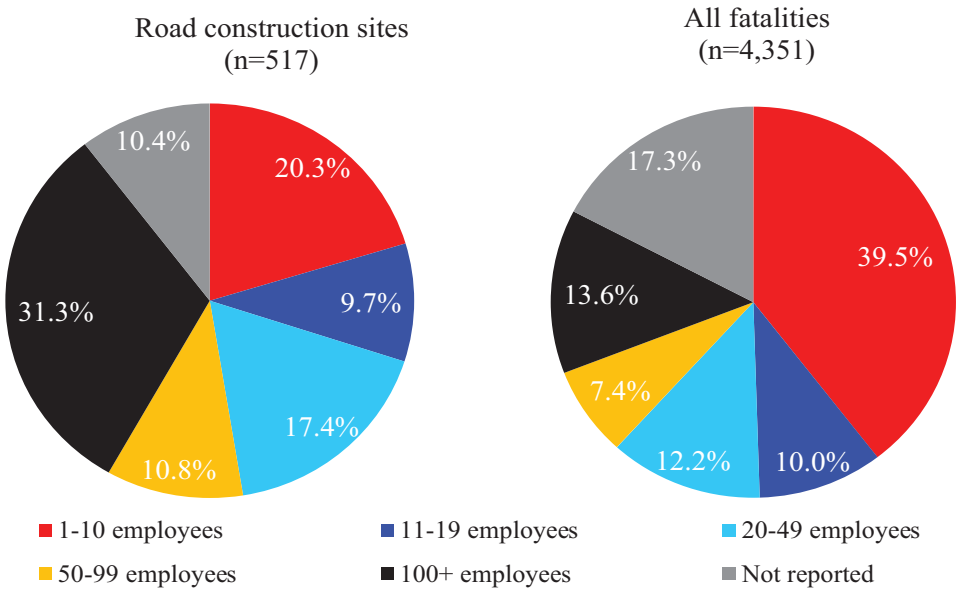
8. Fatalities at road construction sites caused by trucks, by primary source, sum of 2011-2016



Source: Fatal injury data were generated by the CPWR Data Center with restricted access to BLS CFOI micro data. The views expressed here do not necessarily reflect the views of the BLS.

Compared to all construction fatalities, fatal injuries at road construction sites were more likely to occur in larger establishments, suggesting large construction companies are more likely to be involved in road construction projects. Nearly one in three (31.3%) road construction site fatalities occurred in establishments with 100 or more employees, more than double the percentage of all construction fatalities at such establishments (13.6%, chart 9).

9. Fatal injuries in construction by establishment size, road construction sites versus all fatalities, sum of 2011-2016 (Wage-and-salary workers)

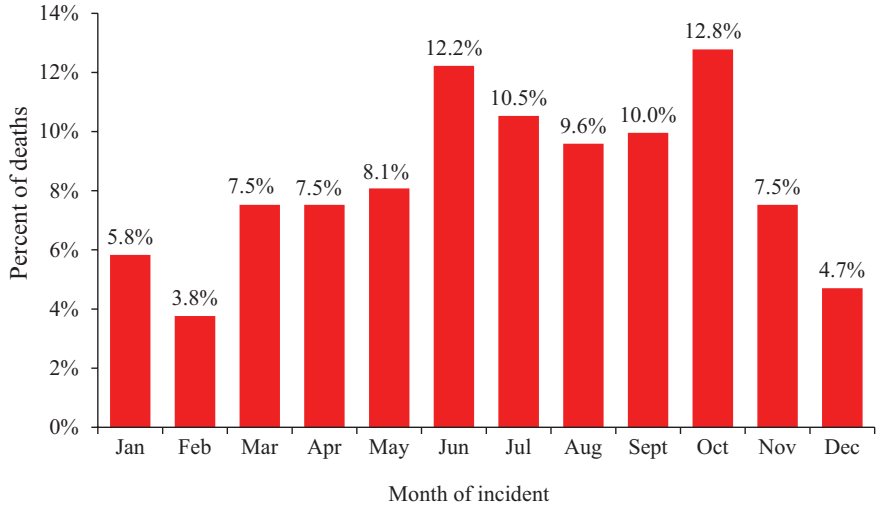


Note: Self-employed workers were excluded.
Source: Fatal injury data were generated by the CPWR Data Center with restricted access to BLS CFOI micro data. The views expressed here do not necessarily reflect the views of the BLS.

