

BUILDING THE FUTURE WORKFORCE

A STATE PLAYBOOK TO
SHAPE A NEW AGE IN FEDERAL
INFRASTRUCTURE INVESTMENTS



ACKNOWLEDGMENTS

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INTRODUCTION

This policy playbook presents a comprehensive set of strategies aimed at empowering state policymakers, governors, and state agency leaders to cultivate a strong, diverse, and multigenerational workforce capable of driving the development and maintenance of our nation's new infrastructure. By implementing the following recommendations, state policymakers can connect more working people to quality jobs and create benefits for residents, businesses, and communities that rely on the implementation and maintenance of critical infrastructure.

- 1. Building a strong infrastructure workforce plan** and conducting a comprehensive workforce assessment in collaboration with local entities, including employers, unions, educational institutions, and community-based organizations, helps state policymakers bridge the gap between available jobs and qualified workers, thus creating more opportunities for individuals seeking quality jobs.
- 2. Fostering industry partnerships** that bring together businesses, unions, training providers, and community organizations to develop workforce strategies will help workers access quality infrastructure careers and address specific challenges. These partnerships promote equity and diversity, disrupt occupational segregation, and strategically utilize training funds for a competitive and inclusive infrastructure workforce.
- 3. Expanding access to skills training programs** will enable individuals to acquire the expertise required for sustainable career paths. By leveraging pre-apprenticeships, registered apprenticeships, and workforce programs at community and technical colleges, state policymakers can enable broader participation in the labor market, thereby fostering a more inclusive and skilled workforce.
- 4. Incentivizing and supporting training, hiring, and career advancement opportunities** for local residents will drive community development and enable equitable access to infrastructure-related jobs. This approach ensures that individuals residing in areas reliant on infrastructure development receive the benefits of new career prospects and advancement.
- 5. Providing economic support and breaking down barriers** will bolster workforce participation, particularly among underrepresented groups, by addressing financial obstacles that may hinder their access to training and employment opportunities.
- 6. Collecting comprehensive data** on job quality, employment, and training outcomes, with a focus on race, gender, and geography, will facilitate evidence-based decision-making and ensure that policies are tailored to meet the specific needs of diverse communities.



The success of planned infrastructure projects hinges on a new generation of workers having access to the education, skills training, and economic supports they need to access good jobs and careers in this booming sector.

An Infrastructure Renaissance and the Blueprint for a Diverse and Skilled Workforce

When lawmakers made historic investments almost sixty years ago to build the Interstate Highway System, they could not have foreseen the extent and complexity of today's technologically advanced infrastructure, or how workers, businesses, our economy, and nearly all of American life would rely on it. The U.S population has nearly doubled since passage of that 1956 law, and the demand for maintaining and expanding our public transit, roads, highways, and bridges has grown exponentially. At the same time, the rapid development of and demand for a modern, cutting-edge infrastructure that establishes electric vehicle charging networks, deploys broadband internet, and constructs sustainable energy systems (among other improvements) has shined a light on the need for investments in both hard infrastructure and, critically, in training the next generation of infrastructure workforce.

In 2021, Congress passed the Infrastructure Investment and Jobs Act (IIJA)—a law intended to address the deteriorating state of our nation's infrastructure by bolstering the capacity of the infrastructure sector

and equipping workers with the necessary skills, training, and resources to get jobs in the sector. IIJA programs such as the Broadband Equity, Access, and Deployment (BEAD) program and other pieces of legislation such as the Inflation Reduction Act (IRA) and the CHIPS and Science

Act are massive investments that are already spurring projects and creating hundreds of thousands of jobs across the country to rebuild our nation's roads and bridges, expand broadband, and upgrade public transit, utilities, and clean energy systems, among other projects. The success of planned infrastructure projects hinges on a new generation of workers having access to the education, skills training, and economic supports they need to access good jobs and careers in this booming sector.

Yet, for decades, our nation has failed to invest in high-quality, inclusive skills training that supports the

careers of working people, the sustainability of local businesses, and an economy where everyone can thrive.¹ As a result, people who may want to train for infrastructure careers often face barriers to doing so and projects are often critically understaffed, making it challenging for infrastructure employers to fill job vacancies. In addition to the lack of access to infrastructure skill-building opportunities that keeps people from getting good-paying infrastructure jobs, the sector is facing a “silver tsunami” of retirements as its aging workforce approaches the end of their working years. The additional jobs created by recent federal infrastructure investments will only heighten the demand for trained workers.

If our country is serious about training the next generation of workers, as well as ensuring that federal investments contribute to an *inclusive* economy, we need to intentionally open the door to millions of workers who want to train for a new career in infrastructure—particularly workers of color, and women. These workers have long been underrepresented in quality jobs in infrastructure fields and were also disproportionately working in essential industries impacted by the COVID-19 recession.

Policies aimed at training the next generation of infrastructure workers should create equitable pathways to **quality jobs**. Quality jobs seek diversity in recruitment and hiring, provide good wages and benefits, ensure a safe, fair, healthy, and accessible workplace with a predictable schedule, provide opportunities to build skills and advance within a career, ensure that workers have a meaningful voice, and foster diversity, equity and inclusion so that all workers feel respected and empowered.²

The opportunity is clear: nearly seventy-nine percent of federal funding through the IIJA will be allocated directly to states through formula funding.³ This means state transportation, energy, commerce, and broadband agencies will have a fair amount of discretion over how the funds are spent. If we want a skilled workforce capable of meeting the increased demands of infrastructure projects, state policymakers, advocates, unions, employers, training providers, community-based organizations, and community and technical colleges will need to work together to ensure that these resources are used wisely and equitably to build a diverse, multigenerational workforce trained to power our infrastructure for the next decade and beyond.

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Growing Workforce Needs

When we consider the scale of the new federal investments under the IIJA, IRA, and CHIPS Act, and the impact it will have on future generations of Americans, it's incumbent on states to invest in the current and future workforce. By doing so, there will be a ripple effect of economic growth. A strong workforce that creates reliable infrastructure allows for businesses to thrive and grow by preventing bottlenecks and aiding in the transportation of goods and services more freely. A strong workforce that provides safer roads and dependable public transportation makes it easier for people to access jobs and services and improves people's quality of life. A strong workforce capable of building green infrastructure and delivering clean energy is vital for combatting climate change, promoting economic growth, improving public health, and achieving sustainability goals. And a strong workforce that addresses our roads and bridges in disrepair and replaces outdated water systems upholds the safety, health, and well-being of everyone.

One recent calculation found that there are approximately 16.6 million infrastructure workers in the industry.⁴ However, this number is not sufficient to meet the existing demand for infrastructure projects and is contributing to labor shortages that hinder the progress of much-needed projects. Over the next decade, it is expected that each year on average 1.7 million infrastructure workers will leave their jobs or retire, which exacerbates the existing shortage and creates additional challenges for the industry. At the same time, the IIJA is projected to create 8.8 million new jobs over the next five years, primarily in the infrastructure sector. Millions of additional jobs will also be created by the Inflation Reduction Act and the CHIPS and Science



Act.⁵ Between impending departures and the demand for millions of new workers created by these laws, the infrastructure sector will soon face a massive shortage of trained workers—a shortage many times worse than what the sector has already been facing. To meet the upcoming job growth and address the current workforce shortage, it is essential to train new workers and equip them with the necessary skills to handle the increased demand for infrastructure projects. Avoiding past failures of underinvestment and inadequate training is tantamount, as investing significantly in workforce development and training will be key to overcoming the challenges in the infrastructure sector and meeting future demands successfully.

With projections indicating that between 2021 and 2031 1.7 million current infrastructure workers will leave their jobs or retire⁶, states and employers must pursue ways to retain the current workforce while simultaneously training and integrating new workers.

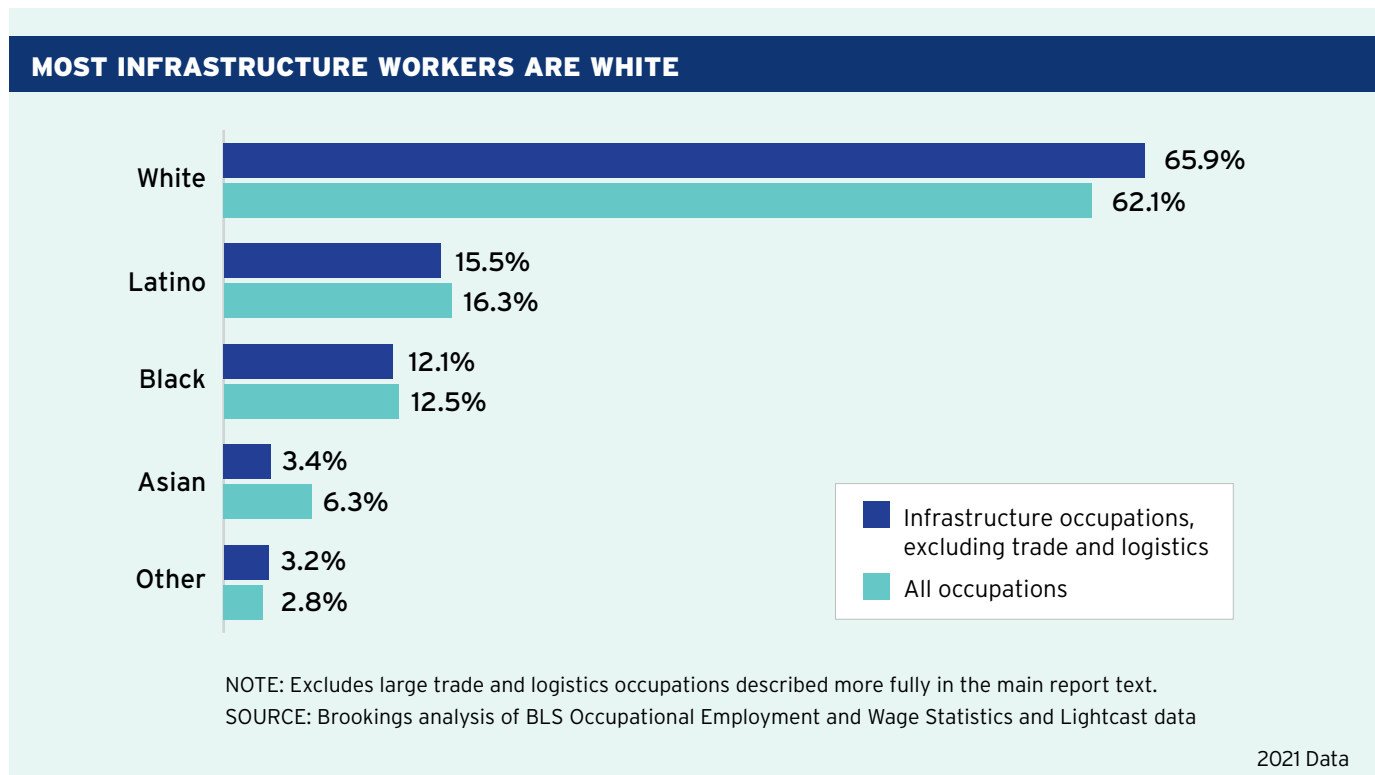
Addressing Racial and Gender Disparities Key to Maintaining and Growing the Infrastructure Workforce

