



REALIZING THE WORKFORCE POTENTIAL OF INFRASTRUCTURE INVESTMENTS

State Strategies to Advance Job Quality and Build
Inclusive Workforces in Transportation and Clean Energy



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Introduction

Recent federal investments will direct rare levels of funding toward transportation and clean energy infrastructure projects over the next decade, including hundreds of billions of dollars in new spending.

- The Infrastructure Investment and Jobs Act of 2021 (IIJA) directs approximately \$591 billion and \$75 billion to transportation and clean energy, respectively, over a five-year period.¹
- The Inflation Reduction Act of 2022 (IRA) also invests about \$369 billion in U.S. energy modernization, building upgrades, and technology deployment through 2032.²

If multifaceted action is taken, this rare level of funding can support millions of good quality jobs that can provide economic security and mobility to many people, including demographic groups that have long been underrepresented in these sectors.³

Transportation and clean energy sectors already represent a large share of the U.S. workforce and are anticipated to add hundreds of thousands of additional jobs per year.⁴ Like occupations across infrastructure sectors today, the majority of transportation and clean energy jobs are likely to be attainable for workers without bachelor's degrees.⁵ They tend to pay more than occupations with similar education credential requirements and have higher rates of unionization,⁶ a characteristic associated with significant job quality benefits.⁷

While there are numerous positive workforce trends in infrastructure, there are also persistent and significant disparities in the demographic makeup of the U.S. infrastructure workforce broadly, including in these sectors.

Women and younger workers are vastly underrepresented.⁸ Racial/ethnic inequality is also pervasive, with Black and Latino or Hispanic workers being very overrepresented among the lowest-paying occupations in the sectors.⁹

There are also pronounced job quality issues that, left unaddressed, would likely continue on many of the worksites supported by this spending. In construction, a major area of near-term infrastructure work, there are high rates of reported worksite harassment and discrimination,¹⁰ a job quality issue that contributes to disparities in opportunity to thrive within these sectors.



While these investments will touch a wide range of entities from utilities to local transit agencies to ports, a large share will flow through state-level infrastructure agencies (e.g., state transportation departments and state energy offices, which for the purposes of this report are referred to as “infrastructure agencies”)¹¹. Critically, such funding provides a meaningful amount of discretion for states to shape the ways these funds are subsequently disbursed. For example, within the aforementioned IIJA totals, state transportation departments are slated to receive at least \$250 billion by way of formula allocation. IIJA included significant changes to the eligible expenditures for this pool of funding, such that states can now use an uncapped amount for broadly defined programs and services to support access to careers in transportation.¹² States also have a variety of options to shape the practices of the private sector in transportation and clean energy through setting priorities within terms and expectations in the bidding of projects.



With the potential to touch millions of jobs, the nature of the transportation and clean energy funding flowing to state governments affords significant resources and options to make their infrastructure investments a major propeller for inclusive workforces with good quality jobs. Yet, aligning workforce goals with those of infrastructure implementation represents a significant shift from the standard priorities of state infrastructure spending. State transportation, energy, and workforce agencies will be central players in this challenge, along with other state agencies that interface with jobseekers and other stakeholders, such as local workforce boards, unions and labor-management partnerships, community-based organizations, among others.

To aid states in realizing the workforce potential of their infrastructure investments, the Markle Foundation, the Eno Center for Transportation (Eno), and the National Association of State Energy Officials (NASEO) launched an initiative to convene state transportation or energy agencies, respectively, with the counterpart state workforce agencies in six states.¹³

The initiative focused on opportunities in transportation in California, Illinois, and Indiana, as well as opportunities in clean energy in Colorado, Massachusetts, and Pennsylvania. Leaders from these agencies came together in 2022 to explore opportunities to build on existing systems and work toward shifting their practices to better support access and inclusion to good quality jobs in transportation and clean energy sectors. In addition to the convenings of state leaders, this initiative also issued a survey to a wider net of state transportation and energy offices in late 2022. Learnings from this initiative were used to inform this report.



Framework for State Action

This report offers an actionable framework of strategies that states should prioritize to raise job quality and inclusive workforce development practices to the fore of their infrastructure implementation.

States will need to navigate a complex array of options, many of which are new ways of operating and atypical priorities for critical state agencies. To that end, this Framework for State Action highlights the need for state infrastructure and workforce decision-makers to take actions in three areas:

1 Deepen Cross-Agency Coordination

Building strategic partnership between agencies is an often-overlooked starting point that provides a foundation for agencies to build on and fill critical gaps in existing systems. These partnerships between infrastructure, workforce development, and other critical stakeholders support the work to create and scale programs, ensure those programs are meaningfully connected to good quality jobs with mobility potential, and operationalize using tools and data at the state government's disposal to expand access to jobs connected to state infrastructure spending.

2 Augment Workforce Program Funding

States have significant opportunities to use incoming federal funds through IIJA and IRA to directly augment the workforce programs and services needed to expand paths for people, especially underrepresented populations, to join and succeed in infrastructure sectors.¹⁴

3 Embed Into Procurement

States can integrate requirements, preferences, or encouragements into infrastructure spending to drive employers to prioritize good quality jobs and inclusive workforce practices. This could include mandating that projects use apprenticeship programs to complete projects, creating financial incentives for employers to form partnerships with community and workforce stakeholders to build inclusive paths to their jobs, or requiring a share of work-hours on projects be completed by workers of certain demographic, geographic, or economic criteria. While there is a range of options for states to embed workforce and job quality into the procurement processes and terms for their infrastructure spending, to implement any goals, states will need meaningful accountability structures to ensure intended workforce priorities go beyond goals to become outcomes.

About This Report

The first section of this report details key elements of the opportunity before states.



SCALE OF THE OPPORTUNITY

Discusses the scale of the opportunity for states to take more intentional action to prioritize job quality and workers in their IIJA and IRA implementation.



CRITICAL STAKEHOLDERS AND KEY ROLES

Provides an overview of the roles of critical state transportation, energy, and workforce agencies as well as other stakeholders in supporting broad and inclusive paths to transportation or clean energy workforces connected to state spending.



FUNDING OPPORTUNITY

Details key federal funding opportunities, available to states to support workforce development in transportation and clean energy, with a focus on IRA and IIJA.



KEY LESSONS

Presents key findings from the Markle-Eno-NASEO initiative that convened state workforce and transportation or energy leaders.

The second section of this report offers a Framework for State Action.



FRAMEWORK FOR STATE ACTION

Three categories of mutually supportive strategies for states to capitalize on incoming funds to create robust, inclusive paths to good quality jobs in key infrastructure sectors, including examples of relevant models from around the country.



This report is intended to support state decision-makers in infrastructure-related agencies, workforce development or labor agencies or advisers, and those involved in cross-agency infrastructure implementation.

However, this report is also intended to offer an actionable approach to inform leaders in parallel federal agencies, local and regional infrastructure project owners (including local governments), and economic justice and/or workforce focused organizations.

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- Illinois Department of Transportation
- Indiana Department of Transportation
- Indiana Department of Workforce Development
- Massachusetts Clean Energy Center
- Massachusetts Department of Energy Resources
- Massachusetts Executive Office of Labor and Workforce Development
- MassHire
- Pennsylvania Department of Community and Economic Development
- Pennsylvania Department of Environmental Protection
- Pennsylvania Department of Labor and Industry
- Wisconsin Department of Workforce Development¹⁵
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Scale of the Opportunity

There are several key factors that collectively create an important window of opportunity for states to prioritize job quality and workforce development in transportation and clean energy.

Demand for U.S. infrastructure workers—particularly in transportation and clean energy—is poised for significant growth. Though estimates of the scale of job creation from new federal investments vary, a recent analysis from the Brookings Institution predicts that the infrastructure sector (including sectors beyond transportation and clean energy) may gain up to 1.5 million jobs every year over the next decade due to new federal investments, while an estimated 1.7 million workers will leave their infrastructure jobs annually. This analysis also finds that prior to anticipated future investments, infrastructure accounted for nearly 12 percent of national employment in 2021—16.6 million workers—with most of those jobs concentrated in transportation (73 percent) and energy (12 percent).¹⁶ Prior to the passage of IIJA and IRA, both sectors were experiencing steady growth (about 3 to 4 percent per year in energy¹⁷ and about 2 to 3 percentage points in transportation,¹⁸ not accounting for disruptions from the COVID-19 pandemic). Now, demand for transportation and clean energy workers is expected to scale drastically, especially in weatherization and energy efficiency, beneficial electrification, electric vehicles, clean energy generation, and highway construction.

Anticipated growth in transportation and clean energy work will necessitate broader, more accessible paths to join these workforces. If current trends continue, the anticipated demand for more workers will collide with several pronounced workforce challenges that could impact the ability to complete projects, including insufficient training and recruitment paths to meet demand for skilled workers,¹⁹ aging workers nearing retirement, and large numbers of existing workers leaving their jobs and/or sectors.²⁰ Recruitment can also be challenging in rural areas where many clean energy projects are located, due to aging and declining population trends.²¹ While only a small sample size, all state departments of transportation that responded to our survey conducted in late 2022 reported that finding skilled workers was their primary workforce concern.



Building bigger transportation and clean energy workforces provides an opportunity to be more intentional about connecting a larger number of people to infrastructure jobs, including demographic groups that have long faced barriers to joining infrastructure sectors and/or people that face pronounced barriers to securing family-sustaining employment. Notably, this growing workforce demand presents an opportunity to prioritize paths and inclusion within infrastructure for women, people who are not white, people in rural communities, people exiting incarceration, and people with disabilities. Doing so would break away from existing workforce trends in infrastructure.

For example:

- While women make up nearly half of the national workforce, they account for only 18.5 percent of infrastructure workers.²² Underrepresentation is particularly glaring in the construction workforce, where only 3.6% of construction trade apprentices in 2019 were women, with Black and Latina women represented just 0.7% and 0.6% of all construction trade apprentices, respectively (not specific to infrastructure).²³
- An analysis by the National Partnership for Women and Families projected that, should current demographic trends in infrastructure continue, women would only account for 29 percent of the jobs that IIJA is projected to create—and Black women and Latinas would account for less than 4 percent and less than 5 percent of new jobs, respectively.²⁴

- Black and Latino or Hispanic workers are also concentrated within the lower-paying occupations within the infrastructure sector, especially among laborers and material movers, which pay an average of about \$23,000 less than the labor market’s average pay.²⁵
- A survey of the U.S. energy workforce conducted in 2020 and 2021 indicates that women and people who are not white face a number of challenges in the industry, including lack of exposure to opportunities in the space, bias and prejudice in the workplace, and limited opportunities for promotion compared to white men.²⁶
- There are a number of barriers for workers in rural areas that if left unaddressed would hinder workers in these areas from benefitting from the new infrastructure funds, even if major projects are based in rural areas. For example, transportation to and from jobsites and training locations in rural areas is more likely to require access to a personal vehicle and access to digital training programs is worsened when high-speed internet is unreliable. Training and credentialing programs also often do not reach rural, sparsely populated communities.²⁷

Prioritizing job quality and planning for inclusive workforce development programs and policies attached to major clean energy and transportation projects may aid states in securing IIJA-related federal competitive grants, as the Biden-Harris Administration has included preferences in various competitive grant programs for plans that prioritize job quality and workforce development activities.²⁸ Additionally, a cross-agency strategy to prioritize good quality infrastructure jobs could also improve labor market outcomes among people seeking services from the public workforce system, which too often connects people that seek its services to jobs that pay low wages and overwhelmingly connects people to jobs where their gender is significantly overrepresented.²⁹

New investments present the opportunity for a broad swath of workers to secure jobs that pay a wage premium compared to other jobs that do not require a bachelor’s degree. Jobs in these sectors tend to pay a wage premium, a difference which may be explained in part by infrastructure sectors having higher rates of unionization. In 2021, infrastructure occupations paid wages that were 30 percent higher at low income levels (the 10th and 25th percentiles) than at similar levels across the economy.³⁰ One study found that an apprenticeship in the trades in Illinois rivals a bachelor’s degree at a state university in terms of lifetime earnings.³¹ The wage premium in infrastructure is particularly notable given that these jobs are likely to be accessible to workers without a bachelor’s degree—the majority of infrastructure workers in 2021 (54 percent) held a high school diploma or less, compared to 32 percent across all occupations.³² However, there are several job quality issues, especially relevant to infrastructure sectors, that states have policy levers to combat, such as discrimination and harassment on jobsites,³³ safety concerns,³⁴ and adherence to workplace laws³⁵ are all prevalent issues. States can address these problems through a variety of actions (as discussed in [Embed Into Procurement](#)).

The state infrastructure agencies that will receive the vast majority of federal funds going to states, including those with flexibilities to be used toward workforce development, often do not view workforce or job quality as one of their primary objectives. As previously mentioned, a significant portion of IIJA and IRA funds will flow through grants and programs administered or implemented by state agencies, in particular state departments of transportation and energy offices. For example, about \$250 billion from IIJA will be sent to state transportation departments in the form of formula surface transportation funds, which have new, uncapped, broad workforce flexibilities.³⁶ While state energy offices will not receive formula funding through IIJA at the scale of transportation departments, such agencies will still see important boosts in incoming mandatory funds. Plus, the IRA allocates nearly \$9 billion directly to state energy offices for the implementation of energy efficiency and electrification rebate programs ([see Funding Opportunity: Leveraging IIJA and IRA Funding](#)).³⁷ State transportation and energy agencies are also well-positioned to influence other state agencies and convene critical partners (e.g., contractors, labor leaders) to address workforce challenges and opportunities. Though job quality and workforce inclusion have not always been viewed by these agencies as central goals, they are interlinked with successful project completion: Research suggests that prevailing wage requirements, for example, can help companies lower turnover and may help ensure on-budget project delivery.³⁸

Critical Stakeholders and Key Roles

With a focus on transportation and clean energy jobs supported by state spending, this section provides an overview of critical stakeholders that have a central role to play in influencing job quality and building broader, more inclusive access to relevant jobs. It also highlights example functions those agencies have that are opportunities to influence these practices in those sectors. Many of these functions are shared across numerous stakeholder types.

The Framework for Action and related funding opportunities discussed in this report are most applicable to states' departments of transportation, energy offices, and workforce agencies. Additional stakeholders, discussed after these three state agency types, also play an important role in this challenge.



These stakeholders are particularly relevant to actions identified in the Framework for Action's

[First Set of Strategies: Deepen Cross-Agency Coordination](#)

CRITICAL STAKEHOLDER

State Departments of Transportation (State DOTs)

ROLE: State departments of transportation are responsible for the statewide planning and management of transportation infrastructure, assets, and programs. They are primarily focused on the highway and roadway network, though some are also responsible for local streets, public transit, aviation, and ports. They plan and allocate resources for building and maintaining transportation infrastructure using federal and state funding.

● Opportunities to Promote Job Quality and Workforce Inclusion:

- **Directly hiring workers**, which provides the opportunity to set terms of recruitment, training, and employment.
- **Sponsoring or funding training programs** for transportation occupations and bolstering support services for trainees.
- **Gathering and sharing key data and information** on anticipated projects, in-demand occupations, and hiring and retention on agency projects.
- **Encouraging, mandating, and enforcing job quality and inclusive workforce standards and practices** by incorporating terms into competitive contracting and procurement processes.
- **Encouraging and shining a spotlight on best workforce practices** among regional transportation entities.