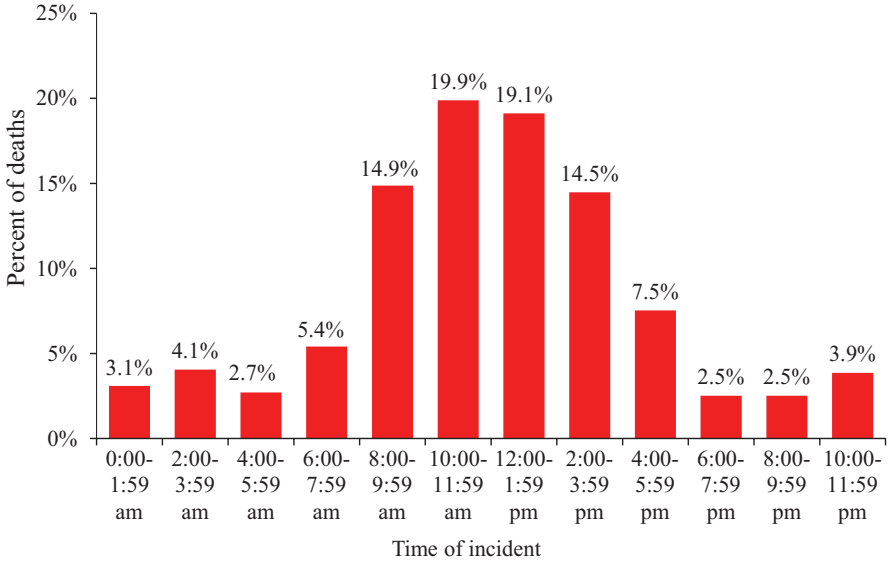
Section 1: Trends of Fatal Injuries at Road Construction Sites Second Quarter 2018

Fatalities at road construction sites were more likely to occur between June and October than other months. Fatal injuries at road construction sites during these five months accounted for more than half (55%) of all such fatalities (chart 10). In terms of time of incident, road construction site fatalities tend to happen during the morning and early afternoon. About one in five (19.9%) fatal injuries at road construction sites occurred between 10:00 and 11:59 am, the most common of all time frames, and another 19.1% happened between 12:00 and 13:59 pm (chart 11).

10. Percentage of fatal injuries at road construction sites, by month of incident, sum of 2011-2016



11. Percentage of fatal injuries at road construction sites, by time of incident, sum of 2011-2016



Source: Fatal injury data were generated by the CPWR Data Center with restricted access to BLS CFOI micro data. The views expressed here do not necessarily reflect the views of the BLS.

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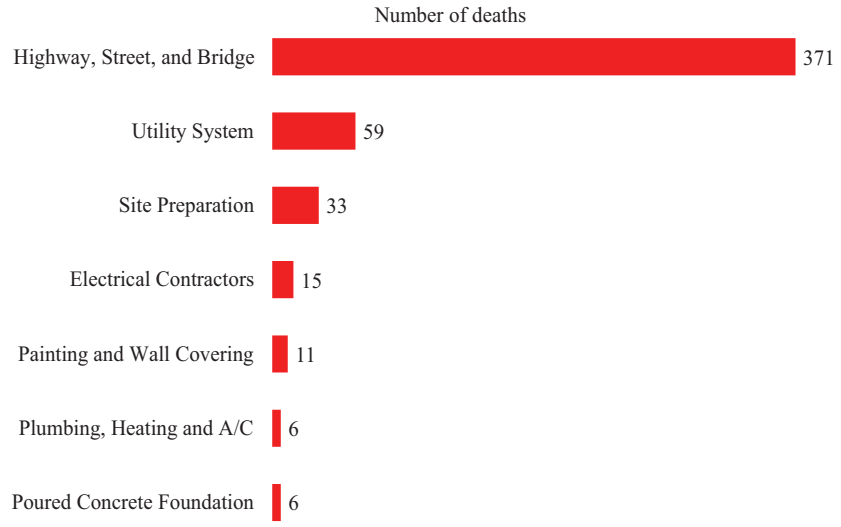
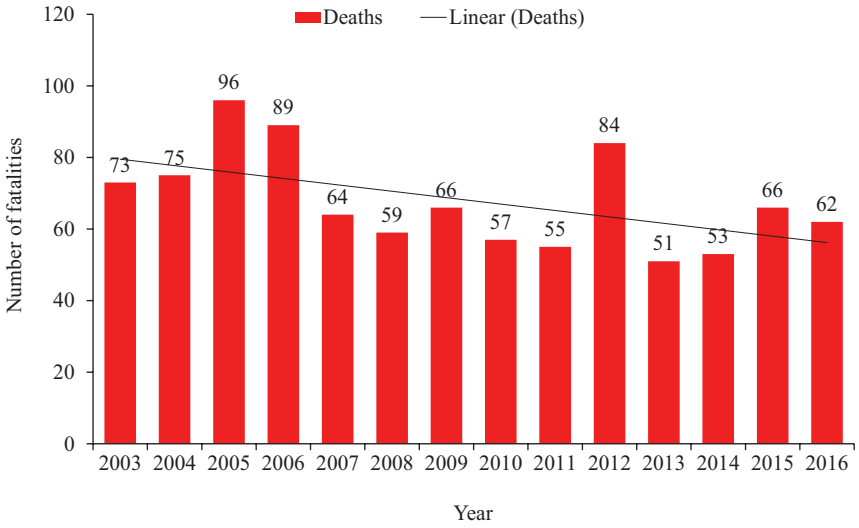
SECTION 2: Fatal Injuries at Road Construction Sites among Construction Subgroups