It's worth noting that the overall U.S. workforce is becoming increasingly diverse. Projections indicate

that Black, Latino, and women workers will comprise an increasing share of the workforce, while the proportion of white workers will decline.⁷ A diverse workforce brings different perspectives, experiences, and skills to the table, leading to innovative solutions and improved decision making. The benefits of a diverse and inclusive workforce are well documented, including enhanced creativity, increased productivity, and better problem-solving capabilities.^{8,9}

Despite the growing diversity in the overall workforce, the infrastructure sector still lags behind in terms of racial/ethnic and gender representation. In comparison to the broader American workforce, workers in the infrastructure sector are more likely to be white, male, and older,¹⁰ a result of longstanding structural inequities.

Black, Latino, and Asian workers are inequitably represented within the infrastructure workforce when compared to the U.S. workforce as a whole, especially when excluding trade and logistics occupations (where overrepresentation by Black and Latino workers tends to skew estimates).¹¹ Women are also significantly underrepresented in many infrastructure fields, such as construction, where women comprised just 10.8 percent of the workforce in 2020.¹² Historical discrimination, limited access to education and training, biased hiring



BLACK AND HISPANIC WORKERS ARE CONCENTRATED IN LOWER-PAYING INFRASTRUCTURE OCCUPATIONS

Occupation	Employment	Mean wage	Share of Black workers	Share of Latino workers
Laborers and Freight, Stock, and Material Movers, Hand	2,729,010	\$34,950	22.1%	22.2%
Electricians	650,580	\$63,310	6.3%	16.6%
Packers and Packers, Hand	585,270	\$30,950	19.5%	37.4%
Plumbers, Pipefitters, and Steamfitters	417,620	\$63,350	6.0%	18.9%
Civil Engineers	304,310	\$95,490	4.6%	9.4%
Aircraft Mechanics and Service Technicians	125,440	\$69,470	10.3%	17.3%
Architectural and Civil Drafters	101,310	\$60,620	4.0%	13.3%
Control and Valve Installers and Repairers, Except Mechanical Door	44,870	\$67,310	11.4%	13.8%
Power Plant Operators	28,960	\$83,740	6.7%	6.1%
Electrical and Electronics Installers and Repairers, Transportation Equipment	10,710	\$70,650	11.4%	13.4%
All Occupations		\$58,260	12.5%	16.3%

Source: Brookings analysis of BLS Occupational Employment and Wage Statistics and Lightcast data 2021 Data

practices, and a male-dominated workplace culture have contributed to these disparities, and wage discrepancies and underrepresentation in leadership roles have further exacerbated the problem.

There is also occupational segregation by race/ethnicity *within* the infrastructure field. Black and Latino workers are often concentrated in lower-paying occupations in the infrastructure sector, such as laborers, maintenance workers, and construction helpers—despite making up about 15.5 percent and 12.1 percent of the overall infrastructure workforce respectively.^{13,14} These lower-paying positions often involve more physically demanding work and may lack opportunities for career advancement or higher wages. As a result, Latino and Black workers in the infrastructure sector may experience economic challenges and face barriers to earning a livable wage.

The dominance of older white men in the infrastructure workforce can be attributed to both historical and systemic factors involving structural racism and sexism. Throughout history, many industries, including infrastructure, were predominantly male dominated and excluded or limited opportunities for women or people of color.¹⁵

Discrimination, both overt and subtle, limited their access to education, job opportunities, promotions, and career development.¹⁶ Over time, white men gained experience, seniority, and established networks within the industry, making it more difficult for others to break into these roles, which perpetuated a cycle where older white men continue to dominate the infrastructure workforce.

The U.S. Equal Employment Opportunity Commission has found that discrimination in recruitment, apprenticeships, and hiring has and continues to block access to good paying construction careers while unequal treatment in the terms and conditions of employment—including training, hours, and work assignments—hinders advancement and pushes many women and workers of color out of the industry.¹⁷

Focus groups have revealed that even today, some hiring officials and staffing agencies in the industry blatantly refuse to employ women in the building trades, and that women who aspire to work in construction may face stereotypes surrounding what is traditionally considered “women’s work” and biased assumptions regarding their physical strength and suitability for the field.¹⁸



Realizing the full equity promise of new jobs and meeting the workforce needs of infrastructure sectors requires a different approach than what has been used in the past.

pers workers' potential but also limits the overall progress and effectiveness of the infrastructure sector.

Realizing the full equity promise of new jobs and meeting the workforce needs of infrastructure sectors requires a different approach than what has been used in the past. State policymakers can intentionally build a diverse, multigenerational infrastructure workforce building stronger workforce plans, fostering industry partnerships, expanding access to apprenticeships and skills training programs, incentivizing and supporting local training and hiring of residents, providing economic supports that break down barriers to education and skills training, and collecting comprehensive data on job quality and outcomes. These policies need to be pursued in a way that addresses historical inequities and actively and intentionally promotes quality infrastructure careers as well as diversity, equity and inclusion for workers of color and women. By doing so, the

The underrepresentation of women and people of color in the infrastructure workforce reinforces systemic barriers and denies people access to economic opportunities, career growth, and leadership positions. This not only ham-

per infrastructure sector can not only address workforce shortages but also advance innovation, underscore equity and economic mobility, and drive economic growth in the sector.

How Federal Funding and State Advocacy Can Transform the Infrastructure Workforce

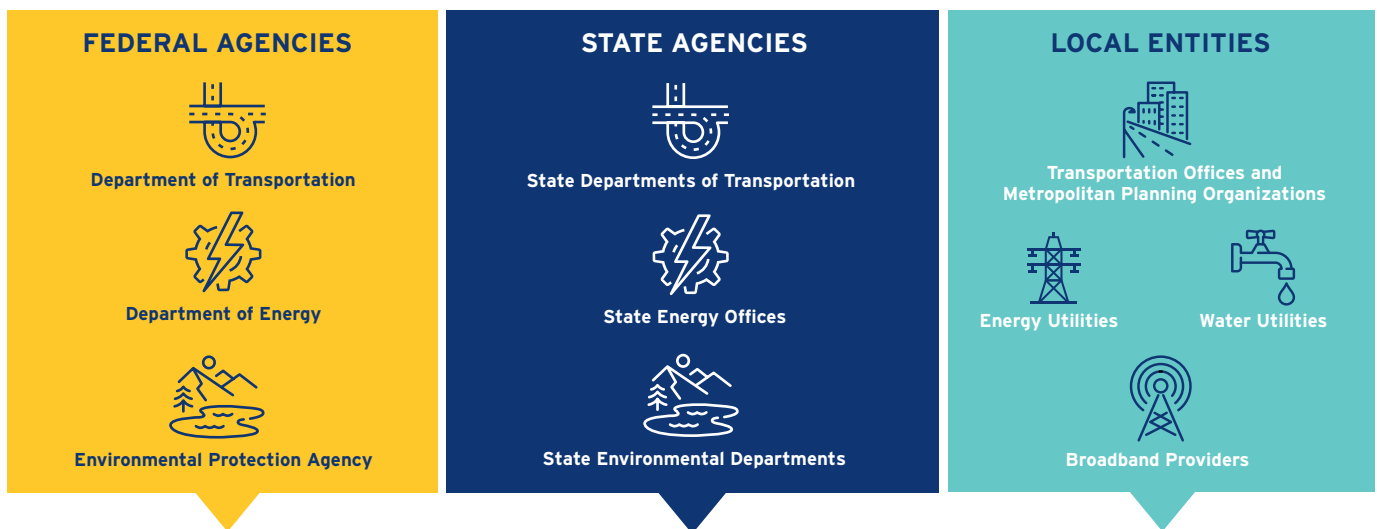
In recent years, Congress has passed historic legislation that ushers in nearly \$2 trillion in new federal spending which has the potential to reshape the American labor force entirely. States now have an exciting opportunity to invest in their workers by leveraging these new funding streams in concert with federal safety net dollars, other federal programs, and their own state funds. States can take action to ensure that they are maximizing new federal infrastructure funds, such as the IIJA, CHIPS Act, and the IRA, not just to implement physical infrastructure but also to prepare a new and diverse generation of infrastructure workforce. However, state decisionmakers and advocates shouldn't look just to these funding streams. They should also look to existing workforce development, postsecondary training, and human services funds to carry out the policy recommendations in this playbook.

