Build Safe Build Strong

Keeping Infrastructure Workers Safe as America Rebuilds



CPWR SAFETY BRIEFING

THE BIPARTISAN INFRASTRUCTURE INVESTMENT AND JOBS ACT



Executive Summary

- On November 15, 2021, President Biden signed H.R. 3684, the <u>Bipartisan Infrastructure Invest-</u><u>ment and Jobs Act</u> (IIJA), which authorized \$550 billion in new spending and hundreds of billions more in reauthorized spending to rebuild and strengthen the nation's infrastructure. This "once-in-a-generation" investment will help grow the economy, improve public safety, and create hundreds of thousands of good-paying jobs.
- The IIJA will create many new business opportunities and jobs for the construction industry in each of the broad infrastructure funding categories: Transportation; Climate, Energy and the Environment; and Broadband.
- Building a strong and safe infrastructure for the public begins with protecting the safety and health of the construction workers employed on IIJA-funded or -assisted construction projects.



- The IIJA offers a unique opportunity for government, labor, management, and safety and health researchers to work together to ensure workers receive safety and health training, OSHA standards are complied with, and research findings and best practices are followed.
- CPWR The Center for Construction Research and Training, which serves as the NIOSH National Construction Center, is well positioned to work with these groups. CPWR offers FREE safety and health resources to help construction employers keep their employees safe and healthy as America rebuilds.
- An <u>infrastructure-focused section of CPWR's website</u> provides easy access to a growing body of planning, training and education resources, best practices and solutions, and research applicable to infrastructure work. CPWR's <u>Data Center will be monitoring and reporting on</u> the IIJA's impact on the construction workforce and safety and health trends. Their findings will influence the development of new resources and research undertaken.
- Those involved in IIJA-funded or -assisted projects will be kept informed of industry trends, new resources, including those available from other sources such as OSHA and NIOSH, and research finding through CPWR's <u>newsletter</u>, <u>webinars</u>, <u>podcasts</u>, social media (<u>Facebook</u>, <u>Twitter</u>, <u>LinkedIn</u>, and <u>Instagram</u>), and industry events, such as CPWR's <u>r2p seminar</u>.
- To learn more about how CPWR can help support safety and health on infrastructure projects contact Jessica Bunting at <u>jbunting@cpwr.com</u>.

Introduction

Construction Opportunities in the Bipartisan Infrastructure Investment and Jobs Act

On November 15, 2021, President Biden signed H.R. 3684, the <u>Bipartisan Infrastructure Investment and</u> <u>Jobs Act</u> (IIJA). The IIJA authorized \$550 billion in new spending and hundreds of billions more in reauthorized spending to rebuild and strengthen the nation's infrastructure. This "once-in-a-generation"¹ investment will help grow the economy, improve public safety, and create hundreds of thousands of good-paying jobs.²

For those in the construction industry, the IIJA offers new business and employment opportunities in each of the broad infrastructure funding categories: Transportation; Climate, Energy and the Environment; and Broadband. The types of construction projects funded under the IIJA will involve all of the building trades³ in a variety of construction projects, including: rebuilding roads and bridges; upgrading and constructing transportation terminals, ports, and other facilities; repairing gas distribution pipelines; building a network of electric vehicle chargers; replacing lead pipes; improving the energy efficiency of existing structures (HVAC, lighting, etc.); constructing water distribution systems and treatment plants; repairing dams; cleaning up brownfield and superfund sites; and constructing and maintaining infrastructure to expand access to broadband services. Details on the types of construction work authorized in each category can be found in the Biden Administration's Guidebook to the Bipartisan Infrastructure Law and the accompanying online data file that is searchable by category, program name, agency, bureau, funding amount, and funding mechanism.

Building a strong and safe infrastructure for the public begins with protecting the safety and health of the construction workers employed on these federally funded or assisted construction projects. The IIJA offers a unique opportunity for government, labor, management, and safety and health researchers to work together to:

- Provide workers with safety and health training;
- Promote use of best practices to identify and mitigate hazards; and

Ensure compliance with applicable safety and health standards, including the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) construction standards (29 CFR 1926) and applicable sections of the general industry standard (29 CFR 1910) for construction work performed under that standard.

To keep workers safe on the job, when **government agencies** administering IIJA or other funds are reviewing proposals, they can encourage funding applicants to include details on safety and health training, use of best practices, and compliance with standards and consider these elements as positive factors. **Labor** and **management** can collaborate to provide safety and health training to the construction workforce, particularly those who may be new to the industry or live in underserved communities. All three—labor, management, and government—can partner with safety and health researchers to find solutions for persistent and emerging hazards identified on infrastructure projects.