The risk of fatal injuries at road construction sites varied significantly among construction subgroups. By industry subsector, 371 workers in the Highway, Street, and Bridge subsector (NAICS 2373) were killed at road construction sites between 2011 and 2016, accounting for 72% of all road construction fatalities during these years (chart 12). Although the number of fatalities at road construction sites in this subsector fluctuated between 2003 and 2016, the overall trend is downward (*see* the trend line; chart 13).

12. Fatal injuries at road construction sites, selected construction subsectors, sum of 2011-2016



13. Number of fatal injuries at road construction sites in Highway, Street, Bridge subsector, 2003-2016



Source: Fatal injury data were generated by the CPWR Data Center with restricted access to BLS CFOI micro data. The views expressed here do not necessarily reflect the views of the BLS.

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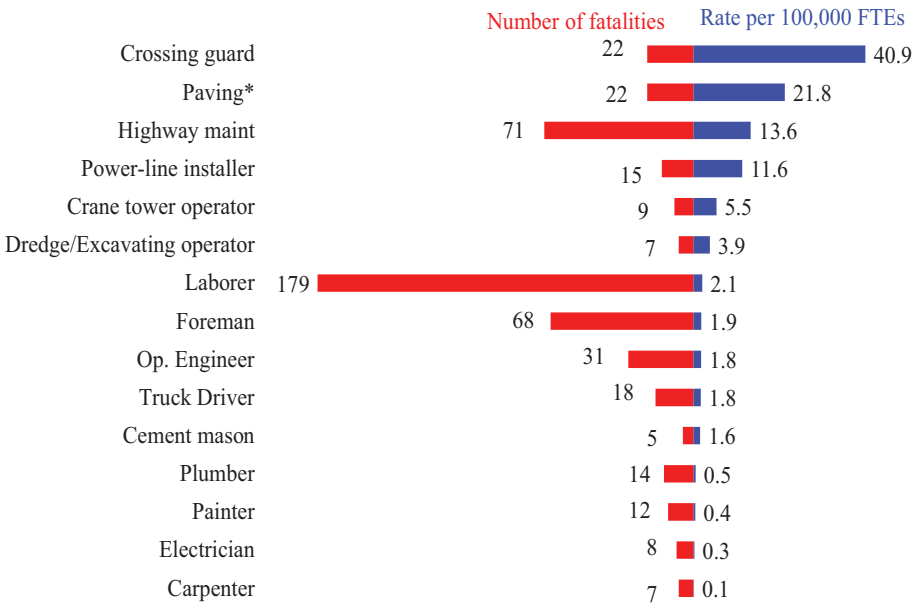
By occupation, a total of 179 construction laborers died at road construction sites from 2011 to 2016, the largest number among all construction trades (chart 9). However, crossing guards[2] had the highest risk of such fatalities, with 40.9 deaths per 100,000 FTEs, more than 40 times the rate at road construction sites for all construction occupations combined (0.9 deaths per 100,000 FTEs, *see* chart 19). Paving/surfacing equipment operators and highway maintenance workers had the second and third highest risk of such fatalities, respectively.

14. Number and rate of fatal injuries at road construction sites, selected occupations, sum of 2011-2016



[2] Crossing guards (Standard Occupational Classification (SOC) 33-9091) in this report work in the construction industry. According to the Occupational Information Network (O*NET), the tasks for crossing guards include: direct or escort pedestrians across streets, stopping traffic as necessary; guide or control vehicular or pedestrian traffic at such places as street and railroad crossings and construction sites; monitor traffic flow to locate safe gaps through which pedestrians can cross streets; communicate traffic and crossing rules and other information to students and adults; direct traffic movement or warn of hazards, using signs, flags, lanterns, and hand signals.