CRITICAL STAKEHOLDER

State Energy Offices

ROLE: State, territory, and District of Columbia energy offices (referred to in this report as “state energy offices”) advance energy policies and programs, inform regulatory processes, support energy system planning, and promote energy technology research, demonstration, and deployment. In recognition of the critical role that energy plays in state and local economies, many state energy offices shape policies, plans, programs, and investments that aim not only to address climate and environmental goals but also to support economic growth and competitiveness, resilience, and energy affordability and reliability. Several state energy offices have opted to treat workforce development as a focus of their work.

● Opportunities to Promote Job Quality and Workforce Inclusion:

- **Providing direct expenditures (grants) for workforce training and readiness programs** in a variety of clean energy technologies and occupations.
- **Embedding job quality and workforce requirements or preferences into state clean energy spending**, such as family-supporting wages, childcare, health care and retirement benefits, and strategies to maximize the involvement of local workers, worker-owned cooperatives, and women- and minority-owned businesses.
- **Convening stakeholders, overseeing energy market assessments and analyses, and developing energy and climate policies and plans** gives unique insight into the urgent need for skilled workers. This allows energy offices to partner with workforce systems and partnerships to inform clean energy transition plans and support effective approaches to workforce development.
- **Supporting clean energy entrepreneurship and increasing STEM education, mentoring, and career awareness programs** to support the growth of a strong energy sector.

ROLE: In this report, the term “state workforce agencies” includes state workforce and labor agencies (involved in delivering labor market information, employer services, training grants, overseeing apprenticeship programs, career navigation, recruitment, and business services), as well as workforce development boards and their staff (which oversee a network of activities with local workforce development boards to coordinate workforce investments in economic regions). In many cases, state workforce boards are housed within a broader workforce and labor agency; in other cases, they are housed within a state’s economic development department or equivalent.

● Opportunities to Promote Job Quality and Workforce Inclusion:

- **Producing an accounting of relevant offerings in the state’s public workforce development system.** This includes the state’s available training programs and related funding streams, insight on which programs have strong performance for jobseekers, and any existing analyses on workforce projections.
- **Spending state and federal workforce dollars to support pathways into infrastructure careers, particularly for underrepresented groups.** Additionally, these agencies can highlight areas that are not covered that could be addressed using federal infrastructure funding. State workforce agencies have data and insights on what may be holding back the workforce system from more effectively preparing and connecting workers to in-demand infrastructure careers—whether it is insufficient supportive services in training programs, insufficient slots in highly effective training programs, insufficient connections between pre-apprenticeship programs and highly sought registered apprenticeship slots and good quality jobs.
- **Offering insight into the types of workforce development investments and approaches to shifting employer practice** that have proven most effective in the state to inform the broader strategy for infrastructure workforce implementation.
- **Directing jobseekers to high-quality jobs and training programs**, which creates pressure on employers to improve job quality to benefit from the public workforce system’s services.
- **Identifying priority workforce requirements** that infrastructure agencies could embed in their spending on projects in the aim of making those requirements realistic.

● **Governors' Offices**

Governors and their staff, especially those involved in infrastructure implementation and workforce or education policy, are uniquely positioned to coordinate across state agencies to advance infrastructure workforce goals. They can convene cabinet-level leadership, create working groups, or implement executive orders to further a state-level strategy. More generally, these offices can set priorities across agencies that can make it more realistic to actualize the actions discussed in the framework for state action.

● **Local Workforce Development Boards**

Local workforce development boards—overseen by state workforce development boards—consist of business, education, and workforce representatives. They direct workforce development investments, priorities, and strategy for use of WIOA funds in a county or multi-county region. They facilitate connections between employers and training providers to address skills development needs, especially in high-growth industries. They also oversee American Job Centers, which provide mostly in-person services to jobseekers, such as career counseling and job search assistance.

- As an example of how these entities could be involved in a state strategy, a state DOT or energy office could issue a competitive grant program for local workforce development boards to create a sector partnership geared toward building recruitment, training, and vital supports to prepare people for in-demand occupations in the relevant sector.
- They could also leverage WIOA funds to meet training needs and aid infrastructure project owners—including private developers taking advantage of IRA's tax credits—to meet workforce goals on their projects, such as apprenticeship utilization or targeted hiring requirements.

● **Pre-Apprenticeship Programs**

Pre-apprenticeship programs prepare people for registered apprenticeship, family-wage sustaining employment, or in some cases further education programs, often with the goal of broadening access to the trades for underrepresented groups.

These programs—which are typically operated by entities described in this section, such as unions or worker-focused organizations—can develop meaningful partnerships with registered apprenticeship programs and with public agencies to ensure that after completing training, graduates have a direct pathway into apprenticeship or other type of employment.

- Approaches to create those meaningful paths include having apprenticeship programs that define direct entry or preferences for graduates of the partnered pre-apprenticeship programs, plus fostering transparency and clarity on the availability of future registered apprenticeship slots so that these can align with completion of the pre-apprenticeship program.

● **Private Sector Firms that are Contractors or Subcontractors on Infrastructure Projects**

In addition to prioritizing inclusive hiring practices and advancing job quality (e.g., through wages, benefits, and strong safety standards), contractors can engage with public infrastructure agencies, the workforce development system, community-based organizations, and other entities in this list to broaden their recruitment and training offerings.

- Contractors could, for example, partner with local pre-apprenticeship programs or community-based groups to improve recruitment and training, especially for people that are underrepresented in the sector; or engage with state and local agencies on the planning for workforce needs for anticipated projects.

● **Regional and Local Infrastructure Agencies**

As infrastructure project owners that are receiving their own IJA funds, regional and local agencies can use similar strategies available to state agencies to advance workforce priorities: partnerships with the local workforce development system, direct spending on workforce development, and procurement practices focused on job quality and inclusion.

● **State Agencies that Provide Services to or Otherwise Interface with Jobseekers**

e.g., departments of Corrections and departments of Human Services

Agencies that serve populations likely to benefit from connections to quality jobs can be key partners in a state's infrastructure workforce strategy. State infrastructure agencies can partner with these agencies to develop pathways into infrastructure jobs.

- For example, a state department of transportation could work with the state corrections system to offer training and wraparound services to people returning from incarceration.
- An energy office could partner with an agency overseeing vocational rehabilitation services to identify ways the agency could intentionally include people with disabilities in state-related clean energy jobs.

● **Training Institutions** *e.g., community and technical colleges, K-12 education systems, and stakeholders elsewhere in this list that may serve in a training capacity*

These educational institutions provide workforce training and education programs. They can partner with local workforce development boards, employers and business groups, or other public agencies to align workforce training with industry needs.

- For example, a state community college system could develop training pathways specifically focused on in-demand clean energy careers.

● **Unions and Labor-Management Partnerships**

Unions represent the voice of workers, negotiate job terms and expectations, and enter into legally binding agreements with public and private entities. They are parties to Project Labor Agreements. Unions and labor-management partnerships also commonly offer trainings, often through apprenticeship programs, and have significant insight into recruitment and retention challenges within workforces touched by state spending in these areas. In terms of improving diversity within training paths, there is also evidence to suggest that union apprenticeship programs may be more effective at recruiting and retaining women and underrepresented racial groups to apprenticeship programs in construction trades.³⁹

● **Worker-Focused Organizations and Community-Based Organizations**

Worker-focused organizations—including civil rights groups, advocacy organizations, and tradeswomen's groups—advocate for worker interests in infrastructure sectors and have insight on barriers that prevent people from underrepresented demographic groups from succeeding in the sectors.

- Community-based organizations can similarly provide insight on local communities' priorities and barriers, and can be key partners in achieving targeted hiring standards.

Funding Opportunity

Leveraging IIJA and IRA Funding

A foundational step for state leaders in developing a plan of action is to understand opportunities in funding flowing to state transportation and energy offices that could be used toward workforce goals. IIJA and IRA do not contain new funds for state or local workforce agencies; as such, the focus in this report is on funds flowing to state transportation and energy offices.

This section highlights key provisions in IIJA and IRA that offer states opportunities in two categories of funding. Described in greater detail in [Appendix A: Funding Opportunities](#)

1. Funds to spend directly on workforce development:

Federal dollars where workforce development, education, or wraparound supports are eligible expenditures. This could be used by states to make specific, direct expenditures on workforce programming to augment existing activities and offerings for workers. These investments could build on programs that are currently supported by state funds, WIOA Title I, Perkins V, etc.

These dollars are directly relevant to actions identified in the Framework for Action's
[Second Set of Strategies: Augment Workforce Program Funding](#)

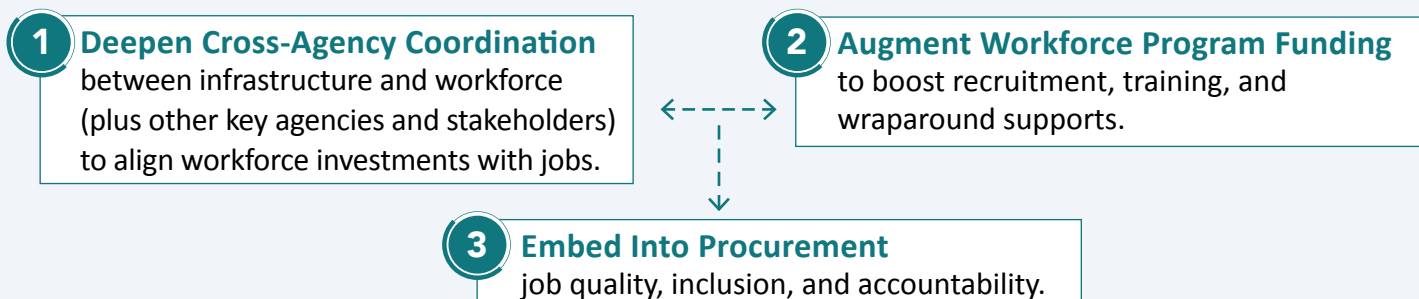
2. Funds where procurement can be leveraged for workforce priorities:

Federal funding flowing through states where states have an opportunity to embed job quality and inclusive workforce development practices into the terms of the competitive bidding process. This could be attached to infrastructure investments supported by formula, competitive, or other forms of federal funding.

These dollars are directly relevant to actions identified in the Framework for Action's
[Third Set of Strategies: Embed Into Procurement](#)

A Framework for State Action

Prioritizing Job Quality and Inclusive Workforce Practices in Infrastructure Implementation



Notable Transportation Funding Opportunities for Workforce

State departments of transportation have multiple funding opportunities in IIJA to bolster workforce development programming and activities, including about \$250 billion in formula funds with significant flexibilities as well as large amounts of funding flowing through state DOTs where state discretion could embed workforce priorities. Though IRA will spur new clean transportation jobs, it does not allocate funding specifically to state DOTs.

Opportunities to augment transportation workforce programs and services through direct expenditures

| [Second Set of Strategies: Augment Workforce Program Funding](#)

● Key Formula Funds

The largest opportunity for state departments of transportation to make direct expenditures in workforce development comes in the form of 504(e) formula funding. Under section 504(e) of the FAST Act, state DOTs have the flexibility to apportion federal funding from four core Federal Highway Administration (FHWA) programs to support workforce development activities (NHPP, STBG, HSIP, and CMAQ).⁴⁰

- Between 2022 and 2026, around \$250 billion in formula funding will be allocated to states under these four core programs, including boosted funding from IIJA.
- The scope of opportunity under 504(e) has been expanded under IIJA, insofar as more highway funding can be used toward workforce and the options for how to use those funds have been expanded.
- States can now use unlimited funds from these four core programs for workforce development, training, and education activities that support surface transportation without any state match.⁴¹
- In terms of new, broadened eligible workforce activities, IIJA specifies that states can now use 504(e) funds for pre-apprenticeships, apprenticeships, career opportunities for on-the-job training, and partnerships with industry, workforce development boards, and labor organizations.⁴²
- The Federal Highway Administration has since issued guidance allowing state DOTs to spend 504(e) funds on “supportive services programs in connection with workforce development,” including childcare and transportation for workforce program participants⁴³ as well as “participant support costs, such as stipends.”⁴⁴

● Key Competitive Funds

While IIJA did not authorize competitive transportation grants focused exclusively on workforce development, workforce priorities are elevated in some competitive funding opportunities available to states, local governments, and other entities.⁴⁵

- For example, under the Low or No Emission Vehicle Program, 0.5 percent of the funding is available for workforce development activities, and applicants proposing projects related to zero emission vehicles are required to use 5 percent of funding for preparing the workforce for the electric vehicle (EV) transition through apprenticeship and other training programs.⁴⁶
- The Consolidated Rail Infrastructure and Safety Improvements (CRISI) grant allows applicants to seek funding for training activities that will prepare workers for jobs in the rail sector.⁴⁷
- Finally, the \$1 billion Clean Heavy-Duty Vehicles program, implemented through the EPA, will offer grants and rebates for workforce development.⁴⁸

Opportunities to augment transportation workforce programs and services through direct expenditures *(continued)*

Another opportunity for direct expenditures is the **On-the-Job Training Support Services (OJT-SS) program**.⁴⁹

- This is an additional source of funding administered by FHWA for workforce programming targeted toward disadvantaged and minority populations, including women and underrepresented racial groups, for highway construction jobs.
- This program—totaling about \$50 million over the next five years—supports job placements, childcare, transportation to worksites, jobsite mentoring and other activities. State DOTs are typically familiar with this long-standing program.

Opportunities to prioritize job quality, inclusion, and accountability through general state transportation spending

| [SEE: Third Set of Strategies: Embed Into Procurement](#)

The aforementioned four core highway programs (about \$250 billion over five years) as well as other programs operated by state DOTs both offer an opportunity for states to incorporate strong job quality and inclusion standards into their highway spending.

States also have an opportunity to drive job quality and inclusion in their applications for IIJA competitive grants.⁵⁰

- Applicants for U.S. DOT discretionary grant programs are more recently asked to address job quality and workforce plans related to how the project will create good-paying jobs “with free and fair choice to join a union,” expand training and placement of various underrepresented demographic groups in good-paying jobs, and “promote the hiring and retention of underrepresented workers.”⁵¹

While there are numerous ways states can embed workforce and job quality broadly into their transportation spending, it is particularly relevant that IIJA newly allows the use of local and other geographic or economic hiring preferences on projects connected to funding from the U.S. Department of Transportation.⁵²



Notable Clean Energy Funding Opportunities for Workforce

IJJA invests nearly \$75 billion in the clean energy sector, including about \$21 billion for delivering clean power, \$8.6 billion for clean energy manufacturing and workforce development⁵³, and \$6.5 billion for energy efficiency and weatherization.

Meanwhile, IRA will invest approximately \$369 billion in U.S. energy modernization, with nearly \$9 billion flowing through state energy offices and \$270 billion distributed to consumers and corporations via tax credits.⁵⁴



Opportunities to augment clean energy workforce partnerships and programs through direct expenditures

| [SEE: Second Set of Strategies: Augment Workforce Program Funding](#)

● Key Formula Funds

Several provisions in IJJA provide funding opportunities for states to directly invest in new or expanded clean energy workforce partnerships and programs.

- IJJA directs additional funding for training through the Weatherization Assistance Program. Specifically, \$550 million of the \$3.5 billion in new funding for weatherization is dedicated for Training and Technical Assistance (T&TA), which can include “participation, travel, logistics of training and technical assistance, and events.”⁵⁵

IJJA also allocates specific funding to states for training programs.

- Notably, the Energy Auditor Training Program provides \$40 million in direct funding to states to cover “any cost associated with” energy audit training or certification during financial years 2022 to 2026.
- Up to 10% of grant funds can be used to pay wages to trainees during their training period, and states must include a strategy for connecting trainees to job opportunities after completing their training.⁵⁶

IRA also directs new funding toward state-based training programs.