There are already funds and other resources available to help construction employers engage in safe practices on infrastructure projects. The IIJA, through the Surface Transportation Reauthorization Act of 2021, allows state transportation departments to use federal resources to create contingency funds "to cover costs for safety enhancements prior to or during construction and renovation projects that were not anticipated when contracts were initially approved."⁴ In addition, funds available through the 2020 American Rescue Plan may be used to "train the workers needed to build high quality infrastructure."⁵ Such training should include lessons on how to work safely.

Free resources are also available from <u>OSHA</u>, the <u>National Institute for Occupational Safety and Health</u> (NIOSH), and <u>CPWR – The Center for Construction</u> <u>Research and Training (CPWR)</u> to help construction employers with safety and health training, identification and mitigation of hazards, and compliance with standards on infrastructure projects.

Ways CPWR Can Help Advance Safety and Health

CPWR is the NIOSH National Construction Center and has been a leader in construction safety and health for over 30 years. With established relationships with North America's Building Trades Unions (NABTU), NIOSH, OSHA, industry leaders, and intermediaries such as insurers and equipment manufacturers, CPWR is well positioned to work with government, labor, management, and safety and health researchers to help construction employers keep their employees safe and healthy as America rebuilds.

CPWR has ongoing programs to conduct research on safety and health hazards facing the construction industry, develop training curriculums and educational materials, and identify best practices and solutions to mitigate hazards and strengthen the industry's safety culture and climate. Many of the outputs from these programs can also be adapted for use by other industries undertaking projects under the IIJA.

The following are ways CPWR can help advance safety and health on construction infrastructure projects.

I. Identify and Respond to Workforce and Safety and Health Trends

CPWR's <u>Data Center</u> is a leading source of detailed, reliable, and timely data for safety and health issues facing the construction industry. Data from both published and unpublished government and private sources, as well as internally generated data, is used to monitor demographic and industry trends, identify the impact of these trends on construction safety



and health, and measure the cost of work-related injuries and illnesses. Findings are presented in easily accessible formats to meet industry stakeholders' and safety and health researchers' needs.

The Data Center's research team will be examining the IIJA's impact on construction employment and occupational safety and health. Their findings will be reported and shared with government, industry, and the public through:

- Data Dashboards, which provide detailed information in an interactive, graphic format.
- Data Bulletins, which are published six times a year to share timely, data-driven information. The March 2022 issue on <u>Employment Trends and</u> <u>Projections in Construction</u> provides a baseline for tracking the effect of the IIJA on the industry.
- Presentations to industry and research audiences and peer-reviewed journal articles.

Information generated by the Data Center will help construction employers and others involved in infrastructure work understand the IIJA's impact, be used to identify research gaps, and inform the development of new safety and health resources for use by construction employers and workers on infrastructure projects.

II. Provide Free Resources to Identify and Mitigate Risks and Comply with Standards

CPWR's Research to Practice (r2p) and Communications programs maintain a large and growing body of research-driven resources to help employers protect their employees' safety and health on IIJA-funded or -assisted construction projects. These resources include some that are applicable to all construction projects and others that are tailored for specific types, such as building roads, repairing bridges and pipelines, and building, repairing, insulating and upgrading structures. Most are available in English and <u>Spanish</u>, and many can be adapted for other industries undertaking programs or activities outlined in the IIJA. For example, CPWR's safety culture and climate materials could be adapted by Amtrak to fulfill the requirement to review and improve its "overall safety culture."⁶

Planning and Management Resources

Planning for how work will be performed safely must be done throughout a project's life cycle, including when a bid is developed, before work begins, and while work is underway. CPWR has developed the following **free tools** that a construction employer on an IIJA-funded or -assisted project can use to develop safety plans for common hazards and improve their company's overall safety and health performance.

- Safety Culture & Climate A strong positive safety culture and climate has been found to help reduce the potential for job site injuries, illnesses, and fatalities. Employers can use CPWR's <u>Safety</u> <u>Climate-Safety Management Information System</u> (SC-SMIS) to assess their company's safety climate, select and implement appropriate steps and tools to strengthen it, and engage in continuous safety climate improvement. The SC-SMIS allows users to choose between the full in-depth assessment or a streamlined needs assessment based on factors such as crew size and available resources.
- Work Safely with Silica Many of the construction materials (e.g., cement, asphalt, block) that will be used on infrastructure projects contain silica. This website includes resources to help construction employers comply with OSHA's silica standards (29 CFR 1926.1153 and applicable sections of 1910.1053), including information on requirements under the standards, exposure risks, training resources, the latest research, answers to common questions, and the Create-A-Plan tool. This planning tool can be used by employers to create the written exposure control plan required by OSHA's standards in three steps: step 1 helps employers identify the silica containing materials that will be used; step 2 provides information on dust controls and examples of commercially available tools that can be

used to control exposures; and step 3 contains prompts and information to complete a comprehensive plan. Once the steps are completed, the tool will generate a written plan that can be printed, emailed, or saved. Users who register can save their confidential plans to retrieve, edit, and/ or rename new plans.