Note: Paving=Paving/surfacing equip. operator

Source: Fatal injury data were generated by the CPWR Data Center with restricted access to BLS CFOI micro data. Numbers of FTEs were estimated using the Current Population Survey. Calculations by the authors. The views expressed here do not necessarily reflect the views of the BLS.

Section 2: Fatal Injuries at Road Construction Sites among Construction Subgroups

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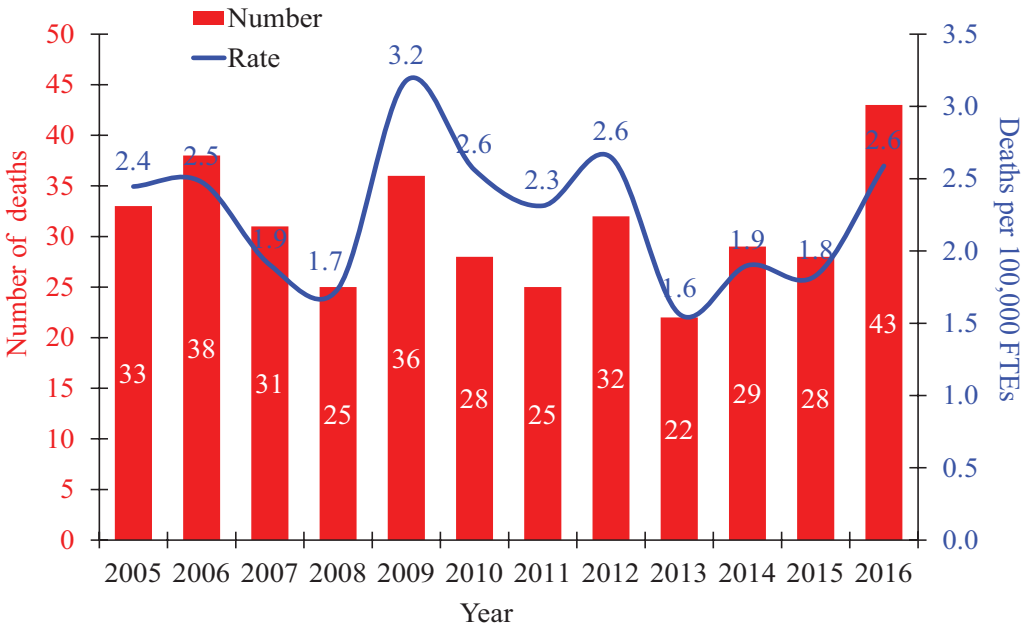
Both the number and rate of road construction site fatalities among construction laborers increased tremendously during the economic recovery. The number of construction laborers that were fatally injured at road construction sites nearly doubled from 22 in 2013 to 43 in 2016. The rate increased 63% from 1.6 to 2.6 deaths per 100,000 FTEs during the same time period (chart 15).

15. Number and rate of fatal injuries at road construction sites among construction laborers, 2005-2016



Source: Fatal injury data were generated by the CPWR Data Center with restricted access to BLS CFOI micro data. Numbers of FTEs were estimated using the Current Population Survey. Calculations by the authors. The views expressed here do not necessarily reflect the views of the BLS.

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Similar to the trend found among construction laborers, both the number and rate of deaths at road construction sites among crossing guards rose during the economic recovery. The number of deaths among construction workers working as crossing guards at road construction sites increased from 8 between 2008 and 2010[3] to 13 between 2014 and 2016. The rate more than doubled, jumping from 27.0 to 59.1 deaths per 100,000 FTEs during the same time period (chart 16).

16. Number and rate of fatal injuries at road construction sites among crossing guards, 2005-2016

[3]Death numbers in individual years were too small to meet BLS publication criteria. Four time periods were generated in these charts to account for the economic cycle.

Source: Fatal injury data were generated by the CPWR Data Center with restricted access to BLS CFOI micro data. Numbers of FTEs were estimated using the Current Population Survey. Calculations by the authors. The views expressed here do not necessarily reflect the views of the BLS.