New Federal Funding Streams Available for Workforce Development

■ **The Infrastructure Investment and Jobs Act (IIJA)** was signed into law on November 15, 2021. It's a bipartisan piece of legislation that brings in nearly \$1.2 trillion in investments for a diverse range of infrastructure projects, with the potential for historic investments in workforce development, training, and education activities, as well as state planning and research. The bulk of the funding—nearly seventy percent—comes from the Department of Transportation, which means state transportation agencies will be key players in how the funds are dispersed across the state. Though the precise timeline and implementation of IIJA is dependent on the specific projects and initiatives, and how quickly they are completed, the Biden administration has signaled that these projects will last a decade or more.^{19,20}

■ **The CHIPS (Creating Helpful Incentives to Produce Semiconductors) and Science Act**, signed into law on August 9, 2022, directs approximately \$280 billion in spending over the next decade. \$52.7 billion is specifically designated for American semiconductor research and development, manufacturing, and workforce training.²¹ The largest benefit to the infrastructure workforce comes from the requirement that private sector applicants requesting direct funding over \$150 million to construct manufacturing facilities must submit a plan to provide their facility and construction workers with access to child care.²² The implementation of the CHIPS Act could require more than 100,000 construction workers to build the facilities, and as such, the guidelines for funding specify that applicants “take action to conduct outreach to and retain women in construction jobs” as well as outline any wraparound services—such

STATE AGENCIES ARE KEY PLAYERS IN THE PLANNING AND IMPLEMENTATION OF IIJA



- Multiple agencies* involved in program design, funding, and regulatory oversight, especially for competitive programs
- Programs typically vary by the type of infrastructure project and activity
- Other key responsibilities include technical assistance and research and development

- Many state-level agencies are responsible for infrastructure planning, project delivery, funding, and regulatory oversight
- Formula programs within IIJA typically must pass through these agencies
- They often must coordinate programs with federal and local partners

- Numerous local entities are responsible for infrastructure project delivery and service provision—and workforce planning
- These local entities are eligible for IIJA funding and serve as major employers
- However, these entities may not coordinate with community partners (e.g. educational institutions, non-profit organizations)

* U.S. Department of Transportation, U.S. Environmental Protection Agency, U.S. Department of Commerce, U.S. Department of Energy, U.S. Department of the Interior, U.S. Department of Homeland Security, U.S. Department of Agriculture, Appalachian Regional Commission

as adult care, transportation assistance, or housing assistance—they will use to increase access to and completion of training.²³

- **The Inflation Reduction Act (IRA)** was signed into law on August 16, 2022, and contains \$500 billion in new spending and tax breaks that aim to boost clean energy, reduce healthcare costs, and increase tax revenues.²⁴ The IRA includes \$4.5 billion that could be used for workforce or occupation-specific training, but advocates must be able to collaborate with state Energy agencies and contractors to support this training.²⁵ The IRA also incentivizes apprenticeship and skill-building investments through government spending, encouraging employers to hire registered apprentices and linking prevailing wage and apprenticeship requirements to public projects to ensure equitable access for new industry entrants. Specifically, certain clean energy projects and manufacturing facilities are only eligible for full tax credits if they hire a specific share of apprentices and pay them prevailing wages—“the basic hourly rate of wages and benefits paid to a number of similarly employed workers in a given geography.”²⁶ States can help projects and facilities maximize this incentive by broadening and diversifying the apprenticeship pipeline.
- **American Rescue Plan Act (ARPA)** was signed into law on March 11, 2021, and provides \$1.9 trillion in economic stimulus to provide relief in response to the COVID-19 pandemic. An estimated \$40 billion of the \$1.9 trillion appropriated under ARPA will be expended through 2024 on workforce

development efforts in such areas as diversifying the infrastructure workforce, strengthening the health-care workforce, and expanding access to skilled jobs for underserved Americans.²⁷ ARPA offers flexible funding which allows training and support services and even one-time emergency assistance funds to be given to workers through a single source versus different agencies. It also allows a greater diversity of applicants to pre-apprenticeships to qualify for immediate assistance instead going through different qualification processes depending on their background or range of needs.


Other Federal Funding Streams

- **WIOA (Workforce Innovation and Opportunity Act)** is America's primary workforce training program. It provides funding to states and local workforce development boards to support programs intended to increase access to employment and education, help employers hire and retain skilled workers, and provide training and support services for job seekers and employers.²⁸ WIOA funds can be used to support a wide range of workforce development activities, including job training, adult education and English Language learning, on-the-job training, apprenticeships, and supportive services like child care and transportation, but low funding levels often prevent WIOA from being used for all of these purposes. WIOA encourages collaboration among various workforce development partners, such as educational institutions and employers, to create effective training and



BRAIDED FUNDING: ADDITIONAL CONSIDERATIONS AND RESOURCES TO LEVERAGE

In addition to the myriad federal and state funding streams that could be allocated to support infrastructure skills training, states can also consider creative approaches to leverage and braid together numerous funding streams to support an inclusive infrastructure workforce. States could align federal, state, and philanthropic apprenticeship grants and funding streams to fill in any funding gaps to make infrastructure apprenticeship programs accessible in all parts of a state—rural, urban, and suburban regions. They can ensure that state financial assistance for postsecondary education, including promise programs and need-based opportunity grants, are available to workers pursuing infrastructure training and that the full continuum of pathways, from short-term non-credit certificates to credit degree pathways, are eligible for state aid. States can also identify discretionary or flexible funding streams available through the governor's office, labor, human service, or higher education agencies that could be allocated for demonstration projects or one-time awareness building campaigns and outreach strategies that could increase awareness of the infrastructure career pathways available and access of the related training pathways and resources.



State policymakers can intentionally build a diverse, multigenerational infrastructure workforce by building stronger workforce plans, fostering industry partnerships, expanding access to apprenticeships and skills training programs, incentivizing and supporting local training and hiring of residents, providing economic supports that break down barriers to education and skills training, and collecting comprehensive data on job quality and outcomes.



employment opportunities. While WIOA is underfunded relative to need, Governors can leverage the fifteen percent set-aside provision to carry out new skills training strategies for infrastructure jobs. Under WIOA, each state is required to reserve at least 15 percent of its total WIOA Title I funding allocation on innovative strategies that address states' specific workforce needs. States could use the fifteen percent set aside to design and deliver specific infrastructure training programs, for example, such as pre-apprenticeships.

- **SNAP Employment and Training (SNAP E&T)** is a powerful and frequently underutilized federal program for people who access Supplemental Nutrition Assistance (SNAP) benefits. States can utilize SNAP E&T to provide high-quality skills training and supportive services, and to connect people to quality jobs that offer economic mobility and meet the needs of local employers. Through partnerships among community colleges, nonprofits, workforce development organizations, human service agencies, labor agencies, state higher education offices and associations, community-based organizations, and adult education providers, states are able to leverage SNAP E&T

to generate a robust funding stream that expands access to high-quality training, and supportive services in order to develop a more inclusive and equitable infrastructure workforce.²⁹ Funds can be utilized to cover the costs of training, including tuition, fees, tools, required industry-recognized credentials, transportation, and child care.

- **TANF (Temporary Assistance for Needy Families)** is a federal block grant intended to aid low-income families. In addition to providing basic (cash) assistance, states can use TANF block grants to provide child care and other supportive services to people with low incomes, including those who are pursuing training.
- **The Child Care and Development Fund (CCDF)** provides federal funding to states to help low-income families access affordable and quality child care services. States can use CCDF funds to support child care subsidies, which enable parents to work, attend training, or participate in education programs. By providing reliable and affordable child care, this funding stream helps remove barriers that may prevent people from acquiring new skills.

HOW STATE WORKFORCE ADVOCATES AND POLICYMAKERS CAN LEVERAGE A NEW OPPORTUNITY WITHIN FEDERAL HIGHWAY FUNDING

State advocates and stakeholders, in coordination with state departments of transportation, have a significant opportunity to invest directly in workforce development through the 504(e) formula funding. This funding flexibility, provided under section 504(e) of the Fixing America's Surface Transportation or FAST Act passed in 2015, allows state DOTs to allocate federal funding from four core Federal Highway Administration (FHWA) programs—totaling approximately \$241 billion—to support workforce development activities.

Under the IIJA, the percentage of funds permitted to be used and the definition for allowed uses has been expanded, and states can theoretically now access unlimited money from these core programs to support workforce development, training, and education activities related to surface transportation. These activities include pre-apprenticeships, apprenticeships, career opportunities for on-the-job training, and establishing partnerships with industry, workforce development boards, and labor organizations.³⁰ Revisions to 504(e) also allow for funds to be spent on supportive services programs in connection with workforce development, training, and education activities, such as recruiting, counseling, transportation, physical examinations, remedial training, personal protective equipment, tools, child care, and temporary lodging.

Overall, this enhanced flexibility in 504(e) formula funding presents a golden opportunity for advocates to work with state DOTs to prioritize and invest in workforce development initiatives, creating new pathways for training, education, and support services that bolster the surface transportation industry, particularly for women and people of color.



RECOMMENDATIONS FOR STATES

It's crucial for states policymakers, governors, and agency leaders to capitalize on the opportunities presented within the IIJA and other federal and state funding streams in order to achieve an inclusive infrastructure workforce and expand access to skills training. By doing so, states can enhance job quality, facilitate workforce growth, address attrition, and attract talent from historically underrepresented populations. An inclusive and skilled workforce is essential for successfully executing infrastructure projects and ensuring the long-term sustainability of the nation's infrastructure development. For the purpose of building a multigenerational workforce capable of meeting the challenges of the future, NSC recommends states take the following actions.

1 Build Stronger Infrastructure Workforce Plans

To effectively leverage funding provided by the IIJA, as well as state funds and other federal investments under the IRA and CHIPS, states should conduct a comprehensive assessment of their current workforce capacity and identify skills mismatches, training, and employment opportunities within the infrastructure industries. This assessment should be done in collaboration with local entities, including employers, unions and labor organizations, industry associations, training providers, community-based organizations, educational institutions, and workers themselves. Either through legislative action or an executive action by the governor, states could also set up advisory councils that bring together key agency decision makers along with external partners, and have a public engagement process.

This sort of collaboration allows for a more thorough understanding of the specific needs and challenges faced by the local workforce, and provides an opportunity to better tailor training programs to meet the needs of the infrastructure sector, receive input on curriculum development, and streamline pathways for people seeking employment opportunities or access to training, pre-apprenticeships, or apprenticeships.