Best Built Plans Program – Manually lifting and ► moving heavy materials is a common task on construction job sites and can result in strain, sprain, and related soft tissue injuries. These types of injuries cost businesses billions of dollars and are a leading cause of disabling injuries in the construction industry. This program provides contractors and workers with practical tools and information to plan for safe materials handling while staying productive and profitable. Tailored for use at each stage of a project, from preparing a bid to project completion, the program provides employers with access to planning spreadsheets, material weights, storage and handling options, daily checklists, and training and educational materials, including games to play on smartphones that reinforce safe lifting practices. The planning tool and selected training resources, including the games, are also available in Spanish.

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Fall Prevention Plans – Falls are a leading cause of injury and death on construction sites. Developing and implementing a detailed fall protection plan is essential to protect all workers at risk for a fall. CPWR has two planning options available. The Fall Protection and Rescue Plan is a generic plan available in English and Spanish that can be printed and filled in with job-site-specific details. The Small Contractor Fall Prevention Planning Resource is designed for employers who may have limited experience or access to the resources to develop a fall prevention plan. In addition to planning forms and checklists, this package includes information on selecting the right tools and equipment, and materials that can be used to train employees. This resource is also available in <u>Spanish</u>.

- COVID-19 Since March 2020, construction employers have been taking steps to prevent the spread of COVID-19 and keep their job sites open. CPWR's COVID-19 Planning Tool takes employers step-by-step through developing a prevention plan. This includes what to consider when conducting a job hazard analysis for COVID-19, selecting appropriate controls, screening workers and visitors, training employees, and implementing the plan. Users who register can confidentially save their plans to retrieve, edit, and/or rename as a new plan. The companion COVID-19 Construction <u>Clearinghouse</u> is a central source for the latest information on the pandemic, including best practices, guidance, and training materials.
- Return on Investment Calculator An important step in planning is understanding the financial impact of selecting one tool or work practice over another. This online calculator was developed to help employers evaluate the impact of new equipment, materials and work practices introduced to improve safety. The calculator includes several examples that can be modified to reflect company-specific data.

Training & Education Resources

A critical part of creating a safe infrastructure project is ensuring that the construction workers employed on the project understand potential risks and the steps being taken to protect them.

CPWR offers free training programs developed as part of its research initiatives to <u>build safety leaders</u> and address common hazards. The comprehensive ergonomics training program, developed as part of the Best Built Plans program, has modules for <u>workers</u> and <u>contractors</u>, and there are hazard-specific programs that address <u>noise and hearing loss</u>; head injuries; opioid addiction; hand injuries; and exposure to radiofrequency (RF) radiation. Many of these training resources are available in Spanish.

In partnership with NABTU affiliates and the contractors who employ their members, CPWR has developed a series of safety and health training programs for use in union labor-management apprenticeship and training programs. The programs include: hazardous waste worker training and a version for Department of Energy work; disaster response training; confined space, and environmental career worker training. This last program has already begun training vulnerable populations to replace lead pipes in their communities — a focus of the work in the IIJA's Climate, Energy and the Environment funding category. In addition, CPWR's <u>National Resource</u> <u>Center</u> is part of a consortium recognized by the OSHA Training Institute as an Education Center.

CPWR also has a variety of educational resources that can be used on their own or to supplement and reinforce safety and health training programs.

The <u>Toolbox Talk Series</u> provides brief discussion sheets to use on job sites during morning check-ins or tailgate meetings to raise workers'



awareness of specific hazards they will encounter on the project and steps being taken to address the hazards. Each Toolbox Talk includes discussion questions that employers can use to understand workers' concerns and discuss protective equipment and work practices that will be used on the job site.

- Hazard Alert Cards provide hazard-specific safety and health information, describe employer and employee responsibilities, identify applicable voluntary and required standards, and describe protective measures. These pocket-size cards can be used as handouts on job sites or included in training programs.
- Videos & Podcasts are available on a variety of safety and health topics, including recordings from webinar presentations. CPWR's <u>webinar</u> <u>series</u> and podcasts address the latest safety and health issues facing the industry and include advice from industry experts.