Section 2: Fatal Injuries at Road Construction Sites among Construction Subgroups

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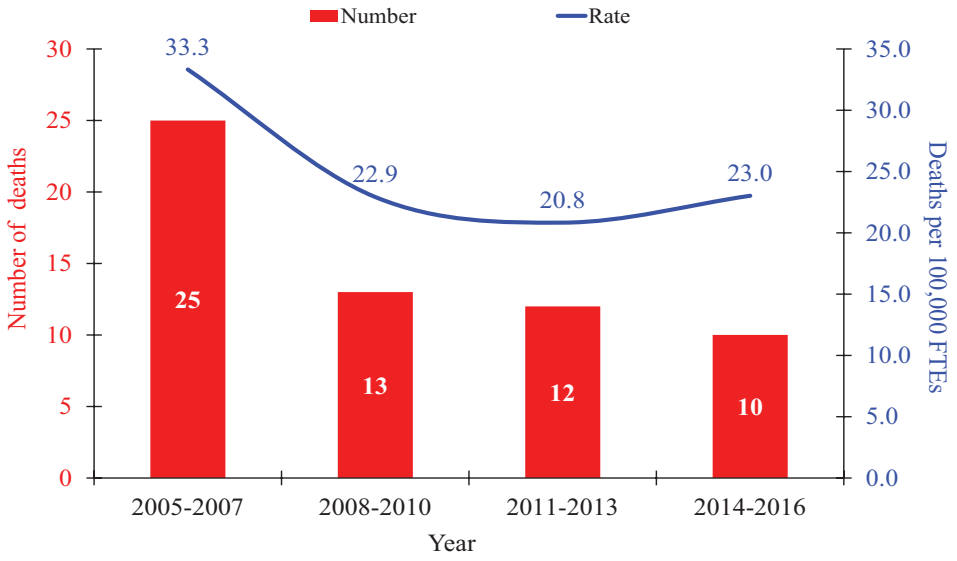
Although the number of paving/surfacing equipment operators that died at road construction sites decreased from 13 between 2008 and 2010 to 10 between 2014 and 2016, the rate stayed stable from 22.9 to 23.0 deaths per 100,000 FTEs during the same time period (chart 17).

17. Number and rate of fatal injuries at road construction sites among paving/surfacing equipment operators, 2005-2016



Source: Fatal injury data were generated by the CPWR Data Center with restricted access to BLS CFOI micro data. Numbers of FTEs were estimated using the Current Population Survey. Calculations by the authors. The views expressed here do not necessarily reflect the views of the BLS.

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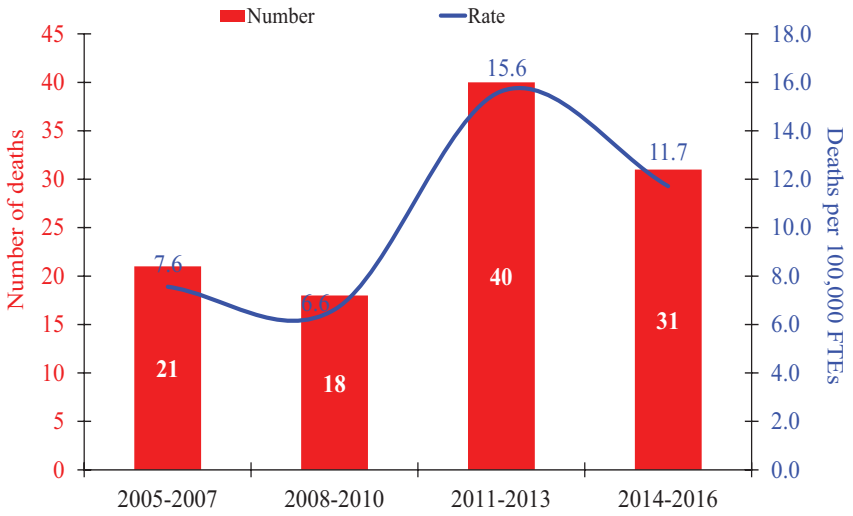
Both the number and rate of road construction deaths among highway maintenance workers experienced a notable increase during the economic recovery. The number of highway maintenance workers that were killed at road construction sites increased from 18 between 2008 and 2010 to 31 between 2014 and 2016, a 72% increase, and the rate increased at a similar pace from 6.6 to 11.7 deaths per 100,000 FTEs during the same time period (chart 18).

18. Number and rate of fatal injuries at road construction sites among highway maintenance workers, 2005-2016



Source: Fatal injury data were generated by the CPWR Data Center with restricted access to BLS CFOI micro data. Numbers of FTEs were estimated using the Current Population Survey. Calculations by the authors. The views expressed here do not necessarily reflect the views of the BLS.