State agencies responsible for transportation for example, in consultation with relevant stakeholders, such as industry groups, education providers, labor organizations, and workforce boards are encouraged by the federal government to develop voluntary Transportation Human Capital State Plans.³² These five year plans outline strategies for workforce development, training, education, recruitment, and retention, and efforts to promote diversity, equity, and inclusion in the transportation workforce.

States can also integrate supportive services for workers into their infrastructure workforce plans. Local and regional transportation agencies, employers, unions labor organizations, and other stakeholders can collaborate with states to create and execute transportation programs that cater to the requirements of the infrastructure workforce. These initiatives can involve forming partnerships to provide shared transportation services like vanpooling, ride sharing, or shuttle services to ensure the transportation needs of the infrastructure workforce are being met—especially in more remote project sites.

ILLINOIS PROVIDES REPLICABLE GUIDANCE AROUND STATE AND LOCAL WORKFORCE PLANS

Illinois's Climate and Equitable Jobs Act was passed in 2021 and provides an example of state legislation that lays out guidance around state planning processes for equitable job training and hiring. In addition to targeting investments of \$80 million per year for clean energy workforce and contractor development programs in Black and Brown communities, the legislation encourages local governments to develop Community Energy, Climate, and Jobs Plans as a means of developing a comprehensive approach to combining different energy, climate, and jobs programs and funding resources to achieve complementary impact. Recommendations for plans include expanding access to workforce development and job training opportunities for underrepresented workers in the emerging clean energy economy, as well as discussions around the demographics of the community, including information on the mix of residential and commercial areas and populations, ages, languages, education, and workforce training. The proposals may also conclude with proposals to direct public agencies to implement tools to incentivize manufacturers in clean energy industries to create and retain quality jobs and invest in training, workforce development, and apprenticeship programs in connection to major contracts.³¹

A collaborative approach to planning can result in more effective and targeted workforce development initiatives, leading to a more skilled and competitive infrastructure workforce in the states. It also taps the expertise of local communities, promotes a sense of ownership and buy-in from stakeholders, enhances a shared understanding of the goals and objectives of the IJJA-funded workforce programs, and maximizes the impact of the funding for the benefit of the local community.

Local entities and stakeholders should be included in the implementation process as well, possibly through their inclusion into community workforce agreements between project owners and labor groups.³³ Having provided guidance on assessments in the planning phase, they can then facilitate coordination and understanding when funding becomes available and align around the workforce needs of the infrastructure sector. While planning is necessary, it's not necessarily sufficient. The process of engaging stakeholders and ensuring agency outreach to colleagues in labor,

workforce, and education departments is how plans will have impact.

States should also set goals for investing in the infrastructure workforce in ways that create good jobs and build stronger and more sustainable regional and local economies. In addition to setting goals for increasing employment in different sectors of a state's infrastructure economy, such as transportation, states should also include a sector equity component so that employment growth is oriented toward including more people of color and women into the good jobs within the sector.

For example, states should adopt a performance goal that seeks to drive an increase in the percentage of workers in the infrastructure sector who come from underrepresented communities including women and people of color. Goals and metrics should also focus on expanding access to training, skills and quality credential attainment, and supportive services as well as creating more welcoming working environments for workers of color and women.

2 Invest In Industry Partnerships

Industry partnerships bring together local businesses, unions and worker organizations, community colleges, training providers, and community organizations to develop local and industry-specific workforce strategies. These partnerships are a proven model for helping workers enter and advance in a local industry and helping local companies support an inclusive talent ecosystem. Industry partnerships also address specific challenges identified by industry stakeholders representing both workers and businesses.³⁴

Industry partnerships have the potential to expand access to quality infrastructure careers for people of color and women. Since industry partnerships intentionally broker training, hiring, and advancement opportunities between workers and employers within a particular sector, they can be used to disrupt occupational segregation if they are equity focused. They can also broker apprenticeship strategies, validate industry-specific credentials, and deepen partnerships between community

college workforce programs and employers to further strengthen their workforce programs.

Industry partnerships also create a collaborative and coordinated approach to workforce development, and can ensure that training funds are strategically used to address the specific needs of the infrastructure industry that results in a well prepared, competitive, and inclusive workforce. In order to advance industry partnerships, and to do so in a way that promotes equity and diversity across the infrastructure industries, states should develop a single program that incorporates all of the following components.

- 1. Funding and Grants:** States can establish funding mechanisms dedicated to promoting equity and inclusion, specifically targeting partnerships within the infrastructure industries. This can include IJJA funds, dedicated funds from state budgets, WIOA Title I 15 percent set-aside funds, discretionary grants or grants

from other relevant federal programs or agencies to create or expand sector partnerships in infrastructure industries.

States should allocate a portion of these funds towards equity-advancing practices, like collaborating with employers to enhance equitable hiring practices.³⁵ Funding can also support research and development, training programs, and pilot projects that focus on equitable outcomes, such as hiring from underrepresented communities and providing fair wages.

CALIFORNIA'S HIGH-ROAD TRAINING PARTNERSHIPS INTEGRATE FUNDING, SECTOR PARTNERSHIPS, CAPACITY BUILDING, TECHNICAL ASSISTANCE, AND ASSESSMENT ALL INTO ONE PROGRAM

A model worth highlighting is California's High Road Training Partnerships (HRTPs).³⁶ The state, through California's Labor and Workforce Development Agency and the California Workforce Development Board, have adopted awards grants that aim to create economically resilient communities by focusing first and foremost on equity and job quality. Workers, labor and other worker organizations, and employers are recognized as industry experts and work alongside community-based organizations and training institutions to provide workforce development solutions with pathways to quality jobs for all Californians, especially those from the most disadvantaged communities. The evaluation process for HRTPs is also different in that success is associated not just with quantitative results, but with promoting worker voice and power, systems change, culture shifts, and other qualitatively measured indicators of high road success.³⁷

2. Encouraging Equity and Inclusion in

Infrastructure-Related Sector Partnerships: States can promote equity and inclusion by providing funding incentives for sector partnerships that establish specific goals. These goals should focus on expanding access to education and training programs for women and people of color, increasing their representation in infrastructure industries, and improving persistence and completion of training programs by women and people of color.³⁸

To qualify for funding, partnerships should prioritize infrastructure sectors offering higher-wage occupations, but not limited to that. The criteria for funding should ensure that a diverse range of workers and businesses have fair access to training resources, which can be achieved by considering different factors, such as the existence of significant job opportunities within the infrastructure industry, addressing occupational segregation faced by people of color and women, meeting the demand for upskilling to adapt to technological advancements, providing career advancement opportunities for workers with transferable skills, and promoting job quality and equitable hiring practices through training-related investments.³⁹

3. Capacity Building, Technical Assistance, and

Assessment: States can provide capacity building and technical assistance to industry partnerships to enhance their knowledge and skills in equity-advancing practices. This can include direction and counseling from state staff in forming and sustaining local partnerships, professional development and capacity building through academies, toolkits, and peer sharing networks, customized labor market information and economic analysis, and information on career pathways, worker training resources, skill standards, and industry-based certifications.⁴⁰ States can also invest in research and the collection and analysis of quantitative and qualitative data to assess the impact of industry partnerships and their efficacy closing racial and gender gaps. States should also adopt equity indicators for funded partnerships to measure progress on employment and wage outcomes, career advancement, employer engagement, and job quality.

3 Expand Access to Skills Training Through Pre-Apprenticeships and Registered Apprenticeships Programs and Through Workforce Programs at Community and Technical Colleges

Expanding pre-apprenticeship and apprenticeship programs in the infrastructure sector aims to tackle the issue of underrepresentation of women and people of color in skilled trades. These programs offer a career pathway and upward mobility, but success hinges on skilled instructors, deliberate outreach, and inclusive environments. Expanding financial aid for postsecondary education at community colleges can also level the playing field for underserved students and foster access to infrastructure careers. Aligning financial aid with high-demand training and addressing gaps in aid eligibility for non-degree credentials can empower a more diverse and skilled workforce ready for future infrastructure challenges.

Expand Pre-Apprenticeship and Apprenticeship Programs in the Infrastructure Industries with an Emphasis on Quality and Diversity

Registered apprenticeships are a pivotal training vehicle within the infrastructure sectors, offering a dual advantage of “earn and learn,” which not only equips people with practical skills but also allows them to earn a wage while honing their expertise. Federal investments have spurred the growth of apprenticeship programs, recognizing their role in addressing skills mismatches and fostering economic development.

States face the task of expanding and diversifying the apprenticeship pipeline, a challenge that can be effectively met through pre-apprenticeship programs. By providing aspiring apprentices with foundational skills, and exposure to industry-specific knowledge, pre-apprenticeship programs pave the way for a more inclusive, multigenerational workforce. The synergy between registered apprenticeship and pre-apprenticeship programs strengthens the infrastructure sector by developing a skilled and diverse workforce that can drive sustainable growth.

As previously mentioned, women and people of color are underrepresented in many infrastructure industries, including the skilled trades. Between 1999 and 2019, there were more than 1.5 million new registrations in the construction trades apprenticeship programs for example, but the demographics showed that registrants were predominantly male (96.7 percent) and White (65.1 percent).⁴¹ Pre-apprenticeship programs—which have a documented partnership with at least one registered apprenticeship

program⁴²—and apprenticeship programs can provide a pathway to economic mobility for women and people of color, and these programs can lead to well-paying, skilled jobs that offer benefits and opportunities for advancement. However, the strength and success of the programs, as measured by completion, employment, and job quality, are dependent on the cultural and linguistic competencies of the instructors—combined with technical instruction—as well as access and deliberate outreach to women and people of color, and the assurance that the learning and working environment is one that fosters acceptance and growth.