Best Practices & Solutions

CPWR also has resources, often used in conjunction with the planning, training, and education resources introduced earlier, to help construction employers and their employees find and use equipment and best practices to address hazards they may encounter on infrastructure projects. These include:

- Materials to reinforce best practices, such as the Field Guide for Controlling Silica Dust Exposure on Asphalt Pavement Milling Machines and a collection of infographics to use as posters on job sites and in employee communications;
- Repositories of resources in support of joint government and industry campaigns, such as the campaigns to prevent falls and struck-by incidents; and
- Online databases on <u>nano-enabled construc-</u> <u>tion materials</u>, <u>occupational exposures to and</u> <u>controls for silica, lead, welding fumes and noise</u>, and <u>construction solutions</u> for specific work, task and hazard combinations.

III. Conduct Research on Hazards Found on Infrastructure Projects

CPWR's ongoing research initiatives provide the evidence base for the development of planning, training and educational materials, best practices, and solutions to protect construction workers and improve their safety and health. This research is driven by current concerns in the industry and covers a wide variety of issues facing construction workers. Several of the <u>current</u> and <u>completed</u> multi-year research projects address hazards that construction employers and their employees may encounter on IIJA-funded infrastructure projects. For example:

- A study currently underway is <u>evaluating the</u> <u>potential use of exoskeletons</u> to reduce demands on areas of the body most affected by work-related musculoskeletal disorders and make construction work more accessible to a broader population of workers.
- An expanded research project in progress is studying reactive chemical resin systems to <u>understand the health risks associated with</u> <u>exposures to Part B components</u>. Part B contains several chemicals found in construction products, including solvent blends, hardeners or catalysts, engineered nanomaterials and other additives, crystalline silica, and flame retardants. Exposures have been associated with multiple diseases, including contact dermatitis, cancer, and cardiovascular disease.



A completed study, conducted in partnership with major tool manufacturers and the labor-management Masonry r2p Partnership, developed a systematic method to <u>evaluate different concrete</u> <u>drilling methods and measure health-related</u> <u>exposures and productivity</u>. This study found, for example, reduced exposures to noise, silica and vibration and an improvement in productivity when an electric drill was used rather than a pneumatic drill.

In addition to these longer-term studies, CPWR's <u>Small</u> <u>Study Program</u> provides seed money of up to \$30,000 to explore emerging hazards and technologies and address the needs of high-risk construction populations. Many completed small studies have already produced findings applicable to infrastructure work, including studies that explored the use of a new <u>mobile</u> <u>proximity sensing technology to improve work zone</u> <u>safety</u>, <u>unmanned aerial systems to identify fall hazards</u> on high-rise projects, and the <u>application of preven-</u> <u>tion through design (PtD) to improve solar installation</u> safety. These short-term studies (12-month duration) can be used to address safety and health issues that arise on infrastructure projects as work progresses.

IV. Partner with Government and Industry

Partnerships with government and industry play an important role in CPWR's efforts to ensure that research findings and solutions that can prevent occupational injuries, illnesses, and fatalities are adopted on construction projects (<u>research to practice</u>). Such partnerships can continue to play a critical role in protecting the safety and health of construction workers rebuilding the nation's infrastructure.

CPWR has different types of partnerships that can be tapped into, including interagency work groups and alliances; industry r2p partnerships, an online network; an ergonomics community of practice; and a roundtable focused on the needs of vulnerable populations. In addition, relationships established by CPWR researchers in support of their projects may also be of assistance.

Stay Informed of New CPWR Data, Resources, and Research

To keep everyone involved in IIJA-funded or -supported construction projects informed of industry safety and health trends, new research findings, and available resources, CPWR has developed an <u>infrastructure-focused</u> <u>section of its website</u> that includes materials for each of the broad infrastructure funding categories: Transportation; Climate, Energy and the Environment; and Broadband. It will be updated regularly and new information will be shared through CPWR's <u>newsletter</u>, <u>webinars</u>, <u>podcasts</u>, social media (<u>Facebook</u>, <u>Twitter</u>, <u>LinkedIn</u>, and <u>Instagram</u>), <u>r2p seminar</u>, and industry events.

To learn more about CPWR programs, resources, research, and partnerships available to advance safety and health on infrastructure construction projects, contact:

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Endnotes

- ¹ Executive Order on Implementation of the Infrastructure Investment and Jobs Act, November 15, 2021.
- ² Protections for Workers in Construction under the Bipartisan Infrastructure Law, accessed February 2022.
- ³ North America's Building Trades Unions Affiliates, accessed February 2022
- ⁴ <u>H.R. 3684 Section 11107. Federal Share Payable. Section 120 of title 23 (1) (B) (vi)</u> "contractual provisions that provide safety contingency funds to incorporate safety enhancements to work zones prior to or during roadway construction activities..."
- ⁵ <u>A Guidebook to the Bipartisan Infrastructure Law for State, Local, Tribal, and Territorial Governments, and Other</u> Partners, Page 8, accessed February 2022
- ⁶ H.R. 3684 Section 22406. (4)(c)(1)(C) and Section 22407 (a)(1).

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