- In particular, the State-Based Home Energy Efficiency Contractor Training Grants provide \$200 million to states to carry out training programs for contractors implementing home energy efficiency and electrification retrofits.⁵⁷
- While states should await further guidance from the U.S. Department of Energy (DOE) on eligible uses of funding, it is possible that state energy offices could use the funds to help provide wraparound services and other supports needed to help expand access to energy training programs and ensure successful training completion.

● Key Competitive Funds

There are several competitive funds with flexibility to support workforce investments.

States can apply for the Advancing Equity Through Workforce Partnerships grant program, which awards \$10 million to “support multi-stakeholder high-road workforce development partnerships” in the solar energy sector.⁵⁸

Additionally, IJJA allocates an additional \$150 million for Industrial Research and Assessment Centers (IRACs), which help determine the needs of manufacturer plant sites and identify ways to improve the sites’ energy efficiency and environmental performance.⁵⁹ A portion of this funding is available to support internships and apprenticeships that help implement the goals of the IRACs. Although state agencies are not eligible to apply for the IRAC funds directly, state energy offices and state workforce agencies can help build partnerships among and encourage applications from eligible entities, including educational institutions, community colleges, and union training programs.

Opportunities to prioritize job quality, inclusion, and accountability through general state clean energy spending

| [SEE: Third Set of Strategies: Embed Into Procurement](#)

While not at the scale of funds flowing to state DOTs, there are expanded funding opportunities for state energy offices that could be used toward strategies in this framework's third category of actions.

- State energy offices will be responsible for distributing about \$8.8 billion for the Home Energy Performance-Based Whole-House Rebates (HOMES) program and the High-Efficiency Electric Home Rebate Program established by IRA.
- These programs will create significant demand for clean energy jobs and provide an opportunity for state energy offices to incorporate workforce requirements and preferences when selecting contractors or program implementers to complete the work.⁶⁰
- Similarly, IIJA allocates about \$2.3 billion to states and tribes to enhance grid resilience (\$369 million to states and the District of Columbia in the first year of funding), which could provide state energy offices with an opportunity to evaluate potential contractors and sub-grantees based on job quality and workforce inclusion metrics.⁶¹
- IIJA also directs an additional \$500 million to the U.S. State Energy Program (SEP), a long-standing program that provides flexible, formula-based funding to state energy offices each year.⁶² While states will use this funding for a variety of purposes, state energy offices can consider adding workforce development and job quality standards or preferences into grant-making and solicitations that arise from the new SEP funds.

Key provisions within IIJA and IRA encourage applicants and funding recipients to enable more inclusive pathways to clean energy jobs and ensure the jobs created are of good quality.

- Within IIJA, several competitive grants require or incentivize Community Benefits Plans⁶³ and key workforce development criteria as part of the application process.⁶⁴
- For example, DOE requires a Community Benefits Plan as part of the application for the Regional Clean Hydrogen Hubs program.⁶⁵ DOE's emphasis on equitable workforce development and incorporation of workforce-related requirements into IIJA competitive grant applications provides an example of provisions that could be included in state-level solicitation and grant processes.

The tax credit provisions within IRA further support state efforts to support a well-paid and well-trained clean energy workforce.

- IRA offers bonus rate credits to clean energy projects that meet prevailing wage and apprenticeship requirements. While these credits do not contain incentives that would likely improve demographic representation in clean energy apprenticeships, they will increase demand for apprentices in the sector, leaving states with an important role to play in supporting inclusive paths to those apprenticeships.⁶⁶

Leveraging Existing Workforce Development System Funds

It is important to note that there are funding opportunities to support infrastructure workforce development (beyond the funding going to state infrastructure agencies) through existing workforce development-focused federal formula funds, including WIOA Title I funds such as Governor's Reserve Funds, Reserve and Leadership Funds as afforded under the Career and Technical Education for the 21st Century Act (Perkins V), and federal competitive grant programs, including the DOL Building Pathways to Infrastructure Jobs Grant Program.⁶⁷



Key Lessons

Markle-Eno-NASEO State Transportation and Clean Energy Workforce Initiative

In 2022, the Markle-Eno-NASEO initiative convened teams of state transportation or energy offices in six states with their counterparts in state workforce agencies in a series of facilitated discussions around how the agencies currently work together, as well as the priorities the agencies have for supporting the workforce needed to implement IIJA and IRA infrastructure and economic goals. The lessons from those discussions are summarized below and provide the foundation for the framework for state action in the following section of this report.

There is a significant opportunity to formalize partnerships and kick-start coordination between state infrastructure, workforce development, additional state agencies, and other critical stakeholders.

For state transportation and energy agencies, leveraging the existing workforce and education system in the state can help projects deliver on infrastructure goals, whether transportation projects, clean energy, or climate goals. For workforce development agencies, a partnership can establish clearer paths for jobseekers in the workforce system to relatively good-paying jobs, with potential for upward mobility and higher rates of unionization compared to the rest of the labor market. Infrastructure and workforce state agencies can do more to leverage each agencies' capacities—including with additional state agencies, such as departments of education, housing, human services, or corrections—to scale both demand and supply workforce strategies.

Despite the potential benefits of collaboration, most states in this initiative did not regularly coordinate on workforce development activities at the start of participation. Those that had already coordinated across agencies collaborated on an analysis of anticipated workforce needs or a competitive grant opportunity focused on expanding sector-specific training programs. Several agencies expressed an openness to explore structures to formalize or strengthen cross-agency partnership, such as working together to craft a job description for a workforce development-focused staff position housed within the infrastructure agency, or working toward solidifying mutual priorities in Memorandums of Understanding (MOUs).

Prioritization of workforce development and job quality in infrastructure implementation constitutes, in many cases, a significant shift from the status quo approach.

Infrastructure agencies' primary objectives tend to be boosting transportation access and safety or deploying clean energy, while getting projects completed with safety, timeline, and cost front and center. In this context, investing funding toward workforce development programming, shaping grants and procurement with job quality and workforce standards, or even focusing staff resources within an infrastructure agency on the coordination of workforce development investments is frequently seen as a secondary objective, rather than a critical component of project deployment.

While there are significant flexibilities in IIJA funds going to states that could be used for workforce development investments (as already discussed), it is not guaranteed that states will capitalize on that opportunity given that many decision-makers in key roles may be unaware or unconvinced of the range of activities that are eligible expenditures for formula funds related to IIJA. In the survey of state departments of transportation, most respondents (four out of five) stated they were not aware that IIJA lifts the cap on using funds from four core highway formula programs for workforce development and that the list of eligible workforce development-related expenditures has been significantly expanded.

Even if there is momentum to prioritize workforce in a state infrastructure agency's spending, there are commonly structural challenges to change course without senior leadership engagement, buy-in, and/or directives to do so. Centering job quality and workforce inclusion to the forefront would likely require a broad, multifaceted government shift in infrastructure project deployment. Governors' offices and agency leadership have an opportunity to accelerate this shift by encouraging job quality and workforce investments to be considered critical components of infrastructure implementation.

State infrastructure agencies are often interested in incorporating workforce inclusion and job quality standards into the terms of their spending, though doing so will involve an intentional shift and raise some complex questions.

In discussions with state agency staff, transportation and energy agencies were open to exploring the use of requirements and incentives to prioritize good quality jobs and spur more inclusive workforce practices in the contracted workforce. There are also relatively new federal incentives or encouragements for states to use these levers: the U.S. Department of Labor has encouraged agencies to use many of these policy levers on infrastructure projects,⁶⁸ and many federal competitive grant programs (as already discussed) encourage applications to specify how they plan to use several of these policy strategies.⁶⁹

However, our engagement with states, as well as broader research, suggests that critical transportation and energy agencies have likely not used the majority of these approaches before, and those that have used them have done so—in most but not all cases—as directed by state legislation. This initiative's survey of state energy offices further supported the finding that these agencies are often interested in most, if not all, of the Framework for State Action's proposed policy levers. Due to the unfamiliarity of using these levers, more guidance and technical assistance to states could help such agencies implement them.

Some state agencies have successfully used some of these policy levers without explicit directives from legislation. Key examples include the Colorado Department of Transportation's C70 project, a \$1 billion highway construction project, which included a local and economic hire component and the development of a training center for local residents,⁷⁰ and the New York State Energy Research and Development Authority (NYSERDA)'s 2022 offshore wind solicitation, which requires awardees to provide a plan for the negotiation of one or more PLAs "to cover all construction activities on the Project."⁷¹

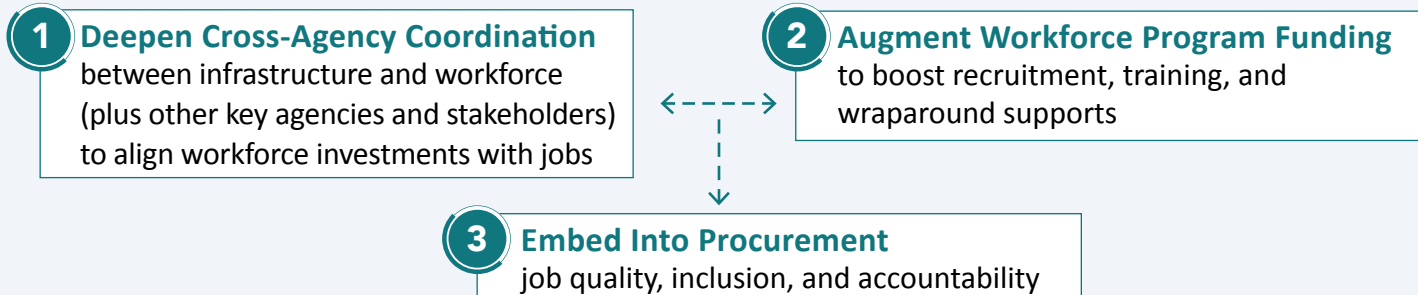
State leaders interested in embedding these policy levers into agency spending will encounter some constraints that will require them to explore new approaches. For example, IJA explicitly allows local and economic hire on construction projects funded through the U.S. DOT,⁷² but the law did not extend this flexibility to other areas of spending; in the federal Office of Management and Budget (OMB)'s Uniform Guidance, federal funds continue to be banned from using local or economic hire stipulations in certain forms.⁷³ Also in some contexts, infrastructure agencies are required to award contracts to the "lowest responsive and responsible bidder,"⁷⁴ which would affect the ways in which job quality and workforce development could be used as preferences in a competitive bidding process. For these reasons, agencies may consider adapting the terms used to target inclusion of economically disadvantaged or underrepresented populations to not be focused on geographic residency, but through the use of proxies. Agencies may choose to focus on the use of requirements, rather than preferences, in competitive bidding processes. More generally, agencies could start with piloting the use of a job quality or workforce requirement on a project or area of spending, as opposed to across numerous major programs.



Framework for State Action

A Framework for State Action

Prioritizing Job Quality and Inclusive Workforce Practices in Infrastructure Implementation



Critical State Actions to Prioritize Job Quality and Inclusive Workforce Development Practices in Infrastructure Implementation

CATEGORY	POTENTIAL ACTIONS
1 Deepen Cross-Agency Coordination Deepen coordination between infrastructure and workforce (plus other key agencies and stakeholders) to align workforce investments with jobs.	• Create a Memorandum of Understanding (MOU) to formalize cross-agency partnership • Create dedicated staff positions to facilitate cross-agency collaboration • Engage senior leaders in governors' offices and at the cabinet level in key agencies to help generate buy-in and/or directives to take action • Engage additional state systems, such as departments of education or departments of corrections, to reach jobseekers • Meaningfully engage critical non-state stakeholders from planning to execution Example: California's cross-agency collaboration to prepare people for jobs after incarceration, including jobs with the state's transportation department
2 Augment Workforce Program Funding Use direct expenditures and grants to boost workforce recruitment, training, and wraparound supports.	• Develop plans and conduct analyses that identify gaps and challenges to inform the priorities of state infrastructure workforce investments and targets • Scale high-quality training programs and create new programs • Fund supportive services to address common barriers to completing training • Bolster recruitment activities and raise awareness of career opportunities Example: Analyzing energy workforce needs and barriers in Pennsylvania Example: Providing paid training opportunities in infrastructure sectors through Indiana's Certified State Earn and Learn (SEAL) programs Example: Ohio's broadband workforce analysis Example: Diversifying the highway construction workforce through a focus on investing in supportive services for apprentices in Oregon

Critical State Actions to Prioritize Job Quality and Inclusive Workforce Development Practices in Infrastructure Implementation

CATEGORY POTENTIAL ACTIONS

3

Embed Into Procurement

Embed job quality, inclusion, and accountability throughout state spending on infrastructure.

- **Use vehicles to incorporate job quality and workforce inclusion priorities into projects:**
 - Project Labor Agreements or other similar agreements
 - Preferences for employers with strong workforce and job quality practices
- **Incorporate specific preferences or requirements to target priorities:**
 - Apprenticeship utilization requirements
 - Local, economic, or targeted hire provisions
 - Steps taken to address harmful worksite conduct
 - Incentives to partner with worker-serving stakeholders
 - Preferences or supports to improve opportunity for women- and minority-owned businesses in the procurement process
- **Understand and address factors that have been historically critical to success:**
 - Strong oversight and accountability models
 - Involvement of community-based groups, worker-serving organizations, employers, and other critical stakeholders
 - State legislation to support longer-term adoption of provisions in procurement

Example: Embedding local and economic hire in the Colorado Central 70 Project

Example: New Mexico's apprenticeship utilization requirements for electricity facility construction projects

Example: Virginia's offshore wind project preference for plans that hire workers from local and historically economically disadvantaged communities



● KEY CONCEPT **Pairing supply-side investments with demand-side levers to promote an inclusive infrastructure workforce**

It is common for states to direct resources toward supply-of-labor supports—such as training, recruitment, and career awareness-building—without simultaneously taking steps on the demand side to, through the power of their spending, foster meaningful entry points or employer incentives to hire and retain workers from those programs. Yet, states oversee both networks of training and recruitment as well as significant numbers of infrastructure jobs, through directly hiring state employees in these sectors and funding jobs through procurement involving the private sector.

With this context, states can consider prioritizing both supply and demand workforce strategies as they develop comprehensive plans to meet workforce needs and prioritize job quality with their infrastructure implementation.⁷⁶ This approach is related to all three categories of action presented in this report.

- As one example, on the supply side, states often provide funding for pre-apprenticeship programs—short-term training programs designed to introduce often-underrepresented demographic groups to careers in construction trades, manufacturing, and other industries, and most often to prepare candidates to navigate the process of entering a highly sought registered apprenticeship program.
- But when pre-apprenticeship program participants exit such a program, they may find that there are insufficient available apprenticeship slots in their communities or the timing may not align with entry into the apprenticeship programs.
- Those who do enter apprenticeship programs may struggle to find sufficient work hours to complete their apprenticeship, (e.g., after work on one project ends).

At the same time, state agencies fund a great deal of work in occupations that are already among the most commonly connected to registered apprenticeship, such as those in construction trades. In addition to providing funding for pre-apprenticeship programs (a supply side investment), state agencies could open doors for those program participants through a variety of levers.

- For example, an agency could embed apprenticeship utilization requirements into terms for their projects, incentivizing the creation of new apprenticeship slots and potentially reducing volatility in access to work hours for existing apprentices.
- They could also incentivize or require the creation of direct pathways from pre-apprenticeship into the trades by requiring contractors or grantees to submit plans for partnering with recognized pre-apprenticeship providers, which could include direct entry or sponsorship.
- Such a requirement is, for example, used in New York City’s 2020 Project Labor Agreement on new construction projects led by city agencies.⁷⁵

Framework for State Action

1 Deepen Cross-Agency Coordination

Partnership and collaboration between key infrastructure and workforce development agencies provides a logical foundation for states to realize many of the priority funding strategies that follow in the second and third sets of strategies in the Framework for Action; Augment Workforce Program Funding and Embed Into Procurement.