States can seek out and financially support (via grant programs or referral resources) community-based organizations and labor unions that have a track record of serving women and people of color to help identify and recruit students for quality pre-apprenticeships that prepare participants for registered apprenticeships.⁴³ These organizations can also provide support services to students throughout the program, such as mentoring and job placement assistance. Pre-apprenticeships have also been proven to diversify the workforce and bring more women into apprenticeship programs and improve retention in said programs.⁴⁴ Effective pre-apprenticeship programs allow participants to build relationships with those in the field and provide support for participants to address barriers to employment before starting a job. Mentoring and support groups associated with pre-apprenticeship programs can serve as vital peer networks to help participants succeed in training and at work. Policies to expand pre-apprenticeship programs can work in tandem with efforts to support local hire and with policies to expand economic supports like child care and transportation, which are critical to addressing racial and gender equity.

With state funding, states could establish quality standards for pre-apprenticeships that require programs to meet certain benchmarks in terms of curriculum, instructor qualifications, student support services, and program outcomes. While the Department of Labor does not regulate pre-apprenticeship programs in the same way it does registered apprenticeships, the Employment and Training Administration has released guidance defining quality pre-apprenticeship programs that state agencies and legislators can promote and apply to aforementioned programs in their states.⁴⁵

HAMPTON ROADS WORKFORCE COUNCIL ACTIVELY ENGAGES COMMUNITY AND INDUSTRY IN UNDERSTANDING THE CONNECTION TO A DIVERSE WORKFORCE.

Hampton Roads Workforce Council (HRWC) oversees federally funded workforce development programs (like WIOA) for the Hampton Roads region with the goal of assisting businesses to access qualified workers.

In August of 2022, HRWC was selected by the U.S. Economic Development Administration as one of 32 awardees of the Good Jobs Challenge. As part of this initiative, the Workforce Council received a grant to serve as the lead in the development and implementation of a Hampton Roads Regional Workforce Training System (RWTS).

RWTS is tasked with meeting the diverse workforce needs of the region's maritime "blue-green" economy, which includes ship/boatbuilding and repair; port logistics and distribution; advanced manufacturing; and offshore wind. Their goals are to foster regional collaboration, expand training capacity, and to enroll more than 950 people in maritime training programs with Black, Indigenous and other people of color; women, veterans and young people who are neither in school nor working making up 70% of the talent.

Industry-driven sector partnerships

HRWC has a long history of convening and working within the region's partner network to implement sector partnerships. In 2019, HRWC commissioned a study of the regional workforce and talent pipeline, finding that Hampton Roads has a growing labor shortage. Prompted by the report's findings HRWC created the Coalition for Talent Development – a group dedicated to forming sector partnerships in major industries in the region. The coalition organized leaders from local businesses, education and training institutions, municipal government and economic development groups including HRWC to create their first sector partnership in the maritime industry.

The industry-led Coalition represents 50+ partners and has resulted in commitments to hire and curriculum expansion.

The coalition uses the U.S. Chamber of Commerce's Talent Pipeline Management methodology to convene industry partners for information gathering regarding critical jobs, competencies and credentials, and hiring projections. Industry led the conversations and data collection to understand their key pain points and then workforce stakeholders were invited into the conversation following the analysis of the data.

Building a diverse workforce through partnerships

As they looked through the data, HRWC began to understand the importance of equity to their recruitment strategy. In order for HRWC to reach their recruitment goals, and for the industry to have enough workers,



Photo courtesy of Hampton Roads Workforce Council

they would need to recruit from communities that haven't typically worked in the maritime industry before, like women and people of color, young people, and people from the ALICE* community (which make up more than 30 percent of households in Hampton Roads).

As part of this recruitment strategy, HRWC is working to establish a group of Maritime Workforce Recruiters. People who already work in the maritime industry and live in targeted communities would hold these "career navigator" type positions. They're paid for their work helping others in their community find opportunities in the maritime industry; and they will have responsibilities like conducting community outreach, career advising, service referrals and event planning.

While recruitment is one key to ensuring a diverse pipeline, HRWC knew that many trainees would need wraparound services to ensure they completed training and made the transition into full-time employment. The Good Jobs Challenge grant provides wraparound support costs for transportation, job-related expenses, financial counseling, career coaching, and child care for eligible participants, while enrolled in a qualified training program and up through the first 30 days of employment.

Industry driving success

For maritime employers, "the grant builds on their current talent acquisition efforts by connecting them to a more diverse talent pipeline" says Amanda Slosson, Senior Director at HRWC. "It also ensures that industry needs are considered during every piece of the development of the program including new curriculum design, training capacity expansion, and ensuring positive employment outcomes." Through outreach and recruitment efforts, industry will have the opportunity to access everyone connected to the maritime talent pipeline. These opportunities for engagement will



Photo courtesy of Hampton Roads Workforce Council

include career exploration, listening sessions and general networking events where prospective participants can learn firsthand from industry about the types of careers associated with the "blue-green" economy. They can also feel free to ask questions about their particular fields of interest prior to training program selection and enrollment, and/or can be directly recruited for jobs currently available. These engagement events are held in partnership with the local community navigators, which are individuals and/or organizations within the community that assist with outreach and recruitment activities.

**ALICE is an acronym that stands for Asset Limited, Income Constrained, Employed. It is used by the United Way to describe the growing number of families who are unable to afford the basics of housing, child care, food, transportation, health care, and technology. These workers often struggle to keep their own households from financial ruin, while keeping our local communities running.*

Expand Financial Aid to Open the Doors to Postsecondary Education and Training at Community Colleges

Community colleges and technical colleges are essential in developing the future infrastructure workforce due to their accessibility, workforce development programs, and industry partnerships. As open-access institutions that serve all regions in a state, urban and rural alike, and can be essential economic drivers in a region. Community and technical colleges provide affordable and flexible educational pathways and offer programs in construction, welding, engineering, mechatronics, computer aided design and drafting, apprenticeship programs and other related career and technical education which prepare students for roles in building, maintaining, and improving our nation's infrastructure.

States can make this training more accessible by establishing expanded financial aid for infrastructure careers, especially for students from families with low incomes, students of color, and students from rural areas.⁴⁶ One 2021 student survey found that, for nearly half of respondents, cost of attending college was the most significant barrier to enrollment.⁴⁷ Financial aid also contributes to higher retention and completion rates for students. The same 2021 student survey found that almost half of respondents said that “free college would have the biggest impact on their decision to return to school or complete their degree.”⁴⁸

A debt-free postsecondary pathway that has shown promise in increasing access to higher education and helped to close equity gaps in higher education is Michigan's Reconnect Program. Funded through state general funds, the program is packaged as a last-dollar scholarship, which provides funding to cover the cost of tuition and fees after other sources of financial aid have been exhausted—such as federal grants, state grants, and other scholarships. Previously only eligible to adults 25 years old and older, the state invested an additional \$70 million in one-time federal American Rescue Plan Act (ARPA) dollars to temporarily expand eligibility to people over the age of 21.⁴⁹ Already, more than 93,000 Michigan residents have been accepted into the program since it launched in 2021.⁵⁰

In addition to the Michigan Reconnect Scholarship, the state also offers \$1,500 in tuition aid through the Short-Term Training Program (funded through the Michigan Reconnect Program) to adults seeking certificates and

training in high-demand trade careers such as industries, construction, and manufacturing to name a few.⁵¹ Along with the Futures for Frontliners program, which allocated \$24 million in federal CARES (Coronavirus Aid, Relief, and Economic Security) Act funding to provide essential, frontline workers the opportunity to earn a community college education free of tuition, Michigan has revealed creative methods by which a state can braid state and federal funding to essentially provide debt-free, expanded financial aid.

States should work to ensure that financial aid covers training programs that deliver quality nondegree credentials in the infrastructure field. Georgetown University's Center on Education and the Workforce estimates that 60 percent of jobs created through the federal infrastructure bill will require six months of training or less, and that much of this training will be delivered by community colleges.⁵²

States should work to ensure that financial aid covers training programs that deliver quality nondegree credentials in the infrastructure field.



However, short-term and noncredit training programs that result in a quality credential are often not eligible for the federal Pell Grant, the largest source of financial aid available to low-income students or other sources of state financial aid. This gap in reliable access to financial aid for students in QNDC programs disproportionately burdens the students of color and women who are actively working to earn credentials that will advance their careers and improve their earning potential. In response, many states are establishing and should establish financial aid programs to serve students enrolled in QNDC programs.⁵³

States investing in financial aid for students pursuing short-term skills training should implement frameworks, policies, and data systems to help them guide funds towards credentials that result in positive and equitable outcomes for learners in QNDCs. Virginia offers a robust set of resources to encourage access, completion of QNDCs, and connection to quality jobs. The Financial Aid For Noncredit Training Leading To Industry Recognized Credentials (FANTIC) and FastForward Program provide

financial assistance to students enrolled in eligible noncredit, short-term training programs that lead to credentials in a high-demand field, including programs in the manufacturing and construction trades. For specific training programs to get approval for FastForward eligibility, institutions submit applications to the Virginia Community College System (VCCS), which vets them according to a set of quality criteria, including whether they are industry recognized, portable, competency-based, third-party validated, and stackable.⁵⁴ G3–Get

A Skill, Get a Job, Get Ahead—offers financial assistance in designated, in-demand industries and include credit options. G3 students are in a “stackable” pathway, where students can earn a QNDC with immediate value in the job market. And because that certificate is part of an applied associate degree program, a working student can continue to “stack” additional certificates on the pathway to an associate degree for additional career progression.

4 Incentivize And Support Training, Hiring, And Career Advancement of Local Residents

The Biden-Harris administration created the Justice40 (J40) Initiative which addresses gaps in transportation infrastructure and public services by working toward the goal that at least 40 percent of the benefits from certain federal grants, programs, and initiatives flow to underserved communities. The IIJA aims to capitalize on the J40 initiative by investing in under-resourced communities to ensure that everyone has access to essential infrastructure such as rails and roads, clean water, high-speed internet, clean energy, and resilient infrastructure. One way to further benefit local communities is by incentivizing the training, hiring, and career advancement of local residents for the new jobs created by these infrastructure projects.