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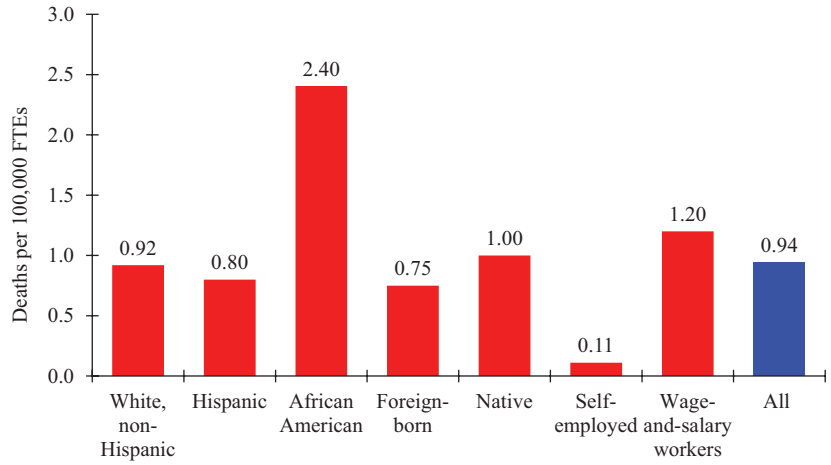
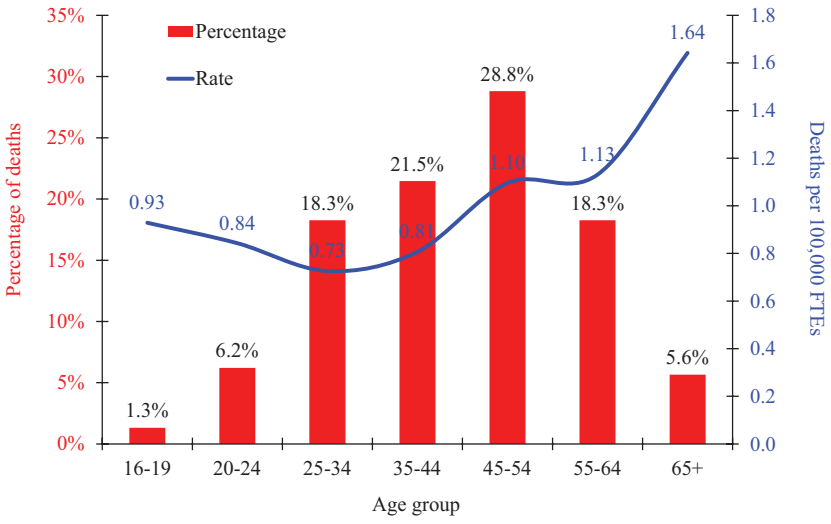
African-American workers had an elevated risk of road construction site fatalities. This might be because these workers are more likely to be employed in the public sector[4] and involved in road construction projects (chart 19). Similarly, wage-and-salary workers had a higher risk of fatalities than self-employed workers on road construction sites. By age, 28.8% of construction workers who died at road construction sites were between the ages of 45 and 54 years, the largest proportion among all age groups (chart 20). Conversely, while less than 6% of fatalities at road construction sites were among workers 65 years or older, the rate of such deaths for this age group was higher than for any other age group, with 1.64 deaths per 100,000 FTEs.

19. Rate of fatal injuries at road construction sites, selected worker characteristics, average of 2011-2016



20. Percentage and rate of fatal injuries at road construction sites, by age group, average of 2011-2016



[4]More than 8% of African American construction workers were employed in the public sector, which was double the proportion in the overall construction workforce (Source: CPS 2011-2016. Calculations by the CPWR Data Center).

Source: Fatal injury data were generated by the CPWR Data Center with restricted access to BLS CFOI micro data. Numbers of FTEs were estimated using the Current Population Survey. Calculations by the authors. The views expressed here do not necessarily reflect the views of the BLS.

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SECTION 3: Prevention in Construction

Injuries and fatalities at road construction sites are preventable. Many solutions can be implemented to prevent such injuries and fatalities among construction workers (Table 1).