Priority actions that support cross-agency collaboration, especially between state transportation or energy agencies and their workforce counterparts, include:

- **Create a Memorandum of Understanding (MOU)** to formalize cross-agency partnership.
- **Create dedicated staff positions** to facilitate cross-agency collaboration.
- **Engage senior leaders** in governors' offices and at the cabinet level in key agencies to help generate buy-in and/or directives to take action.
- **Engage additional state systems**, such as departments of education or departments of corrections, to reach jobseekers.
- **Meaningfully engage critical non-state stakeholders** from planning to execution.

Priority Action

Create an MOU to formalize cross-agency partnership

An MOU can establish goals for a formal cross-agency partnership and designate the role of each agency in achieving those goals. A formal partnership can also signal to stakeholders across this area and to agency staff that the departments are committed to prioritizing job quality, inclusive workforce practices, and related issues that the MOU may designate.

An MOU can be more durable than informal cross-agency partnership, which can end with staff turnover. It can also help to avoid duplication of efforts.

Key Examples

- In 2020, the **California Workforce Development Board** and the state's **Public Utilities Commission** executed an MOU to "coordinate economic and workforce development planning, analysis, and implementation activities." The agreement outlines shared priorities, including regular information-sharing and the development of a near- and long-term framework for the sector's workforce development.⁷⁷
- In 2018, a partnership agreement was signed between the **California Workforce Development Board**, the **California Department of Corrections and Rehabilitation**, the **California Prison Industry Authority**, and the **California Workforce Association**. This agreement resulted in the California Prison to Employment Initiative, discussed in more detail on [page 27](#).⁷⁸
- The **U.S. Department of Labor (DOL)** has established MOUs with other federal agencies, which may serve as models for state-level agreements. The MOU between DOL and the **U.S. Department of Transportation** states the agencies' aims to, among other goals, "create more good-paying jobs in fair and safe workplaces" and "[c]reate a more diverse infrastructure workforce." The agreement lists specific areas where each individual agency will use their authority to advance the goals and areas where responsibility is jointly shared by both departments.⁷⁹ DOL also has a similar MOU with the **U.S. Department of Energy**.⁸⁰

Priority Action

Create dedicated staff positions to facilitate cross-agency collaboration

States can create designated, funded staff roles to focus on infrastructure workforce coordination and programming, housed within the governor's office or an infrastructure agency. Housing the staff in a governor's office could help set these actions as a priority for the administration's infrastructure implementation. Housing the role in an infrastructure agency has other advantages, allowing the staff to make the case for prioritizing inclusion and job quality throughout the agency's activities, as well as identifying opportunities to use agency funds for workforce development.

● Key Example

- The **Colorado Workforce Development Council** (CWDC) and **Colorado Rural Workforce Consortium** (CRWC) created a shared energy and industry consultant position that “works to connect Colorado’s energy employers with the State’s Career Pathways system, and to support community resilience through the creation of Sector Partnerships.”⁸¹

The position serves as a sector-specific liaison between state agencies (including CWDC, CRWC, and the Colorado Energy Office) and industry leaders in order to build partnerships, facilitate collaboration, and align strategy. This role is also tasked with coordinating relationships across state departments to share resources, coordinate strategies, and achieve common goals. Finally, the position assists stakeholders across the state’s workforce system and community college network in planning and coordinating activities that support energy sector businesses.⁸²

Priority Action

Engage senior leaders in governors’ offices and at the cabinet level in key agencies to help generate buy-in and/or directives to take action

Governors or cabinet-level agency leaders can establish inclusive workforce development and job quality as priorities for infrastructure workforce development by, for example, initiating cross-agency coordination or steps to formalize partnerships through MOUs. A shift in the operations and priorities of agency activities would likely benefit from an executive order, directives, or other forms of support from governors and cabinet-level agency leaders within a state.

Priority Action

Engage additional state systems, such as departments of education or departments of corrections, to reach jobseekers

There are numerous state-operated systems where there are opportunities to foster connections to infrastructure careers, (e.g., leveraging the capacities of departments of education, community college systems, departments of corrections, and other key infrastructure agencies dealing with shared challenges.

● Key Example

- In New York, the **New York State Energy Research and Development Authority** (NYSERDA) and the **New York State Department of Labor** (NYSDOL) work closely to offer the On-The-Job Training for Energy Efficiency and Clean Technology Program, which provides “wage subsidies to eligible businesses to help reduce the financial risk of hiring and training new workers.”

While the program is energy-focused and administered through NYSERDA, it leverages the unique strengths of NYSDOL, which “assists participating businesses with developing [on-the-job] training plans as well as assessing necessary skills and identifying available workers that match those skills.”⁸³

Spotlight

California's cross-agency collaboration to prepare people for jobs upon exiting incarceration, including jobs with the state's transportation department

The **California Prison to Employment Initiative** is a cross-agency collaboration that aims to expand access to employment for people who will soon exit incarceration. An impetus for this initiative was, in part, the California governor's priority to reduce recidivism across the state.⁸⁴

As noted in the discussion of MOUs, one facet of these efforts was establishing a partnership agreement between the California Workforce Development Board (CWDB), the California Department of Corrections and Rehabilitation (CDCR), the California Prison Industry Authority (CALPIA), and the California Workforce Association (CWA), signed in 2017.⁸⁵

The following year, the state directed \$37 million over three years to the partnership to provide people connected to the criminal legal system with direct services like interview coaching and industry-recognized skills training in the construction trades, as well as supportive services like stipends for transportation, clothing, and food.⁸⁶

The partnership required deep engagement between workforce and corrections leaders to leverage existing programming and insights of the workforce system with workforce training and services for people in and outside of incarceration facilities.

Since this partnership began, additional state agencies have leveraged the training programs in the incarceration facilities to make conditional offers of employment to trainees before they complete their periods of incarceration. For example, CalTrans, one of the state's transportation agencies, recently hosted hiring events in several California prisons that resulted in commitments to hire participants directly upon release.⁸⁷



Priority Action

Meaningfully engage critical non-state stakeholders from planning to execution

Stakeholders outside of state government, such as community-based organizations, employers, educational institutions, unions, and others have knowledge and resources that can shape the goals of a state partnership and support its implementation.

As one example, local tradeswomen's groups, which advocate for women in the trades and provide resources such as training, career education, and mentorship to tradeswomen, have deep expertise in the barriers that keep women out of infrastructure careers. They could provide valuable input to a comprehensive strategy led by a state department of transportation and state workforce agency on how to better support recruitment, retention, and mobility of women in transportation.

Employers could also inform the types of workforce preferences and requirements that are prioritized, in some cases acting in partnership with the infrastructure agency to achieve shared goals and inform the workforce investments that would help to make those goals a reality.

Framework for State Action

2 Augment Workforce Program Funding

State infrastructure and workforce agencies should consider opportunities to make direct expenditures on workforce development activities as one piece—but not all—of their available options to build broad and inclusive paths to join the infrastructure workforce (see Key Concept: Pairing supply-side investments with demand-side levers to promote an inclusive infrastructure workforce on [page 24](#)).

This category includes the following priority actions:

- **Develop plans and conduct analyses that identify gaps and challenges** to inform the priorities of state infrastructure workforce investments and targets.
- **Scale high-quality training programs** and create new programs.
- **Fund supportive services** to address common barriers to completing training.
- **Bolster recruitment activities** and raise awareness of career opportunities.

Priority Action

Develop plans and conduct analyses that identify gaps and challenges to inform the priorities of state infrastructure workforce investments and targets

There are a variety of analyses that state agencies could prioritize that would help target future investments and identify critical gaps in a state's existing offerings.

| [SEE: See Key Questions to Inform Workforce Investments and Targets \(page 29\)](#)

Though useful, such analyses should not be viewed as necessary before taking action on other priority investments, as some research questions can take years to answer. Given that many workforce needs related to carrying out major infrastructure projects will likely start up in 2023 and 2024, waiting for comprehensive analyses to be completed would cause agencies to miss an important window to kick-start training and recruitment necessary to achieve projects' goals.

While the process of identifying which areas to fill in gaps would benefit from cross-agency coordination, state workforce development agencies could also proactively identify where there are gaps in their state's workforce development services related to key infrastructure sectors. Workforce agencies could, for instance, proactively develop a list of priority approaches that they would like other agencies to consider supporting with their flexible incoming funds, even before beginning a dialogue with other agencies. These agencies may also already have developed a conception of a good quality job that the third set of strategies in this framework, Embed Into Procurement, could address.

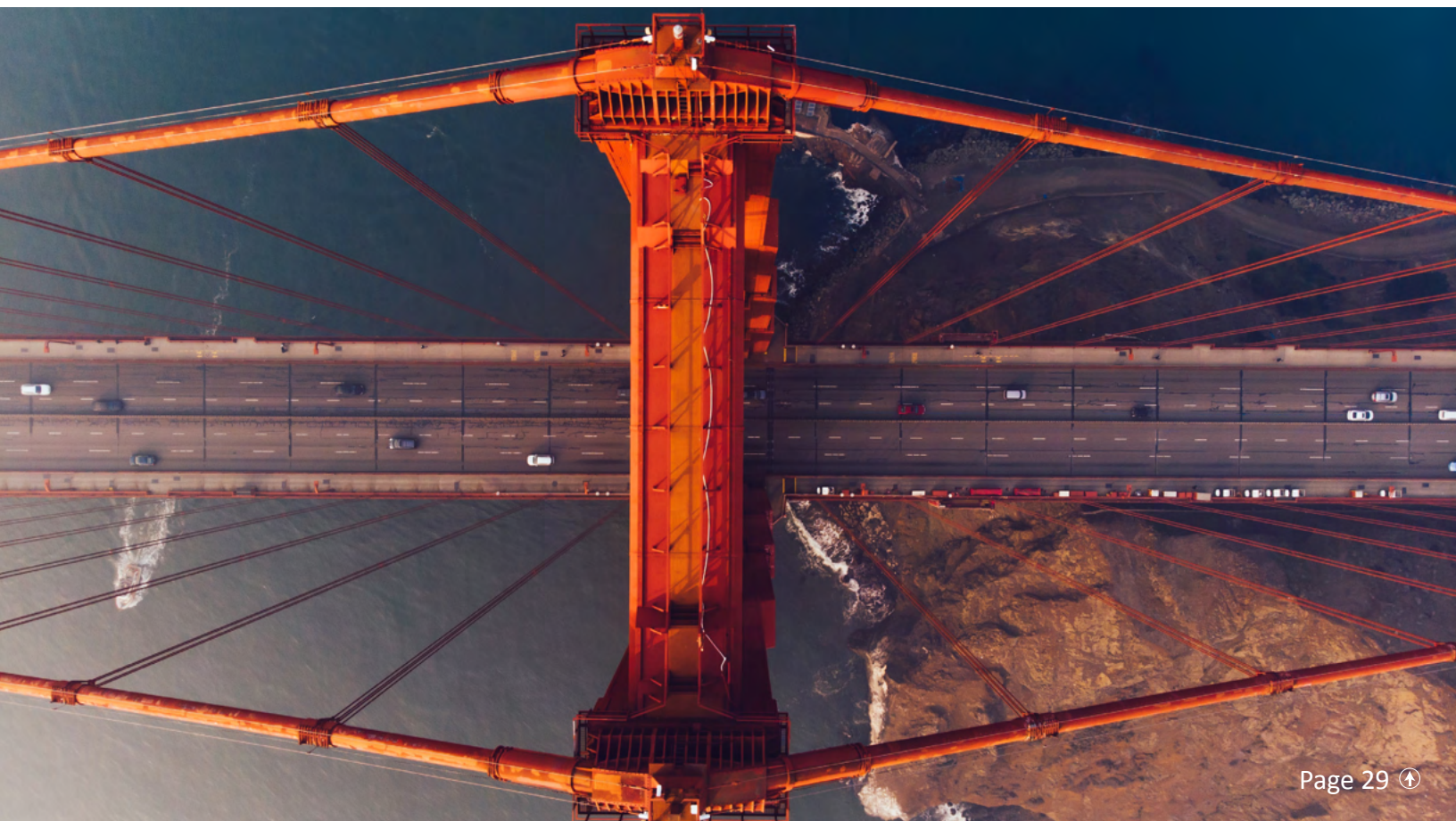
Key Examples

- The **Pennsylvania Department of Environmental Protection's** Energy Programs Office has released a series of analyses on the state's energy workforce landscape, including identifying common barriers to clean energy employment.⁸⁸ These analyses were conducted through coordination with the Pennsylvania Department of Labor & Industry.
- The **Ohio Governor's Office of Workforce Transformation** and **BroadbandOhio**, the state's broadband agency, commissioned a statewide broadband workforce analysis to "evaluate the broadband and 5G workforce, identify gaps in workforce supply, and propose strategies to mitigate these gaps."⁸⁹

Key Questions

To Inform Workforce Investments and Targets

- 1** **What are key skills and anticipated jobs in critical infrastructure sectors given the increased federal investment** (e.g., in transportation and clean energy, and the state's priority projects)?
- 2** **What are the pathways into and within transportation and clean energy**—for both recruitment of new workers and career growth within the sectors for current workers?
- 3** **What kind of replacement needs do the state's transportation and clean energy workforces have?** Where may turnover or recruitment pose challenges and how may that be related to job quality?
- 4** **How can hiring and recruitment for high-demand occupations source for skills found in adjacent jobs?** How can the state use that information to raise awareness of these opportunities, particularly reaching workers in low-wage jobs with relevant skills that may be overlooked in common infrastructure job descriptions?
- 5** **To what extent does the state's available high-quality workforce training programs meet the needs for jobs that are anticipated to grow?** To what extent are economically disadvantaged groups finding and completing relevant training programs? What are barriers to completing training programs, including registered apprenticeship programs?
- 6** **Where will major infrastructure projects take place in the state and to what extent are community stakeholders local to those projects engaged in project planning?** Which labor unions and worker-representing organizations could be engaged to recruit, train, and support workers to connect to anticipated jobs, and how could these groups be engaged in the infrastructure project development?



When identifying ways to bolster training, agency leaders should prioritize programs that have evidence of leading to good quality jobs, providing industry-valued credentials, and that have strong completion rates across demographic groups.

States should also prioritize programs that serve underrepresented populations (e.g., training programs geared toward people exiting incarceration, young people in the K-12 system, recruitment and training programs offered by institutions focused on serving underrepresented demographic groups such as Historically Black Colleges and Universities and pre-apprenticeship programs geared toward women, etc.).

States could accomplish this by funding pre-apprenticeship programs (coupled with other state incentives to improve outcomes for participants), programs and incentives to scale apprenticeship slots,⁹⁰ and sectoral training partnerships that create meaningful paths to in-demand, good quality jobs.