Hiring locally for infrastructure projects under IIJA fosters community development, contributes to workforce development, and promotes social equity. Local workers have a vested interest in the success of the project and can bring local knowledge and context to the job. Hiring locally can develop a skilled local workforce and address local unemployment and underemployment issues. It can also reduce costs associated with relocation and outsourcing and promote diversity and inclusion in the workforce.⁵⁵

Prior to the passage of the IIJA, local hire provisions for federally funded projects were prohibited as anti-competitive, though many state and local project labor agreements prioritized local hire as a means of supporting job creation. The IIJA’s lifting of local hire

prohibitions for federally funded transportation construction projects encourages the establishment of strong sector-based training programs that offer pathways through entry level to higher level skills training and enables people to fill jobs for which contractors and subcontractors are hiring. The provisions also sustain local capacity to train, upskill and reskill workers even after a single project is completed. Skills training programs can work in concert with local hiring and advancement efforts.

To encourage the use of local hiring, the U.S. Department of Transportation, which has discretion over the bulk of the IIJA funds, has incorporated the use of local hiring preferences among the selection or merit criteria for most discretionary grant programs under Federal Highway Administration (FHWA) projects funded by the IIJA.⁵⁶ In turn, states have incorporated those standards into their implementation plans. Oregon provides a gold standard by creating a Community Workforce Agreement Program underneath the Oregon Department of Transportation (ODOT) to address federal prioritization of contracting that meets high labor standards, such as local hiring and workforce development, training and education.^{57,58}

State agencies that receive federal infrastructure funds for transportation construction projects can align local hiring initiatives with industry partnerships that include businesses, unions, community organizations, and others to create community-based pre-apprenticeship and

NEW YORK PRE-APPRENTICESHIP PROGRAM PREPARES PEOPLE FOR GOOD JOBS THAT MEET LOCAL INFRASTRUCTURE DEMANDS

Syracuse Build is a local initiative led by community partners in Syracuse, New York to support the training, hiring, and career advancement of women and people of color in construction trades. Initially launched by Mayor Ben Walsh in 2018 to prepare workers for repairs to Interstate 81, the initiative now serves to build a diverse and skilled workforce for upcoming infrastructure projects.

Syracuse Build's key lever is Pathways to Apprenticeship, a comprehensive, 11-week pre-apprenticeship program developed in partnership with the Central and Northern New York Building Trades Council, the city of Syracuse, local construction firms, and Centerstate Corporation for Employment Opportunity. The purpose of the pre-apprenticeship program is to support a stronger pipeline of women and people of color entering competitive registered apprenticeship programs that lead to high-quality union construction jobs. In Syracuse, registered union apprentices earn prevailing wages and benefits that support economic mobility, and are also provided the training and protection needed to ensure a safe career in construction.

To increase the number of women and people of color on this career path, Pathways to Apprenticeship's Multi-Craft Core Curriculum (MC3) equips participants with the physical and technical skills needed to enter competitive registered apprenticeship programs. MC3 is nationally recognized by the North America's Building Trades Union and includes training on Tools and Materials, Construction Health and Safety (OSHA 10 & CPR, First Aid Certification), Blueprint Reading, Basic Math for Construction. The pre-apprenticeship program also provides supports to mitigate barriers

to training and employment. For example, participants earn wages and receive financial empowerment coaching, have access to navigators that help address issues like transportation and child care, and engage in networking and mentorship opportunities with local trade unions and community groups like 100 Black Men of America.

The apprenticeship readiness program not only benefits participating workers in the community, it also meets the needs of employers by continuously building a local, diverse, and skilled infrastructure talent pool. This is made possible through strategic planning by local partners. Leaders representing the city, employers, and trades unions collaborate to identify upcoming infrastructure jobs and evaluate demands for local workers. Working together, the partners conduct research, determine industry needs, and map out a curriculum that aligns with upcoming jobs. This joint effort ensures buy-in from all parties that play a role in the success of residents participating in the pre-apprenticeship program.

By effectively building sector partnerships that provide short-term skills training and targeted services, Syracuse Build has successfully demonstrated how to prepare local workers for high-quality meaningful career pathways. Of the program's five graduated cohorts to date, eighty-six individuals have graduated, ninety percent are Black and fifteen percent are women. Pathways to Apprenticeship is a strong example of how federal and state investments can be leveraged to empower local workers, especially women and people of color, with access to good jobs in infrastructure.



Women and people of color have historically faced occupational segregation through limited access to education, job opportunities, promotions, and career development, especially in non-traditional occupations.

community organizations. Partnering with women-owned and minority-owned contracting firms helps achieve targeted local training and hiring goals and promote diversity as well.

While the IIJA encourages local hire, it's not mandated. But for states that decide to enact local hire efforts, they can implement monitoring and reporting mechanisms to help track progress. This can include regular reporting for project awardees on the number of local workers hired, the types of training programs implemented, and the outcomes of workforce development initiatives. Monitoring and reporting can help states track progress and make adjustments as needed to

training programs that prepare and connect residents with jobs created by new infrastructure projects, as discussed previously, and that promote⁵⁹ outreach to specific com-

ensure that local workers are being prioritized in infrastructure projects.

Women and people of color have historically faced occupational segregation through limited access to education, job opportunities, promotions, and career development, especially in non-traditional occupations. In addition to training for initial employment, policymakers can combat past occupational segregation by prioritizing opportunities for continuous skill development throughout workers' careers. This can include ongoing training programs, certifications, and professional development opportunities that allow local workers to upgrade their skills, stay relevant in a changing job market, and advance in their careers. By investing in lifelong learning opportunities, states can support local workers in building sustainable careers in the infrastructure field, contributing to their economic growth and prosperity. More information on how state policymakers can invest in these opportunities can be found under recommendation three.

5 Provide Economic Support and Break Down Barriers

Financial challenges, such as lack of access to affordable transportation or child care, can hinder people from pursuing skills training and employment in the infrastructure industries. Investing in economic supports is critical for states that want to break down barriers to entry into the infrastructure industries, to expand access to skills training and career opportunities in that industry, and to promote diversity and skill development in the infrastructure workforce. By allocating resources to economic supports, states can help level the playing field for all workers, ensuring that they have the necessary resources and opportunities to succeed in the infrastructure sector.

By addressing these barriers through policy changes and targeted investments, states can help people overcome structural barriers to skills training and education, unlock their potential, and contribute to the growth and development of the infrastructure industries. There are a few ways in which states can creatively leverage federal funding, as well as braid in state funding, to ensure current and potential infrastructure workers have the support they need.

CHILD CARE

Child care is a major workforce need that demands significant federal and state investment in order to cultivate a strong, diverse, and multigenerational workforce and connect more working people—particularly women and women of color—to education, training, and quality jobs. Challenges with accessing child care create a barrier to work, especially for women who disproportionately shoulder caregiving responsibilities when their family cannot find or afford child care. In fact, mothers who were unable to find a child care program were significantly less likely to be employed than those who found a child care program.⁶⁰

Nearly 70 percent of mothers with children under 18 who considered leaving the construction trades listed difficulties finding child care as a “somewhat” or “very important” factor for leaving.^{61,62} It’s especially concerning when taking into account analysis that shows women will make up only twenty-nine percent of jobs created by the IIJA, and that women comprise only

Nearly 70 percent of mothers with children under 18 who considered leaving the construction trades listed difficulties finding child care as a “somewhat” or “very important” factor for leaving.



ten percent of the construction industry.⁶³ Child care has been shown to significantly improve the training completion rates for registered apprenticeships—not only for mothers, but for fathers as well. In the case of Oregon’s Highway Construction Workforce Development Program, the state legislated that 504(e) funds be used to provide child care subsidies to apprentices.⁶⁴ This improved completion rates among women and people of color by 21 percent, and completion rates for white men increased by 37 percent.⁶⁵

Child care is so crucial to working people that the U.S. Department of Commerce calls for applicants requesting over \$150 million in direct CHIPS funding to provide both their facility and construction workers with access to affordable, accessible, reliable, and high-quality child care.⁶⁶ As such, it’s paramount that states expand access to child care. The following recommendations are examples of how states can do so:

1. States can use federal funds to expand access to child care for infrastructure workers and trainees:

- **American Rescue Plan Act (ARPA) funding:** In the short-term, states can spend down any remaining American Rescue Plan Act (ARPA) funding to temporarily increase the number of subsidized slots to account for increased demand as infrastructure projects ramp up.
- **Federal surface transportation grants:** As mentioned earlier in the federal overview section, the IIJA includes four large surface transportation infrastructure programs, totaling approximately \$241 billion. The 504(e) provision of the FAST Act, which Congress passed in 2014, was expanded

under IIJA to eliminate spending limitations and enable any and all funds to be used for activities concerning the needs of workforce development.⁶⁷ The Federal Highway Administration provides broader guidance on allowable uses of the funding, but included are supportive services programs in connection with workforce development, training, and education activities, such as child care.⁶⁸ Proposals and concepts by states like Oregon can serve as replicable best practices on how 504(e) funds can be used to develop workforce development strategies that include investments in child care.⁶⁹

- **SNAP Employment and Training (E&T):** States can use SNAP Employment and Training (E&T) funding to provide child care assistance to eligible people participating in SNAP E&T programs, which are designed to help SNAP recipients gain skills and find employment. This can include funding for child care services during training or employment activities, making it easier for women seeking employment in the infrastructure industries to access affordable child care.⁷⁰

- **Temporary Assistance for Needy Families (TANF):** States can set aside TANF funds for child care assistance or subgrant TANF funds directly to community-based organizations so that they can coordinate and pay child care providers who serve parents in work-based learning programs. By directly granting TANF funds to training providers for them to coordinate and administer child care, states can lift a huge administrative burden from parents interested in work-based learning. Training providers may include not only community-based organizations, but also community colleges, if they are willing to dedicate the resources necessary to coordinate and pay child care providers.⁷¹

2. States can make it easier for people to train for and retain good infrastructure jobs by addressing “benefits cliffs.” Students who train for and secure good infrastructure jobs can increase their incomes quickly, particularly in an apprenticeship program, causing them to face a “benefits cliff” where they are ineligible for assistance with child care. States can address this benefits cliff by raising initial income limits for programs or implementing transitional child care using federal CCDF or state funding as appropriate.⁷²



3. States can update their own rules to broaden access to child care for people receiving education and training. If states haven't done so already, they should allow “education and training” to fulfill all activity requirements associated with child care subsidy programs instead of tacking on additional work or activity requirements.⁷³ Work requirements typically have negative consequences, as working or raising children while balancing education or training can lead to reduced levels of engagement while in school and can lower the chances that students successfully complete their education or training.⁷⁴

4. States can also use state and federal funds where appropriate to incentivize child care for nonstandard hours: Working and training for jobs in certain infrastructure industries demands atypical working hours.⁷⁵ States can collaborate with private sector partners, such as businesses, employers, and community organizations, to develop child care solutions for workers or parents working unconventional hours. This can involve subsidizing or incentivizing private child care providers to offer services during non-traditional hours or partnering with employers to create or expand on-site child care facilities within the workplace.