Table 1: Solutions to Prevent Injuries at Road Construction Sites

Solution	Specific solutions
Increased visibility	• Require workers to wear high-visibility safety apparel, including fluorescent, brightly colored, and reflective apparel, vests with strobes, and illumination rings for hard hats[1a,1b,3] • Employ work zone lighting, glare-free if possible[1c,2] • Increase taper length[3] • Install low-level transition lighting at the beginning and end of road work area to allow motorists to adjust to changing lighting conditions[3] • Increase visibility of barriers with bright colored paint, reflectors, and lights[3] • Ensure work signage is lighted and visible[3]
Positive barriers between workers and traffic	• Use temporary longitudinal barriers, including concrete or movable[1d,1e,3] • Use other temporary traffic control devices such as traffic cones and barrels[1f,3] • Use truck-mounted attenuators[1g]
Warning systems for drivers	• Set up intrusion alarm systems[3] • Lay temporary rumble strips[1h] • Use warning lights[2] • Portable changeable message signs, used in conjunction with traffic queue detection equipment, to provide drivers with real-time information[2,3] • Use dynamic speed display sign[2]
Warning systems for workers	• Use sensors, handheld radios, and intrusion alarm systems[3] • Have an object detection and camera system for heavy equipment[1i] • Use self-adjusting and directional backup alarms[1j]
Speed reduction systems	• Enforce speed reduction with police presence and radar guns[,3] • Ticket and fine violators[3] • Apply speed reductions incrementally to maintain uniform traffic flow[3]
Impact attenuators	• Use crash cushions[1k] • Use truck-mounted attenuators[1g]
Engineering controls	• Use automated flagging assistant devices[1l] • Close the road, close the side of the road with work, or reroute traffic whenever possible[3]
Separate workers on foot from equipment	• Use flexible colored poles or temporary pavement markings to delineate pedestrian-free areas within the work zone[3] • Train workers and equipment operators to communicate with hand signals[3]
Raise awareness	• Participation in National Work Zone Awareness Week and Turning Point[2] • Distribute site-specific safety materials to all visitors and employees in the activity area[3] • Ensure truck drivers and equipment operators are aware of internal traffic control plans[3] • Train all workers on the internal traffic control plan[3] • Hold daily toolbox meetings to discuss and report hazards, close-calls, and safety considerations for the day's tasks[3]
Equipment safety and rollover prevention	• Use equipment with rollover protective structures and seat belts[3] • Only allow trained and authorized workers to handle equipment[3] • Require the use of parking brakes and chocks when equipment is unattended[3] • Install light strips on trucks for visibility, and use low-level lighting so that operators can see workers[3] • Regularly inspect and maintain equipment[3] • Use edge guards on trailers[3]

Conclusion

The construction industry experiences a large burden of deaths at road construction sites. From 2011 to 2016, 532 construction workers were killed at road construction sites, more than double the total for all other industries combined. Deaths due to being struck by a vehicle or mobile equipment were the most common type of occupational fatality at road construction sites, while trucks were the top source of such incidents. Construction workers who worked as crossing guards and paving/surfacing operators at road construction sites had the highest risk of fatal injuries. Wage-and-salary workers, older workers, and African-American workers also experienced an elevated risk of such fatalities.

The increase in fatalities at road construction sites reported here emphasizes the importance of road construction safety (Eseonu et al, 2018). A high quality transportation network is vital to a top performing economy, and construction workers are necessary for road building, maintenance, and preservation (National Economic Council, 2014). As the highway infrastructure in this country ages, rebuilding and improving existing roadways will be more frequent than before (American Society of Civil Engineers, 2017). To prevent injuries and fatalities at road construction sites, OSHA and NIOSH offer safety training materials and intervention information for workers and employers (OSHA, 2017; NIOSH, 2017). Intervention methods and solutions are also available at the CPWR Construction Solution Database, NIOSH Motor Vehicle Safety at Work, FHWA, and the National Work Zone Safety Information Clearinghouse.

References

- American Society of Civil Engineers. 2017. https://www.asce.org/
- The Brookings Institution. 2015. Racing ahead or falling behind? 6 economic facts about transportation infrastructure in the United States, https://www.brookings.edu/research/racing-ahead-or-falling-behind-6-economic-facts-about-transportation-infrastructure-in-the-united-states/ (Accessed June 2018).
- Bureau of Labor Statistics (BLS). 2017. The Economics Daily, Fatal injuries at road work zones. http://www.bls.gov/opub/ted/2017/fatal-injuries-at-road-work-zones.htm (Accessed June 2018).
- Eseonu C, Gambatese J, Nnaji C. 2018. CPWR Small Study, Reducing highway construction fatalities through improved adoption of safety technologies, https://www.cpwr.com/publications/reducing-highway-construction-fatalities-through-improved-adoption-safety-technologies (Accessed June 2018).
- The Hamilton Project. 2011. Policy Proposal, Public-private partnerships to revamp U.S. infrastructure, http://www.hamiltonproject.org/papers/public-private_partnerships_to_revamp_u.s._infrastructure (Accessed June 2018).
- The National Economic Council and the President's Council of Economic Advisers. 2014. An economic analysis of transportation infrastructure investment, https://obamawhitehouse.archives.gov/sites/default/files/docs/economic_analysis_of_transportation_investments.pdf (Accessed June 2018).
- National Institute for Occupational Safety and Health (NIOSH). 2017. Highway work zone safety, https://www.cdc.gov/niosh/topics/highwayworkzones/ (Accessed June 2018).
- Occupational Safety and Health Administration (OSHA). 2017. Highway work zones and signs, signals, and barricades, https://www.osha.gov/doc/highway_workzones (Accessed June 2018).