Key Examples

- The **Pennsylvania Department of Labor & Industry** (L&I) awarded \$2 million in grants to four Clean Energy Workforce Development projects across the state with the goal of expanding access to underserved communities, supporting economic recovery in the wake of the COVID-19 pandemic, and addressing employer recruitment and retention challenges in the industry.⁹¹
- The **New York State Energy Research and Development Authority's** clean energy workforce development programming has dedicated \$120 million to provide jobseekers and businesses with a variety of training opportunities. Awards are also determined via a scoring system that favors programs serving “priority populations” (including women, workers from disadvantaged communities, formerly incarcerated individuals, and others).⁹²
- The **Maine Governor's Energy Office** provided \$2.5 million to nine organizations to help meet the state's goal of reaching 30,000 clean energy jobs by 2030. The grants will support a learn-at-work program to recruit and place local students and residents in clean energy jobs, provide funding to remove training barriers for offshore wind apprentices, and expand an existing construction immersion program to prepare graduating students for Registered Apprenticeships—among other programs and initiatives.⁹³
- Indiana's Certified State Earn and Learn (SEAL) programs, led by the **Indiana Department of Workforce Development**, bring together employers, high schools, and postsecondary institutions to offer paid work-based learning experiences with postsecondary credit and industry certifications to both young people and adults through more than 130 SEAL programs throughout the state. The majority of the youth-focused SEAL programs are in key infrastructure subsectors, including advanced manufacturing, transportation and logistics, construction and business management, and IT. At least one of these programs is based on a partnership with the state's department of transportation.⁹⁴



Spotlight

Coupling supply of labor investments with demand levers by supporting pre-apprenticeship and incentivizing entry to the trades in Illinois

Touching \$45 billion of state public works investments, the Illinois Works Jobs Program Act establishes several programs and practices to bolster the state's infrastructure workforce and improve access to state-funded jobs for underrepresented populations.⁹⁵ These include:

- (1) Funding pre-apprenticeship:** The Illinois Works Construction Pre-apprenticeship Program funds community-based organizations to create or expand pre-apprenticeship programs, with flexible funds for supportive services (see Key Examples below).
- (2) Incentivizing apprenticeship:** The Illinois Works Apprenticeship Initiative sets an expectation that public projects worth greater than \$500,000 will employ apprentices for at least 10 percent of prevailing wage work hours, creating a demand for apprentices on many state projects.
- (3) Creating a bid credit program to incentivize hiring from programs focusing on underrepresented populations:** The Illinois Works Bid Credit Program will provide contractors and subcontractors with bid credits that can be used toward future public works bids if they employ and retain apprentices who have completed a recognized pre-apprenticeship program.

Priority Action

Fund supportive services to address common barriers to completing training

States could bolster funding for services to break down barriers that contribute to participants dropping out of programs. This could include creating a fund for training program participants, particularly in high-priority programs, to access vital supports for childcare expenses, transportation, emergency cash assistance, mentoring/peer networking, and career navigation.

Key Examples

- As part of the **Illinois Works Pre-apprenticeship Program** (highlighted in the Spotlight above), pre-apprenticeship program participants can access flexible funds for supportive services, which may be used for expenses such as apprenticeship application fees, transportation, childcare, technology, driver's education, mentorship, among others.⁹⁶
- The **Rhode Island Department of Labor and Training's Back to Work Program** partners with employers to help Rhode Island residents build skills in high-demand industries, including support services for participants such as childcare and transportation assistance. The state provided each participant with these supportive services at a cost of \$4,000 per participant, as well as access to a career navigator. The initiative saw a dropout rate of 36 percent less than programs without support services.⁹⁷



Spotlight

Diversifying the highway construction workforce through a focus on investing in supportive services for apprentices in Oregon

In 2009, the Oregon state legislature directed the Oregon Department of Transportation to “increase diversity in the highway construction workforce and prepare individuals interested in entering the highway construction workforce” using federal On-the-Job Training and Supportive Services funding.

The resulting Highway Construction Workforce Development Program, run as a partnership between the Oregon Department of Transportation and Oregon Bureau of Labor & Industries (the program administrator), is a notable example of a state allocating federal funds that flow through an infrastructure agency toward supportive services to improve inclusion and diversity in highway construction.

The program, which includes pre-apprenticeship classes, apprenticeship, and supportive services,⁹⁸ has seen evidence of success in improving apprenticeship retention and completion among women and people of color in highway construction trades.⁹⁹ The program has cost approximately \$5,000 per apprentice served since 2011. With federal On-the-Job Training Supportive Services funds, the state has invested in supportive services for apprentices, spending approximately \$850 per enrolled individual on supportive services such as transportation, childcare, and tools over a 10-year period. Additional details on supportive service costs for specific types of services are available in the following table.¹⁰⁰

Supportive Service Type for Apprenticeship Participants	Share of Enrolled Individuals Accessing Services	Cost to Provide Services
Transportation	23% (March 2011–August 2022)	~\$850 per participant accessing this type of service
Childcare	8% (March 2011–August 2022)	~\$4,550 per participant accessing services
Job readiness (work tools, work clothes, PPE)	67% (March 2011–August 2022)	~\$300 per participant accessing this type of service
Hardship assistance	9% (October 2016–August 2022) Note: Availability began in 2016	~\$850 per participant accessing this type of service

Priority Action

Bolster recruitment activities and raise awareness of career opportunities

States could fund efforts to build awareness of meaningful infrastructure career opportunities and pathways. This funding could prioritize partnerships with organizations (e.g., community-based organizations) that serve workers earning low wages and displaced jobseekers, especially organizations that work with and elevate solutions to improve inclusion of underrepresented populations. It could also focus on embedding vital information about career pathways within the career navigation services offered by a variety of stakeholders in the state.

Key Examples

- **Washington, D.C.’s Department of Employment Services (DOES)** launched an Infrastructure Academy, aimed to improve access to infrastructure careers. Through partnerships with public and private entities, the academy offers programs such as Quick Path to Information Technology, Quick Path to Energy, Quick Path to Transportation, and Quick Path to Health Safety to prepare residents for skilled jobs.¹⁰¹
- **The Colorado Workforce Development Council’s** Career Pathways Program offers “industry-driven, competency-based” pathways for 12 different industries, including energy, that are designed to help businesses meet demand for skilled workers while ensuring future employees have the skills and education needed.¹⁰² The resource guides users through an interactive digital pathway, while providing recommendations and additional resources based on jobseekers’ goals and interests.

Framework for State Action

3 Embed Into Procurement

As major project owners, state transportation and energy agencies have an opportunity to set terms and expectations in their procurement processes to influence practices among contractors and subcontractors.

Agencies can also encourage the use of their practices among other project owners in their sectors, and raise the use of this practice as a policy priority to be explored in areas of spending where they have limited direct control. There are myriad options for states to embed job quality and workforce inclusion into their procurement, and this discussion is not intended to be exhaustive.

Below are key strategies intended to help states actually implement this broad, yet commonly overlooked, approach. This category includes the following priority actions:

- **Use vehicles to incorporate job quality and workforce inclusion priorities into projects:**
 - Project labor agreements or other types of agreements
 - Preferences for employers with strong workforce and job quality practices
- **Incorporate specific preferences or requirements to target priorities:**
 - Apprenticeship utilization requirements
 - Local, economic, or other targeted hire requirements
 - Steps taken to address harmful worksite conduct
 - Incentives to partner with worker-serving stakeholders
- **Understand and address factors that have been historically critical to success:**
 - Strong oversight and accountability models
 - Involvement of community-based groups, worker-serving organizations, employers, and other critical stakeholders
 - State legislation to support longer-term adoption of provisions in procurement

Use vehicles to incorporate job quality and workforce inclusion into projects

Priority Action Project Labor Agreements or other types of agreements

These types of contracts include project labor agreements (PLAs), community workforce agreements (CWAs) and community benefit agreements (CBAs) with workforce terms.¹⁰³ Parties involved may include labor unions, employers, and/or community groups, and may include any of the policy levers discussed in this framework, such as apprenticeship utilization, local, economic or targeted hire provisions, or workplace safety measures.

USDOT has encouraged grantees to use project labor agreements (PLAs) on their projects in recent competitive grant Notice of Funding Opportunities (NOFOs) and, as previously mentioned, the U.S. DOE similarly has encouraged the use of CBAs.¹⁰⁴

At the same time, several states are banned or severely restricted, via state legislation, from using PLAs. In South Carolina, for example, the state government is prohibited from requiring PLAs in its contracting.¹⁰⁵ Other states regulate the content of PLAs: in California, for example, the state constitution preempts certain types of targeted hiring provisions,¹⁰⁶ and state statute regulates the content of PLAs.¹⁰⁷

● Key Examples

- **New York State Energy Research and Development Authority (NYSERDA)**’s 2022 offshore wind solicitation requires proposals to include “commitments to negotiate project labor agreements, labor peace agreements, and prevailing wages.”¹⁰⁸
- **Maryland’s Clean Energy Jobs Act** requires any approved offshore wind project use a CBA with five key guidelines, including promoting career training for and recruitment of local residents, women, and racial minorities.¹⁰⁹

Priority Action

Preferences for employers with strong workforce and job quality practices

A more generalized vehicle would simply be for a state agency to give preference to or require contractors to meet workforce or job quality requirements in order to be considered a competitive bidder for a contract. This could include any of the possible preferences or requirements that follow in the discussion on specific preferences or requirements to target priorities, having a history of compliance with safety regulations and labor law,¹¹⁰ or having other strong job quality characteristics.

● Key Examples

- **Connecticut** requires bidders on state-funded public works projects costing more than \$500,000—except highway or bridge projects administered by the state department of transportation—to complete a prequalification process). The process evaluates prospective bidders in five categories: integrity, work history, experience, financial condition, and record of legal compliance. Repeated safety violations disqualify potential bidders.¹¹¹
- In state law, **Minnesota** requires contractors and their subcontractors to meet minimum safety, wage law compliance, and employee classification compliance history criteria for public projects larger than \$50,000.¹¹²

Incorporate specific preferences or requirements to target priorities

Priority Action

Apprenticeship utilization requirements

Apprenticeship utilization requirements mandate a share of total work for contractors and subcontractors be performed by participants in registered apprenticeship programs.

When instituting apprenticeship utilization requirements, there are several factors to consider. First, are there sufficient apprenticeship programs in the area to meet these requirements and what kinds of supports could address gaps? Second, are there meaningful incentives to pair those apprenticeship slots with pre-apprenticeship programs, bolstering the opportunity for graduates of pre-apprenticeship to enter into highly sought registered apprenticeship?

● Key Examples

- **New Mexico’s Energy Transition Act** (2019) sets a minimum share of employees who are apprentices for electricity-generating facility construction projects, “subject to the availability of qualified applicants”: increasing from 10 percent for projects starting before 2024 to up to 25 percent for projects starting after 2025. It also directs the New Mexico Department of Workforce Solutions to set rules to encourage apprenticeship programs to diversify their student pools.¹¹³
- Since 2012, the **Los Angeles County Metropolitan Transportation Authority (LA Metro)** has required 20 percent of employee hours on their construction projects to be completed by apprentices, under a Project Labor Agreement with the region’s building trades.¹¹⁴

Local hire, economic hire, and targeted hire provisions include requirements or incentives that a certain share of total work for contractors and subcontractors be performed by workers meeting various criteria, such as residents of a particular geographic area, workers with low incomes, workers of certain demographic groups, or graduates of prioritized training programs, to name a few examples.

Within these provisions, states could include occupation-specific hiring and retention standards. One foundational standard that states could enforce could be around compliance with federal Executive Order 11246, which has long set a minimum share of work hours for women and “minority” workers among federal contractors and subcontractors in construction.¹¹⁵

These provisions create an incentive for all involved to prioritize recruitment and retention of jobseekers in the target population. As such, it would likely lead to contractors proactively partnering with community-based organizations that serve target populations.

As previously mentioned, OMB’s Uniform Guidance still bans federal funds, other than those stemming from the U.S. Department of Transportation, from incorporating local or economic hire stipulations in certain forms. However, there could be ways to target inclusion of economically disadvantaged populations on projects still under a local/economic hiring ban. For instance, prior to IIJA, regional agencies LA Metro¹¹⁶ and the San Diego Association of Governments (SANDAG)¹¹⁷ implemented economic hire policies that identified target ZIP codes across the nation (rather than locally) on projects with federal transportation funding.

Key Examples

- The **Virginia Clean Economy Act** requires utilities purchasing new offshore wind projects to submit a plan that includes “options for utilizing local workers” and “giving priority to the hiring, apprenticeship, and training of veterans, local workers, and workers from historically economically disadvantaged communities.”¹¹⁸
- **California’s Department of General Services** required that contractors negotiate a project labor agreement (PLA) with the state building trades for the construction of a set of new state office buildings in Sacramento, with key elements specified by the agency. The agreement set targeted hiring goals by requiring that 25 percent of apprentice-hours worked on the project would come from disadvantaged groups, including women, veterans, and people who have been involved in the foster system or the criminal justice system. The PLA also directs unions to collaborate with community-based organizations to ensure that these target populations and graduates of state pre-apprenticeship programs are hired.¹¹⁹
- The **Illinois Tollway’s** Earned Credit Program allows contractors to earn bid credits by employing members of WIOA-specified target populations, which can then be used to decrease a contractor’s bid amount, upping their chances of winning a contract as a low bidder. A similar program at the Tollway, ConstructionWorks, encourages contractors to employ participants from the Chicago Cook Workforce Partnership’s training partners. ConstructionWorks offers both bid credits and cash reimbursements to contractors for each hour worked by an apprentice from these training partners.¹²⁰



The **Colorado Department of Transportation's** interstate highway construction project, Central 70—the largest project CDOT had ever undertaken at \$1.2 billion—set a local hire requirement of hiring 20 percent of project employees from neighborhoods adjacent to the worksite.

Before breaking ground, the agency conducted over 300 public meetings engaging with concerns about the effects of the project on the local community, including workforce concerns. Alongside the local hire requirement, the department also set a goal to provide 200,000 training hours to employees in skilled crafts, creating a training center that offered skill-building courses for residents as part of the project.

A local foundation contributed funding for supportive services, including personal protective equipment (PPE), transportation, and childcare for trainees.¹²¹ The project was part of an FHWA pilot allowing states and localities to use local hire on federally funded highway construction projects, which IJA has now allowed for all spending flowing through USDOT.¹²²

States can spur employer practices to combat harassment and discrimination on infrastructure project worksites. Doing so, could lessen worksite hostility directed toward women, people who are not white, people with disabilities, and LGBTQI+ people, and other often marginalized populations, and thus contribute to improving inclusion in the sectors.

Despite federal law explicitly prohibiting discrimination in the workplace and in apprenticeship programs, workplace harassment remains an often-reported occurrence on construction jobsites, and a contributor to the high turnover rate for women in construction.¹²³ More than half of respondents to the Institute for Women's Policy Research's Tradeswomen's Retention and Advancement survey reported experiencing gender and sexual harassment either "sometimes" or "frequently/always" on construction jobsites. "Lack of respect/harassment" was also the most reported reason for women who had left or were considering leaving the trades.¹²⁴

Strategies to foster employer prioritization of combating harmful worksite conduct may include requiring that contractors and subcontractors complete anti-discrimination and anti-harassment training (contextualized in the industry) and ensuring there are reliable reporting structures and accountability mechanisms for harassment on project worksites. After reviewing the landscape of available programming, a committee of tradeswomen, workforce development leaders, and regional planning authorities in Oregon recommended Green Dot for the Trades and RISE Up as two strong anti-harassment training models in construction trades.¹²⁵ Additionally, an evaluation of the use of respectful worksite models on construction jobsites found that workers that received training from such a program were more likely to intervene in instances of harassment, and levels of harassment decreased (slightly) in one study.¹²⁶

Key Examples

- The **City of Seattle and Sound Transit**, the region's transit agency, among other infrastructure project owners in the Seattle area, have required that contractors complete a training through the RISE Up campaign on practices and internal policies to combat worksite bullying and harassment.¹²⁷
- In **Oregon**, property services contractors are required to complete an anti-sexual harassment training course to obtain a new license. Contractors must pass a test with a section on sexual harassment law, and all employees must complete anti-sexual harassment training upon hire and once every two years, with fines for violations.¹²⁸

States may require or incentivize contractors to form partnerships with organizations focused on providing services to or representing people from populations historically and presently underrepresented in good quality infrastructure jobs.