THE MACHINISTS INSTITUTE OFFERS HANDS-ON TRAINING, COMMUNITY INPUT, AND CHILD CARE IN MIND

The Machinists Institute is a nonprofit educational institution founded by the International Association of Machinists District 751 to provide education and training for pre-apprenticeships, registered apprenticeships, and certifications to individuals pursuing a career in industries such as aerospace, manufacturing, and automotive machinery. Their training center is based in the Seattle area, with expansion efforts underway in Eastern Washington and Southwest Washington. Since rural and remote areas are harder to serve, the Machinists Institute supplies mobile trailers that provide outreach and rapid training on job sites in parts of the state that are typically hard to reach or overlooked.

Programs With Partnerships in Mind

The Machinists Institute offers a range of programs designed to prepare students for careers in aerospace,

advanced manufacturing, maritime and supply chain. These programs include both classroom instruction and hands-on training in a state-of-the-art facility. Pre-apprenticeship programs typically take twelve weeks to complete, and the registered apprenticeship programs take four years to complete. Program participants are taught varying levels of skills, such as electrical and hydraulics, and how to service and fix equipment.

Every graduate has been a person of color, with roughly a quarter of graduates being women. The Machinists Institute works alongside community based organizations such as Partner in Employment and the Latino Civic Alliance, which have referred participants to the program from immigrant and refugee communities and Latino communities respectively. Shana Peschek, the executive director of the Machinists Institute, leads efforts in recruitment, education, and training, and



Photo courtesy of Machinists Institute



Photo courtesy of Machinists Institute

stresses the importance of having community based organizations at the table to develop programs that are in lock-step with the needs of the people being served.

The Machinists Institute focuses on student success and is committed to removing barriers so that people can progress in their education and gain access to good jobs that meet good labor standards. A full time student services specialist interacts directly with students to address any challenges they are facing; anything from experiencing transportation issues to needing academic support.

Providing Child-Care for Non-Traditional Hours

For parents with young children, it can be difficult to find child care during the hours they need for careers in these industries due to the nature of shift work. Non-traditional child care services that offer flexible scheduling and extended hours can help alleviate this burden, allowing parents to fully participate in their apprenticeship and career without worrying about how to care for their children.

As the Machinists Institute was being created, Peschek and union leadership discussed the need for child care services to ensure that parents had the support necessary to learn and be trained. Peschek made this a priority and sourced funding from the Washington

Department of Labor & Industries and the Washington State Department of Commerce to support the feasibility and design of an on-site child care center, as well as earmarked money for building or land acquisition. When the center opens, it will be geared toward providing child care during non-traditional hours to better suit the needs of people taking classes or on-the-job training outside of regular business hours - like evenings, weekends.

Hiring Instructors to Meet the Needs of Students

The Machinists Institute intentionally works to hire instructors that match the demographics of their student body—including women, people of color, and bilingual people. Often, they look to the union's rank and file to identify potential instructors. Candidates undergo implicit bias training and are paired with another instructor who can serve as a mentor. Peschek says that this culturally competent hiring is a key component of the program's success because program participants get an instructor that's more relatable and engaged and instructors also have an opportunity to build their skills and take on a new role. "I think recruiting instructors takes a different approach and mindset," Peschek says. "You don't just post a job announcement and say, 'well this is who applied so this is who we are hiring.'"



Photo courtesy of Machinists Institute

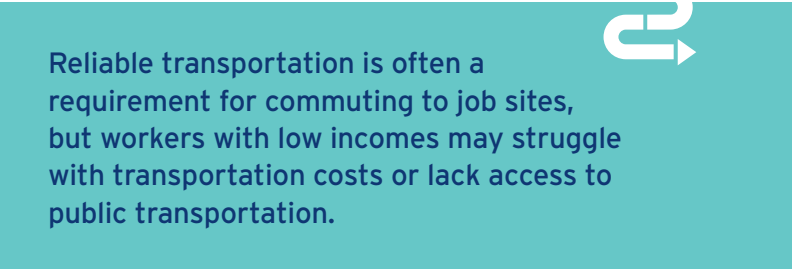
TRANSPORTATION

Without consistent and readily available transportation, workers may face challenges in commuting to job sites, resulting in reduced access to employment opportunities. For instance, reliable transportation is often a requirement for commuting to job sites, but workers with low incomes may struggle with transportation costs or lack access to public transportation. This is particularly problematic in cases where construction sites for new infrastructure projects, such as airports, railroads, or roads, are located beyond the reach of public transportation.

For context, historical residential segregation of low-income families and people of color into disinvested urban areas during periods of White flight has led to pockets of poorer living conditions, isolated from transportation options and job prospects that are more abundant in wealthier, predominantly White neighborhoods.⁷⁶ This residential segregation perpetuates inequities by limiting access to well-paying jobs and education and training opportunities, especially for communities of color.⁷⁷ Furthermore, transportation discrimination can be evident in hiring practices, where workers who rely on buses or other public transit may be overlooked due to a lack of “reliable transportation,” such as a personal vehicle. Unfortunately, this form of discrimination disproportionately affects individuals of color, those with lower incomes, and disabled adults who encounter additional challenges in obtaining and affording driver’s licenses and securing affordable, accessible transportation options on a regular basis.⁷⁸

Some people may also face barriers to employment due to driver license suspensions or overdue tickets. These barriers can result in financial burdens, legal issues, and limited employment opportunities. Because workers are on the front lines of expanding transportation access to remote and underserved parts of the country, there are a few things states can do to ensure workers have reliable transportation to and from job sites that are unreachable by public transit or time-constraining with private cars.

1. States can fund industry sector partnerships to join local and regional transportation agencies, employers, labor organizations, and other stakeholders together to develop and implement transportation programs tailored to the needs of the infrastructure workforce, and to do so in a way that ensures sub-state geographic needs on particular



Reliable transportation is often a requirement for commuting to job sites, but workers with low incomes may struggle with transportation costs or lack access to public transportation.

projects are being met. This can include establishing partnerships for shared transportation services, such as vanpooling, ridesharing, or shuttle services, or leveraging existing public transportation options such as bus passes.

2. States can integrate transportation planning into their overall infrastructure project planning. This can include considering transportation needs and costs for the project’s workforce as part of project budgets and timelines and including transportation components in IIJA grant applications or funding requests.

3. States should develop robust funding streams to cover costs such as bus passes, vehicle repairs, gas vouchers, and mileage vouchers. In California, the legislature sought to address racial and ethnic exclusion and inequity in the labor force by creating the Breaking Barriers to Employment Initiative. The initiative provides state funding to grantees that offer the services necessary—including supportive services such as transportation—for people facing barriers to employment to enter, participate in, and complete broader workforce preparation, training, and education programs.⁷⁹ As mentioned above, WIOA, SNAP E&T, and community college emergency funds or state and federal workforce grants could also be allocated to cover these transportation costs.

Having a suspended driver’s license or overdue tickets and fines can significantly hinder a person’s ability to commute to work, especially in areas with limited public transportation options. License suspensions can result in missed pay or job loss, difficulty in finding employment, and reduced income. Suspensions can also have broader economic and societal impacts such as limiting the labor force for specific industries such as construction trades in which employment is dependent on a valid driver’s license.⁸⁰

Moreover, some jobs require a valid driver's license as a condition of employment. If an employee's license is suspended or they have overdue tickets, they may not meet these job requirements and could be at risk of losing their job or being passed over for promotions or assignments that involve driving.

These transportation-related barriers to employment can disproportionately impact communities that may already face economic and social disparities, including communities of color who are disproportionately policed and pulled over at traffic stops.⁸¹ They can create additional hurdles for people seeking stable employment and economic advancement, making it harder for them to access job opportunities and potentially perpetuating a cycle of financial insecurity. Fortunately, states can remedy this through some policy change options.

1. Some states have implemented driver's license restoration initiatives that automatically reinstate licenses that were suspended solely for unpaid fines and fees. In 2020, Illinois passed the "License to Work Act," which eliminated driver's license suspensions for most non-moving violations and reinstated driving privileges for tens of thousands of Illinoisans.⁸² These initiatives aim to reduce

the impact of license suspensions on employment by removing the barrier of unpaid fines and fees.

2. States can review and revise their fine and fee practices to ensure they are fair and do not disproportionately burden people who are economically disadvantaged. This can involve assessing the affordability of fines and fees, considering alternatives to monetary penalties, and addressing any practices that may contribute to a cycle of debt and license suspensions. Illinois's Safety, Accountability, Fairness and Equity-Today Act, commonly known as the SAFE-T Act, took effect in 2023 and ended driver's license suspensions for failure to pay automated camera tickets, traffic fines and abandoned vehicle fees.⁸³

3. States can implement alternative payment plans for people who are struggling to pay their overdue tickets and fines. These plans can provide more flexible payment options, such as installment plans or reduced payment amounts, to help people manage their financial obligations and avoid license suspensions. In 2021, New York passed the Driver's License Suspension Reform Act, which eliminated suspensions on driver's licenses as a result of unpaid traffic fees and fines, and instituted a payment plan for certain traffic ticket fines, surcharges, and fees.⁸⁴

6 Collect Data on Job Quality, Employment, and Training Outcomes with Attention to Race, Gender, and Geography

In order to assess the success of infrastructure workforce goals, states need to collect and report on data for infrastructure related training and education outcomes, performance related to hiring and advancement, and disaggregated by race, ethnicity, gender, English language proficiency, income, and geography.