Data Sources

- Bureau of Labor Statistics, 2003-2016 Census of Fatal Occupational Injuries.
- Bureau of Labor Statistics, 2003-2016 Current Population Survey.

Supplement: Sources of Table 1 (accessed June 2018)

1. Construction Solutions Database. Solution Summary.

    a. High-visibility safety apparel. http://www.cpwrconstructionsolutions.org/solution/822/high-visibility-safety-apparel.html?sess_id=2d0623f3ebb67810c49db5cb375f834d

    b. Illumination ring for hard hats. http://www.cpwrconstructionsolutions.org/solution/933/illumination-ring-for-hard-hats.html?sess_id=2d0623f3ebb67810c49db5cb375f834d

    c. Work zone lighting. http://www.cpwrconstructionsolutions.org/solution/875/work-zone-lighting.html?sess_id=2d0623f3ebb67810c49db5cb375f834d

    d. Temporary longitudinal barriers. http://www.cpwrconstructionsolutions.org/solution/975/temporary-longitudinal-barriers.html?sess_id=2d0623f3ebb67810c49db5cb375f834d

    e. Movable longitudinal barriers. http://www.cpwrconstructionsolutions.org/solution/967/movable-longitudinal-barriers.html?sess_id=2d0623f3ebb67810c49db5cb375f834d

    f. Temporary traffic control devices. http://www.cpwrconstructionsolutions.org/solution/974/temporary-traffic-control-devices.html?sess_id=2d0623f3ebb67810c49db5cb375f834d

    g. Truck-mounted attenuator. http://www.cpwrconstructionsolutions.org/solution/977/truck-mounted-attenuator.html?sess_id=2d0623f3ebb67810c49db5cb375f834d

    h. Rumble strips. http://www.cpwrconstructionsolutions.org/solution/976/rumble-strips.html?sess_id=2d0623f3ebb67810c49db5cb375f834d

    i. Object detection and camera system for heavy equipment. http://www.cpwrconstructionsolutions.org/solution/932/object-detection-and-camera-system-for-heavy-equipment.html?sess_id=2d0623f3ebb67810c49db5cb375f834d

    j. Self-adjusting and directional backup alarms. http://www.cpwrconstructionsolutions.org/solution/792/self-adjusting-and-directional-backup-alarms.html?sess_id=2d0623f3ebb67810c49db5cb375f834d

    k. Crash cushion. http://www.cpwrconstructionsolutions.org/solution/983/crash-cushion.html?sess_id=2d0623f3ebb67810c49db5cb375f834d

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Supplement: Sources of Table 1 (accessed June 2018) continued

l. Automated flagging assistant devices (AFAD). http://www.cpwrconstructionsolutions.org/solution/934/automated-flagging-assistant-devices-afad.html?sess_id=2d0623f3ebb67810c49db5cb375f834d

m. Building information modeling (BIM) for safety planning. http://www.cpwrconstructionsolutions.org/structural_steel/solution/931/building-information-modeling-bim-for-safety-planing.html

2. Eseonu C, Gambatese J, Nnaji C. 2018. CPWR Small Study, Reducing highway construction fatalities through improved adoption of safety technologies, https://www.cpwr.com/publications/reducing-highway-construction-fatalities-through-improved-adoption-safety-technologies

3. Department of Health and Human Services, National Institute for Occupational Safety and Health Centers for Disease Control and Prevention. 2001. Building safer highway work zones: Measures to prevent worker injuries from vehicles and equipment, https://www.cdc.gov/niosh/docs/2001-128/pdfs/2001-128.pdf

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About the CPWR Data Center

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Please visit CPWR's other resources to help reduce construction safety and health hazards:

Construction Solutions http://www.cpwrconstructionsolutions.org/
Construction Solutions ROI Calculator http://www.safecalc.org/
The Electronic Library of Construction OSH http://www.elcosh.org/index.php
Falls Campaign http://stopconstructionfalls.com/
Hand Safety http://choosehandsafety.org/
Work Safely with Silica http://www.silica-safe.org/

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