Possible strategies could include establishing bid incentives for contractors to hire from high-quality training programs serving underrepresented groups, or requiring that bidders make plans to form similar partnerships. Partners could include local workforce boards, community-based organizations, labor-management partnerships or unions, or pre-apprenticeship programs.¹²⁹

● Key Examples

- **New York City** established a PLA with the regional building trades council for new construction projects. Under the PLA, apprenticeship programs must set aside slots for graduates of pre-specified pre-apprenticeship programs targeting underrepresented populations.¹³⁰
- The **U.S. Department of Energy's Battery Materials Processing and Battery Manufacturing** grant program preferences investments that: “identify diversity workforce training partners to foster improved access to jobs for underrepresented individuals. . . such as those with disabilities.”¹³¹
- The **U.S. Department of Interior Abandoned Mines Lands** grant directs applicants to include plans “for engaging with other Federal, State, Tribal, or local governmental agencies and nongovernmental entities on workforce training and development issues... along with the names of potential partners to support recruiting and training efforts, including community colleges, workforce partners, community-based groups, and unions.”¹³²

States can encourage or require measures that broaden access and opportunities to benefit from state contracting opportunities for firms headed by women, business owners that are not white, and people of other underrepresented demographic groups. This is, indeed, often the current focus of state and other governmental actions to improve inclusion in the government procurement process.

The logic in using these levers is generally two-fold: expanding access to secure contracts broadens wealth-generating entrepreneurship opportunities; and firms led by members of underrepresented demographic groups may be more likely to hire and subcontract to members of underrepresented demographic groups or geographies. It is important to note that these provisions do not necessarily lead to connecting people of underrepresented demographic groups to a large number of jobs, as the focus is on the ownership of the firm.

Programs supporting disadvantaged business owners have faced legal challenges in several states, including a 2016 challenge to a program run by the Illinois Department of Transportation.¹³³ In part because of this history of litigation, agencies (in all states) must conduct disparity studies to prove programs’ necessity.¹³⁴ Even so, the vast majority of states have at least one program or office aimed at expanding access to state contracts to businesses with underrepresented owners.¹³⁵

● Key Examples

- **Maryland** set a goal that 29 percent of its procurement dollars be awarded to minority-owned businesses. For projects greater than \$3 million, agencies are expected to work with the state’s Minority Business Enterprise Program to set participation goals for specific minority groups and women on a contract-by-contract basis.¹³⁶

● Key Examples *(continued)*

- The **City of Buffalo, N.Y.**, used \$3.5 million in American Rescue Plan Act funds to provide support to small businesses through an existing local organization, the Beverly Gray Business Exchange Center, which provides underserved local businesses with financial and technical assistance.¹³⁷ The city also conducted a survey of vendors, informing future efforts to improve competitiveness of small and minority-owned businesses in the bidding processes.¹³⁸
- The **Illinois Tollway's** Technical Assistance Program supports firms competing for Tollway contracts. The program works with businesses that are; small, women-, minority-, or veteran-owned; or otherwise “disadvantaged” to provide mentorship and training in Tollway opportunities and businesses practices.¹³⁹

Spotlight

Tax credits for high-quality clean energy jobs in Washington State¹⁴⁰

In 2019, **Washington** passed the **Clean Energy Transformation Act**, which commits the state to transitioning its electric grid to 100 percent clean energy by 2045. The law uses state tax incentives to influence clean energy jobs, overseen by the state's Department of Labor & Industries:

- Projects that make a good faith effort to procure from women-, minority-, or veteran-owned businesses, high-road firms with a history of compliance with wage laws, and follow local hire preferred entry for residents of the project site: 50 percent tax credit
- Projects that also “compensate workers at prevailing wage rates determined by local collective bargaining”: 75 percent tax credit
- Projects that are developed under a project workforce agreement or community workforce agreement: 100 percent tax credit

Understand and address factors that have historically been critical to success

Priority Action

Strong oversight and accountability models

Adopting workforce goals by including preferences in RFPs, NOFOs, or other solicitations is only as effective as the follow-through. State efforts to drive workforce inclusion have faltered when enforcement is not prioritized. In Wisconsin, for example, the state's goal to spend 5 percent of its contracting to minority-owned businesses, declared in 1983, was not reached for the first time until almost 25 years later and had been met on an annual basis four times as of 2021.¹⁴¹ Massachusetts wrote workforce participation goals into its state law, but an audit showed insufficient monitoring and enforcement of those goals: 95 percent of active contracts did not meet the women's workforce participation goal, and 64 percent did not meet the minority workforce participation goal.¹⁴²

Advocates have pushed for a suite of strategies to bolster enforcement of workforce goals on publicly funded infrastructure projects, including community monitoring, sanctions for noncompliance, and deep engagement with contractors and subcontractors. Advocates have also pushed for stronger public data transparency of progress toward hiring and retention targets, including timely reporting of work hours by trade, project, and contractor, broken down by race, gender, and apprentice or journeyman status.¹⁴³

One model to consider is an “Access and Opportunity Committee,” used by several project owners in Massachusetts (see examples below). In this model, a committee of multiple stakeholders is formed, which could include stakeholders from business, labor, government, nonprofit, and advocacy groups. This committee is tasked with overseeing workforce inclusion measures attached to a project or set of projects. Contractors report workforce inclusion data to the committee, which meets periodically to review compliance and strategize on possible improvements. The committee also typically has the power to hold contractors accountable for meeting inclusion goals, through levers such as corrective action meetings and financial penalties.¹⁴⁴

● Key Examples

- The **Massachusetts Gaming Commission’s** Access and Opportunity Committee was established to monitor efforts to diversify the workforce for the construction of several large casinos in the state (notably, this is not an example concerning infrastructure). Contractors reported to the committee, which was empowered to hold corrective action meetings when contractors were not meeting diversity goals.¹⁴⁵
- The **University of Massachusetts Building Authority (UMBA)** entered into a Project Labor Agreement with the Metro Boston Building Trades Council and the New England Council of Carpenters in 2010. Among other requirements, the PLA committed UMBA to meeting city workforce participation goals for women and people of color in their work to reconstruct and renovate the UMass Boston campus. It also created an Access and Opportunity Committee to “assess the obstacles to success of achieving inclusion of minority and women workers... [and] make recommendations for additional programmatic efforts to overcome some of those obstacles.”¹⁴⁶

Spotlight

LA Metro’s contractor engagement and compliance strategy

The **Los Angeles Metropolitan Transportation Authority (LA Metro)** has developed a multilayered oversight system to ensure compliance with the workforce standards—including requirements for hiring local workers, disadvantaged workers, and apprentices—contained in its Project Labor Agreement with the building trades and its Construction Careers Policy.

Contractors commit to the workforce standards at every stage of the procurement, including the bid documents, the Notice of Award, and the contract documents. The standards are also emphasized in pre-bid, pre-proposal, and kick-off meetings, as well as monthly partnership meetings after the bid is secured. Contractors are required to hire one of LA Metro’s prequalified “Jobs Coordinators” to assist with meeting and documenting local hire requirements, or to propose their own jobs coordinator. An automated reporting system provides data on local hire attainment and wages on an ongoing basis.

LA Metro conducts a monthly audit of prime contractors’ performance on workforce hiring goals. Contractors that are not in compliance are subject to a set of escalating actions: first, a notice of non-compliance; second, a request for a corrective action plan; and third, a notice of possible liquidated damages. The damages consist of the average journeyman project wages for each hour the project fell short of the targeted hiring, or \$500 per day, whichever is greater. Since implementing the policy, LA Metro has only had to issue notices of possible liquidated damages on two occasions.

The agency has exceeded its hiring goals for local workers, disadvantaged workers, and apprentices.¹⁴⁷

Priority Action

Involvement of community-based groups, worker-serving organizations, employers, and other critical stakeholders

Stakeholders outside of state government are key partners when it comes to embedding job quality and inclusion standards into state spending. These stakeholders—including community-based groups, worker-serving organizations, employers, and others—can provide valuable input starting in the planning phase of infrastructure work. For instance, an infrastructure agency could not prioritize apprenticeship utilization without the involvement of employers, employer intermediaries, and pre-apprenticeship providers in the locality of the project to support the establishment of sufficient apprenticeship slots. As work progresses, the stakeholders can help state agencies succeed in their targeted hiring goals (for example, by aiding in recruitment or monitoring hiring and retention data).

State legislation to support longer-term adoption of provisions in procurement

Even while state transportation and energy office staffers commonly expressed interest in these strategies, a scan of existing examples of states embedding job quality and workforce inclusion provisions in infrastructure spending suggests that such provisions have usually been used in connection to specific state legislation, often attached to new clean energy spending.¹⁴⁸ State infrastructure leaders may find that explicit directives to support some of these provisions would be beneficial or help to avoid strong external pushback.

For example uses of the strategies presented in this category of actions:

[SEE: Appendix B: Embed into Infrastructure Procurement Examples](#)



Conclusion

Thanks to historic levels of investment through IIJA and IRA, states and communities across the United States have the chance to modernize their infrastructure, support their economic growth and competitiveness, and drive greater opportunity for workers without college degrees. However, deep and persistent disparities in the U.S. infrastructure workforce—including in the transportation and energy sectors, which have disproportionately low levels of representation of women, people who are not white, and younger workers¹⁴⁹—suggest that broad portions of the population may continue to miss out on the job creation and economic benefits of these investments if employers and policymakers continue to follow a business-as-usual approach.

Harnessing these investments to create meaningful, accessible, and inclusive career opportunities will require deliberate action and policy, program, and process changes on the part of state governments, which are poised to receive and shepherd billions of dollars in federal and state infrastructure investment in the coming years. In their roles overseeing or influencing project development and procurement; developing transportation, clean energy, climate, and pollution mitigation policies and programs; and convening stakeholders, these agencies are uniquely poised to integrate workforce and job quality priorities into their operations, spending, and public-private partnerships. As fellow state agencies, state workforce agencies can be critical partners in these efforts by helping align training and education systems with infrastructure workforce development needs and by serving as trusted sources of information for individuals navigating workforce development systems.

This report highlights several strategies that states should consider to support workforce access, inclusion, and job quality goals, as well as specific opportunities and provisions within the IIJA and IRA that can enable state investment and action.

It offers an array of recommendations, from lower-touch policy and program adjustments, analyses, and informal partnership models to larger-scale policy, program, and procurement changes that can help state agencies navigate the various aspects of job quality and inclusion in transportation and clean energy infrastructure.

Not only jobseekers—but also communities, employers, project owners, and state governments themselves—stand to benefit. The significant challenges the United States face—from climate change, to aging infrastructure, to deep economic and demographic disparities—require greater investments in and focus on workforce access, inclusion, and job quality. Armed with historic levels of funding, state transportation, energy, and workforce agencies can and will be important champions of these changes.



Appendix A: Funding Opportunities

Federal Funding Opportunities for Transportation Workforce Development

1. Opportunities for states to augment transportation workforce development through direct expenditures

Section No.	Grant or Program Name	Funding Amount
IIJA Section 13007	Fixing America's Surface Transportation (FAST) Act's Section 504(e)¹⁵⁰ Description: IIJA expanded flexibility for state DOTs to use unlimited amounts of the core funds apportioned under each of the four highway formula programs toward workforce development, training, and education activities. These activities are eligible for 100 percent federal share with no requirement of local matching funds. Funding can be used for surface transportation workforce activities "without regard to the focus of the core program that is the source of the funds," according to FHWA. IIJA also expands the scope of eligible activities by defining pre-apprenticeships, apprenticeships, career opportunities for on-the-job training, and partnerships with industry, workforce development boards, and labor organizations as eligible under workforce development. It also adds "activities to address workforce gaps, to develop robust workforce with new skills for emerging transportation technologies, and to attract new sources of job-creating investment" to the list of eligible workforce activities.	Unlimited share of four core FHWA formula funds totaling \$248 billion over five years¹⁵¹
IIJA Section 30018	Low and No Emission Grant Description: This funding can be used to prepare the workforce for the EV transition through apprenticeship and other labor-management training programs.	5 percent set-aside of \$5.6 billion total
IIJA Section 22103	Consolidated Rail Infrastructure and Safety Improvements (CRISI) Grant Description: Applicants for this grant program can access funding for workforce development and training activities in freight and passenger rail. The program also encourages applicants to hire, train, and retain a workforce that is local and diverse. Past projects funded under this grant included activities toward development of an HBCU-based railroad engineering program in Baltimore, M.D. and an Amtrak apprenticeship program for mechanical craft workforce development. ¹⁵²	\$5 billion total
IRA Section 60101	Clean Heavy-Duty Vehicles Description: Amends the Clean Air Act to support the transition to Clean Heavy-Duty Vehicles. Grants and rebates will be available from the EPA to cover up to 100 percent of the costs incurred in workforce development and training to support the maintenance, charging, fueling, and operation of zero-emission vehicles. States are one of several eligible recipients.	\$1 billion through 2031
Title 23 USC Section 140 (b)	On-the-Job Training Support Services (OJT-SS) program¹⁵³ Description: This program allows states to request funding for supportive services, including apprenticeship and on-the-job training programs for women, people of color, and other historically disadvantaged populations.	\$10 million annually

Federal Funding Opportunities for Transportation Workforce Development

2. Opportunities to prioritize job quality, inclusion, and accountability through general state transportation spending

Section No.	Grant or Program Name	Funding Amount
IIJA Section 25109	Geographic or economic hiring preferences¹⁵⁴ Description: This change creates an exception to the Office of Management Budget Uniform Guidance’s prohibition on geographic and economic hiring preferences, allowing project owners to use these preferences on projects funded through the U.S. DOT.	All projects funded through U.S. DOT are eligible
IIJA Sections 21201, 11110, and 11132	Multimodal project grants (MEGA, INFRA, and Rural Grants)¹⁵⁵ Description: The combined NOFO for the multimodal project grants encourages federally assisted contractors to work toward meeting the goal of 6.9 percent of construction project hours being performed by women. It also encourages local and economic hiring, PLAs, and registered apprenticeships.	\$15 billion total
IIJA Section 11401	Charging and Fueling Infrastructure Grants¹⁵⁶ Description: To access this grant, the applicants are directed to outline how they are planning on collaborating with infrastructure and technology providers, other states and local governments, fleet and fuel station providers, and labor unions to ensure that a properly trained workforce is available for constructing and installing electric/alternate fuel charging infrastructure.	\$2.5 billion total
IIJA Section 11509	Reconnecting Communities Pilot Grants—Capital Construction Project Grants¹⁵⁷ Description: Under this program, states and other eligible applicants must demonstrate how the grants will help create good-paying jobs with a free and fair choice to join a union; include anti-discrimination and anti-harassment plans; and use PLAs, local hiring, and procurement preferences to support underrepresented workers. The grant also requires contractors and subcontractors to pay prevailing wages to all workers and make a good faith effort to meet the goal of 6.9 percent of construction project hours being performed by women.	\$750 million total
IRA Section 60501	Neighborhood Access and Equity Grant Program—Investment in Economically Disadvantaged Communities Description: This program directs funding to the FHWA for investment in economically disadvantaged communities, including funding for applications that meet one of several criteria, including having “demonstrated a plan for employing local residents in the area impacted by the activity or project.”	\$1.3 billion through 2026

Note: IRA does not allocate funding to state DOTs specifically for workforce development activities. However, IRA does spur new clean transportation jobs by directing significant funding to clean transportation initiatives.