Data on job quality, employment and training outcomes, and workforce demographics provides valuable information for state policymakers to make informed decisions about effectively investing in infrastructure projects, jobs and workforce development. It facilitates evidence-based policymaking, resource allocation, and

program development to address the specific workforce needs and challenges faced by different infrastructure sectors, businesses, demographic groups, and regions. For example, data can highlight areas with lower wages, higher unemployment rates, or inadequate job benefits and guide policymakers in directing resources to those areas to create more inclusive and equitable employment opportunities, improve job quality, and invest in high quality skills training.

Collecting disaggregated data also has the power to highlight any discriminatory practices, systemic barriers, or bias that may disproportionately affect certain



groups. It provides empirical information that can be used to make a case for policies and interventions that promote equity and social justice and ensure that opportunities in the infrastructure workforce are accessible to all people, regardless of their race, gender, or location.

Unfortunately, Congress didn't include provisions within IIJA to require recipients of funding to collect data around the workforce undertaking infrastructure projects. However, the Department of Transportation and other major agencies in charge of distributing IIJA funds, are asking grant recipients to include in their applications for funding information on how they intend to measure performance, including reporting on outcomes related to equity in hiring, training, and advancement where appropriate. While these reporting requirements are beneficial to ensuring some level of accountability, it's important for states to be able to understand the impact of these investments not just within separate funding streams, but across, and to evaluate what is working or not and make needed changes to infrastructure projects and workforce programs.

Some of the ways states can develop capacity for data collection and analysis that would help them know if they are truly expanding access to good jobs and fulfilling the potential of the infrastructure laws include:

1. States and regions could develop an infrastructure jobs and workforce equity index that includes key indicators and metrics associated with a state's infrastructure jobs and workforce development goals. Analysis of the indicators and metrics could be used to provide ratings of infrastructure related projects, and the impact they've had on improving job quality and equity in employment and other workforce outcomes. With input from workers, employers, state agencies, and community-based organizations who serve the most impacted and marginalized workers, states can design the related dashboard in a way that also uplifts industry partnership projects, employers, and hiring and retention practices.
2. States should establish a handful of common measures (no more than 6-10) that build on the existing WIOA common measures that every agency and

eligible entity that receives funding for infrastructure job creation and workforce development must report on. These common measures should encompass indicators of job quality and equity, as well as program outcomes (program graduation rates, job placement rates, wage levels, type of credentials/certifications earned, and occupations trained for) and system outcomes, such as partners engaged, programs designed and launched, curricula created, number of training slots created, etc.

3. Where appropriate, states can utilize infrastructure related grant funding or allocate additional state funding to invest in data infrastructure, such as data management systems and data analytics tools to specifically report on infrastructure project funding including how many jobs are being created, what kind of training is being offered, and if the training provided and jobs created are benefitting traditionally underrepresented populations. These investments can support the collection and analysis of data related to infrastructure projects funding, job quality, employment and training outcomes, and workforce demographics. Robust data infrastructure is essential for ensuring accurate, reliable, and accessible data collection, analysis, and reporting.
4. States can work with their state labor market information offices, as well as state labor and education agencies, to analyze available labor market and program administrative data on the infrastructure workforce and related education and training programs. States can also collaborate with research institutions, such as universities, think tanks, and nonprofits, to conduct research and analysis on infrastructure projects happening in different regions and communities. These collaborations can help states access local expertise and resources for qualitative and quantitative data collection, analysis, and interpretation. Research institutions can often provide insights into best practices for conducting project and program related evaluations, including engaging a diverse mix of stakeholders to report on their experiences and outcomes associated with these investments and to generate actionable recommendations for policy and programmatic improvements.
5. Where appropriate, states can utilize infrastructure related grant funding or allocate additional state funding to enhance data sharing and reporting mechanisms. This can include developing data sharing agreements with relevant stakeholders, such as employers, industry associations, and workforce development agencies, to collect data on job quality, employment outcomes, and demographics. States can also invest in data reporting tools and platforms to make data accessible to policymakers, employers, researchers, and the public in a user-friendly manner. Transparent data sharing and reporting mechanisms can promote accountability and aid in evidence-based decision-making. The Minnesota DEED (Department of Employment and Economic Development) economic recovery dashboard is a good example of ways in which states can report on metrics around labor participation, unemployment, and demographics.⁸⁵
6. If states haven't done so already, they can create surveys, questionnaires, and other data collection tools that capture qualitative and quantitative data and information from workers, businesses, contractors, workforce development entities, community-based organizations, and others with some stake and experience in how these infrastructure workforce investments are impacting job quality and equity, employment and training outcomes, workforce advancement, and business competitiveness. These initiatives can be designed in collaboration with relevant stakeholders to ensure comprehensive and relevant data collection.

REGISTERED APPRENTICESHIP AND WORKFORCE PROGRAMS AT COMMUNITY COLLEGES CAN EXPAND ACCESS TO SKILLS TRAINING.

In 2022, the Virginia Community College System (VCCS) launched the Virginia Infrastructure Academy (VIA). The program coordinates efforts of Virginia's 23 community colleges to train thousands of workers for high-demand jobs in the infrastructure sector, such as building roads and bridges, solar panel installation, and fiber broadband expansion. While VIA currently relies on private philanthropy, corporate dollars, and state and federal investments, VCCS is prepared to apply for Infrastructure Investment and Jobs Act (IIJA) grants to support the growing demand for a skilled infrastructure workforce. Directing additional funds to these programs - particularly those that intentionally engage industry leaders, collect outcomes-focused data, and provide economic supports for students—can help more people of color, women, and young people access in-demand, quality infrastructure jobs that today's economy requires.

While VA community colleges have offered skills training programs in the infrastructure field for some time, VIA coordinates efforts amidst massive federal investments in infrastructure to better leverage resources, expand collaboration, and streamline efforts. VCCS started developing the program with the help of a steering committee made up of community college workforce staff, trade associations, and major businesses in the state.

The steering committee worked on three primary objectives: finalizing a shared curriculum, identifying the greatest workforce needs, and setting up students for success.

First, by engaging industry representatives on the steering committee, VCCS developed a set of shared core competencies and specialized skills for in-demand infrastructure jobs. Together, the steering committee analyzed existing FastForward programs—Virginia's current set of grant-funded, short-term training programs—to determine what colleges already do well, to identify what types of training programs or classes might be missing, and to figure out how colleges and businesses could best communicate. From there, they developed a set of core competencies and credentials that give students the skills they need for entry-level infrastructure jobs. Once students are hired, the colleges work with employers to move students through pathways to more technical, higher-paying infrastructure careers.

Using Data to Identify Skills Training Needs & Make the Case for Further Investments

VCCS used quantitative and qualitative data to identify the most in-demand jobs by region. The steering committee helped lead nine regional meetings with businesses and local colleges to do a gap analysis answering the following questions:

- What are the primary workforce needs?
- What skills do workers already have?
- Does the quantitative data match the experience of colleges and businesses?

Through these conversations, VCCS determined the highest priority programs and identified where different programs should be located. For example, most solar training programs should be located on the south side of the state due to large Dominion Energy solar projects in the region. Eastern Virginia, on the other hand, has a large need for road building and repairs. The gap analysis paired state data on high-demand jobs with qualitative data on the experiences and needs of colleges and businesses to best target and align programs. This work demonstrates the need for comprehensive and



Photo courtesy of Virginia Community College System



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accessible state data systems to maximize the outcomes of IIJA funds.

VCCS also works with the Virginia Economic Development Partnership's Office of Education Economics (VOEE) and the Virginia Employment Commission (VEC) to track long-term data outcomes. Typically, VCCS has tracked student outcomes during the 6-18 months after a student graduates, but these new partnerships will allow VCCS to track outcomes over the course of several years—including average salaries of students before entering the program, how many students complete programs, and what jobs they get. In addition, VCCS will be able to disaggregate the data by race, ethnicity, and gender, facilitating VCCS's ability to demonstrate the long-term gains for these students and evaluate how VIA programs advance racial equity. Strong state data systems can help determine if high quality infrastructure training programs lead students, and especially students of color, to quality infrastructure careers.

Embedding Student Supports Within the VIA Experience

Students connect with navigators from the point of application. Navigators, who function as a coach and advisor for students, might support students in filling out the Single Stop questionnaire, which can quickly

link students with supplemental resources and connect them to the full range of local, state, and federal public assistance programs. Navigators can also help students understand credit for prior learning (CPL) opportunities. State funds make these supports possible, but VCCS also relies on private philanthropy. This demonstrates the need to change state policies that restrict access to supportive services for students.

VIA lays the groundwork to coordinate local college efforts amidst massive federal investments in infrastructure to better leverage resources, expand collaboration, and streamline efforts. Thus far, VCCS has successfully engaged industry to finalize a shared curriculum, used data to identify the greatest workforce needs, and provided the wrap-around supports that students need to succeed. Thanks to the VIA planning process, VCCS is prepared to apply for IIJA grants and Broadband Equity, Access, and Deployment (BEAD) program grants. At the state level, VCCS has prepared community colleges to apply for Department of Housing and Community Development Go Virginia Grants, state-funded regional workforce development grants. VIA demonstrates the importance of collaborations between community colleges, industry, and state government to maximize the use of federal funding.



Photo courtesy of Virginia Community College System

APPENDIX

1. National Highway Performance Program State-By-State Breakdown in Funding <https://www.fhwa.dot.gov/bipartisan-infrastructure-law/comptables/table3p1-1.cfm>
2. Surface Transportation Block Grant Program State-By-State Breakdown in Funding <https://www.fhwa.dot.gov/bipartisan-infrastructure-law/comptables/table4p1-1.cfm>

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