Funding Opportunities for Clean Energy Workforce Development

1. Opportunities for states to augment clean energy workforce development through direct expenditures

Section No.	Grant or Program Name	Funding Amount
IIJA Section 40551	Weatherization Assistance Program¹⁵⁸ Description: The Weatherization Assistance Program received an influx of new funding through IIJA, which will be distributed to State Weatherization Administrators through formula-based grants ¹⁵⁹ . Along with new IRA incentives for home energy efficiency and electrification retrofits, this additional weatherization funding will increase demand for contractors, auditors, and electricians. IIJA flow-down requirements, including the Davis-Bacon prevailing wage requirement, will apply to the additional WAP funding, as will several DOE priorities, including “workforce development and diversity [and] inclusion and equity.” Applicants must also submit a Training and Technical Assistance (T&TA) plan, and each state will receive a T&TA allocation “to support workforce development activities” (\$550 million total distributed across all states). Eligible uses of the T&TA allocation include: “participation, travel, logistics of training and technical assistance activities and events.”	\$3.5 billion (\$550 million for Training and Technical Assistance)
IIJA Section 40503	Energy Auditor Training Program Description: Direct funding to states to cover “any cost associated with” energy audit training or certification during financial years 2022 to 2026. Up to 10 percent of grant funds can be used to pay wages to trainees during their training period. As part of the application, states must include a plan for training curriculum and the certifications provided, as well as the cost per trainee and proposed strategy for connecting trainees to job opportunities.	\$40 million
IRA Section 50123	State-Based Home Energy Efficiency Contractor Training Grants Description: State energy offices will administer these funds, which can be used for training, education, and certification costs for contractors tasked with implementing the home energy efficiency and electrification upgrades, as well as state partnership programs with nonprofits.	\$200 million
IIJA Section 41007(c)(1)	Advancing Equity Through Workforce Partnerships¹⁶⁰ Description: Award funding will “support multi-stakeholder high-road workforce development partnerships that help accelerate the deployment of solar energy while advancing the Administration’s priorities around worker empowerment, quality jobs with a free and fair choice for workers to join a union, and Energy and Environmental Justice (EJ) and Diversity, Equity, Inclusion, and Accessibility (DEIA) in the clean energy workforce.”	\$10 million
IIJA Section 40521	Future of Industry Program and Industrial Research and Assessment Centers Description: Funding for institutions of higher education, trade schools, community colleges, and union training programs to create or expand Industrial Research and Assessment Centers (IRACs). These centers help assess the needs of small- and medium-sized manufacturer plant sites and identify ways to improve the sites’ energy efficiency and environmental performance, while promoting new technologies and coordinating research and development and technical assistance. A portion of the new IIJA funding for the IRAC program will provide 50 percent federal cost share for internships and apprenticeships that help implement the goals of the IRACs. While state energy offices will not receive Section 40521 funds directly, they can help encourage grant applications, facilitate partnerships, and support internship and apprenticeship programs receiving federal funds.	\$150 million

Funding Opportunities for Clean Energy Workforce Development

2. Opportunities to prioritize job quality, inclusion, and accountability through general state clean energy spending

Section No.	Grant or Program Name	Funding Amount
IRA Section 50121	Home Energy Performance-Based Whole-House Rebates (HOMES) program Description: State energy offices will be responsible for administering the Home Energy Performance-Based Whole-House Rebates (HOMES) program established by IRA, which will create significant demand for clean energy jobs and provide an opportunity for state energy offices to incorporate workforce requirements and preferences when selecting contractors or program implementers to complete the work.	\$4.3 billion
IRA Section 50122	High-Efficiency Electric Home Rebate Program Description: State energy offices will also be responsible for administering the High-Efficiency Electric Home Rebate Program, which will create significant demand for jobs needed for home electrification and provide opportunities to embed workforce requirements and preferences in contracting and solicitations.	\$4.3 billion
IIJA Section 40101(d)	Preventing Outages and Enhancing the Resilience of the Electric Grid¹⁶¹ Description: Provides grants to states and territories to enhance grid resilience, allocating \$369 million to states and the District of Columbia in the first year of funding. According to the Administrative and Legal Requirements Document (ALRD), recipients must include several workforce-related objectives and metrics in the Program Narrative, with a special emphasis on inclusion of underrepresented workers, community partnerships, and job quality metrics.	\$2.3 billion over five years
IIJA Section 40109	U.S. State Energy Program (SEP)¹⁶² Description: IIJA directs an additional \$500 million to the U.S. State Energy Program (SEP), a long-standing program that provides flexible, formula-based funds to state energy offices each year. This funding can be used for a number of energy-related activities at the state level, including training and education, such as “training workshops, practice manuals, and testing for each area of energy efficiency technology.” Additionally, because SEP is covered under the Justice40 Initiative, DOE strongly recommends that at least 40 percent of the funding benefits, which include access to clean energy jobs and training, reach disadvantaged communities. The application instructions also note that DOE will provide “analysis, resources, and peer exchange opportunities to advance investments in the clean energy workforce.”	\$500 million
IIJA Section 40541	Energy Improvements at Public School Facilities¹⁶³ Description: Provides \$500 million in grants for energy retrofits at public school facilities to local education agencies, in coordination with schools or other community partners, and designates up to 5 percent of awards for “operation and maintenance training” and up to 3 percent for “develop a continuing education curriculum relating to energy improvement.” In its Request for Information (RFI), DOE highlights the importance of local hire and working with labor union partners and urges applicants to plan how they will address recruitment, training, and retention of workers.	\$500 million

Funding Opportunities for Clean Energy Workforce Development

2. Opportunities to prioritize job quality, inclusion, and accountability through general state clean energy spending

Section No.	Grant or Program Name	Funding Amount
IIJA Section 40314	Regional Clean Hydrogen Hubs¹⁶⁴ Description: In the Funding Opportunity Announcement (FOA) for the Regional Clean Hydrogen Hubs program, which awards \$8 billion to six to ten recipients, DOE requires a Community Benefits Plan that includes “a statement describing any plans to negotiate a Community Benefits Agreement, Good Neighbor Agreement, Project Labor Agreement, Community Workforce Agreement, and/or other collective bargaining agreements.” The Community Benefits Plan must also include a “comprehensive plan for the creation and retention of high-paying quality jobs and development of a skilled workforce,” a Diversity Equity Inclusion and Accessibility plan, and a Justice40 section.	\$8 billion
IIJA Section 41007	Solar and Wind Grid Services and Reliability Demonstration¹⁶⁵ Description: Funding for projects that advance solar and wind technology research, development, and deployment. Eligible activities include workforce development, and state and local governmental entities were listed as eligible applicants. Applicants were required to include a Community Benefits Plan, covering three areas: community and labor engagement; quality jobs; and diversity, equity, inclusion, and accessibility.	\$26 million
IIJA Section 40513	Career Skills Training Program Description: The Career Skills Training grants are intended to help cover the cost of programs through which “students concurrently receive classroom instruction and on-the-job training for the purpose of obtaining an industry-related certification to install energy efficient buildings technologies.” Nonprofit partnerships are eligible to apply.	\$10 million
IIJA Section 40207	Battery Materials Processing and Battery Manufacturing and Recycling Grants Description: The FOA for the Battery Materials Processing and Battery Manufacturing and Recycling grants required applicants to submit an equity plan that addresses training and job quality. ¹⁶⁶	\$3.1 billion
IRA (multiple sections)	Bonus rate credit for meeting prevailing wage and apprenticeship requirements¹⁶⁷ Description: IRA provides a bonus rate credit for projects that meet prevailing wage and apprenticeship requirements. The prevailing wage requirement applies to contractors and subcontractors of projects greater than 1 megawatt of energy storage capacity and includes a non-compliance penalty of \$5,000 per worker paid below the prevailing wage rate. It also requires the contractors and subcontractors to pay those workers the wage difference owed, plus interest. The apprenticeship criteria for the bonus credit requires contractors and subcontractors to ensure a specified portion of labor hours is performed by qualified apprentices (5 percent for construction beginning in 2022, 10 percent in 2023, and 15 percent from 2024 on). Bonus tax credit recipients who do not comply will pay a \$500 fee per labor hour that did not meet the requirement. However, if the recipient makes a “good faith effort” to hire apprentices but cannot due to a lack of qualified apprentices, the project is exempt from the requirement.	Bonus rate of 30% compared to 6% base rate tax credit

Funding Opportunities for Clean Energy Workforce Development

2. Opportunities to prioritize job quality, inclusion, and accountability through general state clean energy spending

Section No.	Grant or Program Name	Funding Amount
IRA (multiple sections)	Credit increase for location in energy community or meeting domestic content requirements Description: Some of the tax provisions include a 10% increase or 10 percentage point increase for projects located in energy communities ¹⁶⁸ or projects that meet domestic content requirements. ¹⁶⁹ By encouraging clean energy projects in energy communities and projects that use materials and components manufactured in the United States, these credit adders could expand access to clean energy jobs in economically distressed areas and increase overall demand for domestic clean energy jobs.	10% increase or 10 percentage point increase in tax credit
IRA (multiple sections)	Direct pay and transferability options Description: Many of the IRA tax credits provide direct pay and transferability options, which allow non-taxable entities like state governments to leverage the financial benefits of the credits more easily.	N/A

● Workforce Development-Specific Federal Funds Awarded via Formula

States could consider using existing flexible funds specific to workforce development to strengthen pathways into infrastructure careers. These funding streams include:¹⁷⁰

- **WIOA Title I (Youth, Adult, Dislocated Worker):** Funding for career and training services, employer relationships, and sector partnerships; 15 percent of these funds are available as “Governor’s Reserve Funds” and can be spent at the governor’s discretion.
- **Perkins V:** Funding for secondary and postsecondary career and technical education. States can reserve up to 15 percent of their Perkins V formula funding for “Reserve Funds” for programming in high-demand occupations. Perkins “State Leadership Funds” are also available for developing sector partnerships and for supporting particular populations pursuing careers in high-demand occupations.

There are also competitive grant programs that state workforce and education entities could be eligible applicants for and could be pursued to support infrastructure workforce development investments, specifically DOL’s anticipated Building Pathways to Infrastructure Jobs Grant Program.¹⁷¹

Appendix B: Embed into Infrastructure Procurement Examples

Vehicles to incorporate job quality and inclusion into projects

PROJECT LABOR AGREEMENTS OR OTHER TYPES OF AGREEMENTS

Example	Infrastructure Type
New York State Energy Research and Development Authority (NYSERDA) 's 2022 offshore wind solicitation requires awardees to provide a “plan outlining its intentions with respect to the negotiation of one or more PLAs to cover all construction activities on the Project.” ¹⁷²	Clean energy
Maryland’s Clean Energy Jobs Act requires approved offshore wind projects use a CBA with five key guidelines, including promoting career training for and recruitment of local residents, women, and racial minorities. The Maryland Public Service commission is overseeing these requirements. ¹⁷³	Clean energy
Washington State’s Clean Energy Transformation Act exempts most renewable energy projects from sales taxes if the state certifies that “the project is developed under a community workforce agreement or project labor agreement.” ¹⁷⁴	Clean energy
Massachusetts’s Expanded Gaming Act directed the gaming industry to establish the Access and Opportunity Committee to monitor efforts to diversify the construction workforce during the construction of several large casinos. ¹⁷⁵ Note: This example is not a public agency and not within infrastructure, but a notable example.	N/A
The University of Massachusetts Building Authority (UMBA) entered into a Project Labor Agreement with the Metro Boston Building Trades Council and the New England Council of Carpenters in 2010. Among other requirements, the PLA committed UMBA to meeting city workforce participation goals for women and people of color in their work to reconstruct and renovate the UMass Boston campus. It also created an Access and Opportunity Committee to “assess the obstacles to success of achieving inclusion of minority and women workers... [and] make recommendations for additional programmatic efforts to overcome some of those obstacles.” ¹⁷⁶	Public university campus
Section 1-75(c)(1)(Q)(2) of Illinois’s Climate and Equitable Jobs Act requires a Project Labor Agreement for all new utility-scale solar and wind, brownfield site photovoltaic (PV), and renewable energy credit (REC) facilities. The requirement is implemented by the Illinois Power Agency. ¹⁷⁷	Clean energy
Section 1(a)(2) of Connecticut’s 2019 Offshore Wind Procurement Act requires “selected bidders to engage in a good faith negotiation of a project labor agreement,” overseen by the Connecticut Department of Energy and Environmental Protection. ¹⁷⁸	Clean energy

PREFERENCES FOR EMPLOYERS WITH STRONG WORKFORCE AND JOB QUALITY PRACTICES

Example	Infrastructure Type
Washington State's Clean Energy Transformation Act includes a 50% tax exemption incentive for clean energy projects that procure from or make a good faith effort to procure from "entities that have a history of complying with federal and state wage and hour laws and regulations," among other requirements (Sec. 18). ¹⁷⁹	Clean energy
Connecticut requires bidders on state and local public works projects costing more than \$500,000 to complete a prequalification process through the Department of Administrative Services (projects administered by the state DOT are exempt). The process evaluates prospective bidders in five categories: integrity, work history, experience, financial condition, and safety. Repeated safety violations disqualify potential bidders. ¹⁸⁰	Public works (does not apply to DOT projects)
Minnesota requires contractors and their subcontractors to meet minimum safety, wage law compliance, and employee classification compliance history criteria for public projects larger than \$50,000. ¹⁸¹	Public works
Orlando, Florida , requires contractors who bid on projects costing more than \$100,000 with service in certain industries to provide workers with health benefits, as well as to pay a "living wage," overseen by the city's Public Works Department. ¹⁸²	Public works
El Paso, Texas , has used preferences for bidders that provide their employees with health benefits; at one point this criterion composed 10% of the bidder's overall score (p.15). ¹⁸³	Public works

Types of preferences or requirements in contracting and procurement to target priorities

APPRENTICESHIP UTILIZATION REQUIREMENTS

Example	Infrastructure Type
Washington State mandates that large public projects—those exceeding \$1 million for most public works projects and \$2 million for Department of Transportation projects—must use registered apprenticeships for a minimum of 15% of work hours. A 2019 clean energy bill also allows utilities to access a 50% tax exemption if they demonstrate a "good faith effort" to meet an apprenticeship utilization standard. ¹⁸⁴	Public works, clean energy
New Mexico's Energy Transition Act (2019) sets a minimum share of employees who are apprentices for electricity-generating facility construction projects, "subject to the availability of qualified applicants," increasing from 10% for projects starting before 2024 to up to 25% for projects starting after 2026. It also directs the New Mexico Department of Workforce Solutions to set rules encouraging apprenticeship programs to diversify their student pools. ¹⁸⁵	Clean energy
Maine's Green New Deal Act requires that in the construction of new energy-generation facilities, apprentices must compose at least 10% of the construction workforce through 2024, increasing to 17.5% through 2026 and 25% starting in 2027. The requirements are overseen by the Maine Department of Labor. ¹⁸⁶	Clean energy
Since 2012, the LA County Metropolitan Transportation Authority has required 20% of employee hours on their construction projects to be completed by apprentices, under a Project Labor Agreement with the region's building trades. ¹⁸⁷	Transportation
Salt Lake County, Utah , requires that projects larger than \$3 million use apprentices for 10% of labor hours. The county also fines contractors by the hour for failure to meet the minimum. ¹⁸⁸	Public works

LOCAL HIRE, ECONOMIC, OR OTHER TARGETED HIRE REQUIREMENTS

Example	Infrastructure Type
The Colorado Department of Transportation's interstate highway construction project, Central 70, set a goal of hiring 20% of project employees from neighborhoods adjacent to the worksite. The department created a training center that offered skill-building courses for residents as part of the project. This project—the largest that CDOT had ever undertaken—was part of an FHWA pilot allowing states and localities to use local hire on federally funded projects, which U.S. DOT now allows for IIJA highway formula funds. ¹⁸⁹	Transportation
The Texas Department of Transportation participated in the FHWA local hire pilot, requiring 15% of contracted labor hours in its S.M. Wright highway construction project to be performed by local workers. ¹⁹⁰	Transportation
The Minnesota Department of Transportation used targeted hiring incentives on several Hennepin County projects as part of the FHWA local hire pilot, with contractors receiving \$5 for every hour worked by targeted populations—residents of high-unemployment neighborhoods, residents of high-poverty neighborhoods, and veterans. ¹⁹¹	Transportation
The Virginia Clean Economy Act outlines new offshore wind projects, requiring utilities to submit a plan for “options for utilizing local workers,” and “giving priority to the hiring, apprenticeship, and training of veterans, ... local workers, and workers from historically economically disadvantaged communities.” The Virginia State Corporation Commission oversees the requirements. ¹⁹²	Clean energy
Washington State's Clean Energy Transformation Act includes a 50% tax exemption incentive for clean energy projects to procure that include or make a good faith effort to include “preferred entry for workers living in the area where the project is being constructed,” among other requirements (Sec. 18). ¹⁹³	Clean energy
The Sports and Exhibition Authority of Pittsburgh and Allegheny County participated in the FHWA local hiring pilot for the reconstruction of a Pittsburgh intersection, setting a goal that 20% of project hours worked by Pennsylvania residents on the project would be completed by residents of neighborhoods close to the project site. ¹⁹⁴	Transportation
California's Department of General Services required that contractors negotiate a project labor agreement (PLA) for the construction of a set of new state office buildings in Sacramento. The agreement set targeted hiring goals by requiring that 25% of apprentice-hours worked on the project would come from disadvantaged groups, including women, veterans, and people who have been involved in the foster system or the criminal justice system. The PLA also directs unions to collaborate with community-based organizations to ensure that these target populations and graduates of state pre-apprenticeship programs are hired. The PLA was developed with support from the California Workforce Development Board (CWDB). ¹⁹⁵	State office construction

LOCAL HIRE, ECONOMIC, OR OTHER TARGETED HIRE REQUIREMENTS *(continued)*

Example	Infrastructure Type
California’s Department of Toxic Substances Control negotiated a community workforce agreement (CWA) for a hazardous waste cleanup program in Los Angeles. A training program called the Workforce for Environmental Restoration in Communities was developed to support the local hiring requirements. The CWA was developed with support from the California Workforce Development Board (CWDB). The agreement set targeting hiring goals for several populations: – Community residents (20%): Workers who reside near the project site – Local residents (30%): Workers who reside in low-income ZIP codes within 10 miles of the project site – Transitional workers (25%): Workers in several categories, including being a veteran, a single parent, or a former foster youth, currently or recently experiencing homelessness, lacking a high school diploma, and having a history of involvement with the criminal justice system¹⁹⁶	Hazardous waste cleanup
In Massachusetts, state law requires all state contracts “for design, construction, reconstruction, installation, demolition, maintenance or repair” to “set forth the participation goals of minority and women workers to be employed on each such contract and the processes and procedures to ensure compliance with those workforce participation goals, including reporting and enforcement provisions.” The state’s goal for construction workforce participation for women is set at 6.9% and for minorities at 15.3%; enforcement of the law has been challenging.¹⁹⁷	Public works
The Illinois Tollway Earned Credit Program allows contractors to earn bid credits by employing members of WIOA-specified target populations, which can then be used to decrease a contractor’s bid amount, upping their chances of winning a contract as a low bidder. A similar program at the Tollway, ConstructionWorks, encourages contractors to employ participants from the Chicago Cook Workforce Partnership’s training partners. ConstructionWorks offers both bid credits and cash reimbursements to contractors for each hour worked by an apprentice from these training partners.¹⁹⁸	Transportation
The San Diego Association of Governments (SANDAG), the San Diego area’s regional planning and transit agency, signed a Community Benefits Agreement in 2021 for work under its regional plan. The CBA requires that unions and contractors work towards a goal of employing 30% disadvantaged workers (residing in a ZIP code where the average income is less than 80% AMI, or workers who live in the project area when funding sources allow) and 10% targeted workers (including veterans, single parents, former foster youth, people currently or recently experiencing homelessness, or lacking a high school diploma).¹⁹⁹	Transportation
Seattle, Washington’s Priority Hire Program through the Seattle Department of Facilities and Administrative Services sets a goal for the share of labor hours on large-scale public projects performed by “Priority Workers” from ZIP codes designated as “economically distressed” in King County. It also sets goals for the share of apprentices who are based in those ZIP codes. The County has several tools to enforce Priority Hire, including delayed payment and debarment for contractors who do not comply.²⁰⁰	Public works

LOCAL HIRE, ECONOMIC, OR OTHER TARGETED HIRE REQUIREMENTS *(continued)*

Example	Infrastructure Type
LA Metro County Transportation Authority has a Project Labor Agreement with the building trades that sets hiring goals for residents of economically disadvantaged areas (40%), disadvantaged workers (10%), and apprentices (20%). ²⁰¹	Transportation
Baltimore's Local Hiring Law governs city-awarded contracts over \$300,000 and city-subsidized projects over \$5 million. Under the law, a majority of all new hires must be Baltimore residents, and employers must work with staff from the Mayor's Office of Economic Development on recruitment strategy. ²⁰²	Public works
San Francisco's local hire ordinance requires a minimum of 30% of hours worked within each trade on public construction projects to be by San Francisco residents, and 15% of hours worked to be by disadvantaged workers. Among apprentice-hours worked on public projects, at least 50% within each trade must be by San Francisco residents, and 25% must be by disadvantaged workers. Disadvantaged workers are defined as residents of high-unemployment census tracts, residents with income below 80% AMI, or members of other disadvantaged groups: "being homeless; being a custodial single parent; receiving public assistance; lacking a GED or high school diploma; participating in a vocational English as a second language program; or having a criminal record or other involvement with the criminal justice system." When contractors or subcontractors can prove that it is not possible to meet these requirements, they must sponsor new apprentices to avoid penalties (the number of apprentices is specified by the city's Office of Economic and Workforce Development). ²⁰³	Public works
In the Program Opportunity Notice (PON) for the Merrimack Valley Building Excellence Grant Program , Massachusetts included several requirements and preferences to ensure communities impacted by the 2018 gas explosions receive high-quality and culturally competent energy. The PON requires contractors applying for \$500,000 or more to include local workforce development commitments in their proposals, such as "utilization/hiring of local subcontractors, vendors or individuals from Lawrence, Andover, or North Andover; partnerships with or providing funding to local educational institutions or community programs for energy efficiency or clean energy workforce training programs; and the training of local residents or businesses to conduct the work included in the proposal." ²⁰⁴	Clean energy

STEPS TAKEN TO ADDRESS HARMFUL WORKSITE CONDUCT

Example	Infrastructure Type
In Oregon , property services contractors who perform or manage employees who perform janitorial services are required to complete an anti-sexual harassment training course to obtain a new license or renew a license, a process implemented by the state's Bureau of Labor & Industries. Contractors must pass a test with a section on sexual harassment law, and all employees must complete anti-sexual harassment training upon hire and once every two years, with fines for violations. ²⁰⁵	Property services
In California , agricultural labor contractors must complete anti-sexual harassment training in order to obtain a new license or renew a license, and employees must periodically complete anti-harassment trainings. The California Division of Labor Standards Enforcement implements these requirements. ²⁰⁶	Agriculture and property services

STEPS TAKEN TO ADDRESS HARMFUL WORKSITE CONDUCT^(continued)

Example	Infrastructure Type
The City of Seattle and Sound Transit , the region's transit agency, among other infrastructure project owners in the Seattle area, have required that contractors complete a training through the RISE Up campaign on practices and internal policies to combat worksite bullying and harassment. ²⁰⁷	Public works; transportation
While not a procurement requirement or preference, Oregon Metro , the Portland-area planning commission, created a framework for the construction industry that encourages project owners to require bystander intervention training for their contractors. Metro has also convened a stakeholder group (the Regional Collaborative Committee) to conduct ongoing efforts to address worker challenges in the construction industry. ²⁰⁸	Public works

INCENTIVES TO PARTNER WITH WORKER-SERVING STAKEHOLDERS

Example	Infrastructure Type
The California Road Repair and Accountability Act of 2017 directed the California Workforce Development Board to “develop guidelines for public agencies receiving Road Maintenance and Rehabilitation Account funds to participate in, invest in, or partner with, new or existing pre-apprenticeship training programs.” It also created a grant to boost pre-apprenticeship in the state. ²⁰⁹	Public works
As part of a package of workforce legislation to support state investments in infrastructure, Illinois is implementing a bid credit program through its Department of Commerce & Economic Opportunity. The program will allow contractors to accrue bid credits by employing apprentices who have completed the state's pre-apprenticeship curriculum and to use those credits in future bids. ²¹⁰	Public works

PREFERENCES OR SUPPORTS TO IMPROVE OPPORTUNITY FOR WOMEN- AND MINORITY-OWNED BUSINESSES IN THE PROCUREMENT PROCESS

Example	Infrastructure Type
Connecticut's Department of Energy & Environmental Protection (DEEP) issued an RFP for a Program Operator for its Weatherization Barrier Remediation program, which evaluated bidders based on several cultural competency criteria, including policies that require or give preference to women- or minority-owned contractors. ²¹¹	Clean energy
Illinois has set a goal to spend 20% of its total dollars with firms that have been certified through the Illinois Commission on Equity and Inclusion's Business Enterprise Program, which includes businesses owned by women, minorities, and people with disabilities. The program was initiated by the state's Business Enterprise for Minorities, Females, and Persons with Disabilities Act. ²¹²	All public spending
Maryland sets an overall goal that 29% of its procurement dollars be spent at minority-owned businesses. Agencies are expected to work with the Governor's Office of Small, Minority & Women Business Affairs' Minority Business Enterprise Program to set participation goals for specific minority groups and women on a contract-by-contract basis. ²¹³	70 participating state agencies

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- 2 Government Finance Officers Association, "[Infrastructure Investment and Jobs Act \(IIJA\) Implementation Resources](#)," 2022; McKinsey & Company, "[What's in the Inflation Reduction Act \(IRA\) of 2022](#)," 24 Oct. 2022.
- 3 This piece considers a good quality job to be one that offers essential economic security in the form of family-sustaining wages and benefits, workplace safety and respect, and mobility potential. For additional factors that could be considered to constitute a good quality job, see the [eight job quality principles](#) developed by the U.S. Department of Labor and Department of Commerce, or the job quality [framework](#) developed by the Aspen Institute's Economic Opportunities Program.
- 4 For an aggregation of different estimates for anticipated job demand connected to federal infrastructure spending and estimates of the current size of the infrastructure workforce broadly, see: Kane, Joseph, "[Seizing the U.S. infrastructure opportunity: Investing in current and future workers](#)," Brookings, Dec. 2022.
- 5 Carnevale, Anthony, and Nicole Smith, "[15 Million Infrastructure Jobs: An Economic Shot in the Arm to the COVID-19 Recession](#)," Georgetown Center on Education and the Workforce, 2021; Kane, Joseph, "[Seizing the U.S. infrastructure opportunity: Investing in current and future workers](#)," Brookings, Dec. 2022.
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- 11 Infrastructure investments cover a wide range of projects, activities, and sectors, and they implicate a wide array of stakeholders. The core focus of this report is on the role of state governments in infrastructure and workforce development in the transportation and clean energy sectors. For convenience, we refer to state transportation and energy agencies as "infrastructure agencies." As elaborated further in the "Critical Stakeholders and Key Roles" discussion, these agencies undertake a variety of roles at the state level, which include infrastructure spending and development as well as policymaking, program design, and stakeholder engagement activities that support the deployment of transportation and clean energy solutions and technologies. Infrastructure is a collection of sectors, such as telecommunications, water, green infrastructure and climate resiliency, or public works. There are also additional state agencies that oversee and influence funds in transportation and clean energy, as well as additional state agencies that oversee physical infrastructure.
- 12 Between 2022 and 2026, around \$250 billion in formula funding will be allocated to states under the four core transportation programs (the National Highway Performance Program; Surface Transportation Block Grant Program; Highway Safety Improvement Program; Congestion Mitigation and Air Quality Improvement Program). For guidance on use of the funding toward workforce development, see: Center for Transportation Workforce Development, "[Guidance for Use of Federal-aid State Core Program Funds for Training, Education, and Workforce Development, Title 23, United States Code, Section 504 \(e\)](#)."
- 13 In this report, the term "state workforce agencies" is inclusive of state workforce development boards and their staff—which oversee a network of activities with local workforce development boards to coordinate workforce investments in economic regions—as well as workforce and labor agencies involved in delivering labor market information, employer services, training grants, and career navigation and business services. They also often oversee apprenticeship programs.
- 14 While not expanded under IIJA or IRA, there are also flexible funding opportunities that states could use for infrastructure workforce development in federal workforce-related formula funds, such as WIOA Title I funds or Perkins V funding. See: Appendix A: Funding Opportunities.
- 15 Wisconsin did not participate in the full initiative but nonetheless informed the report.
- 16 Kane, Joseph, "[Seizing the U.S. infrastructure opportunity: Investing in current and future workers](#)," Brookings, Dec. 2022.
- 17 U.S. Department of Energy, "[United States Energy & Employment Report 2022](#)," Jun. 2022.
- 18 U.S. Department of Transportation, Bureau of Transportation Statistics, "[Transportation Economic Trends: Employment in Transportation and Related Industries](#)."
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- 31 The Illinois Economic Policy Institute. "[STUDY: Illinois' Construction Apprenticeship Programs Rival State Colleges and Universities on Key Performance Metrics](#)."
- 32 Kane, Joseph. "[Seizing the U.S. infrastructure opportunity: Investing in current and future workers](#)," Brookings, Dec. 2022. See also: Carnevale and Smith, 2020.
- 33 Hegewisch, Ariane and Eve Mefferd, "[A Future Worth Building: What Tradeswomen Say About the Change They Need in the Construction Industry](#)," Institute for Women's Policy Research, Nov. 2021.
- 34 [According to the Occupational Safety and Health Administration](#), workers in transportation and material moving occupations and construction and extraction occupations "accounted for nearly half of all fatal occupational injuries" in fiscal year 2021.
- 35 Scheiber, Noam, "[Building Solar Farms May Not Build the Middle Class](#)," The New York Times, 16 Jul. 2021; Glass, Aurelia et al., "[Prevailing Wages Can Build Good Jobs Into America's Electric Vehicle Industry](#)," Center for American Progress, 6 Jul. 2022; Jacobs, Ken et al., "[The Public Cost of Low-Wage Jobs in the U.S. Construction Industry](#)," University of California Berkeley Labor Center, 10 Jan. 2022.
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- 43 Specifically, eligible supportive services include: "training, and education activities, such as recruiting counseling, transportation, physical examinations, remedial training, personal protective equipment, tools, childcare, and temporary lodging." See: U.S. Department of Transportation, "[Guidance for Use of Federal-aid State Core Program Funds for Training, Education and Workforce Development](#)."
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