

## Reversing America's Poor Track Record on Inclusivity in Infrastructure Jobs

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Article DOI: 10.48028/iiprds/rjhlsid.v5.i1.05

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### Abstract

More than a year since the COVID-19 recession began, the economic recovery is gaining momentum. Businesses and schools are reopening. Incomes and consumer spending are up. Households are traveling and getting out more. However, the deep and uneven impacts of the recession still surround us, especially for the millions of workers who remain jobless and left behind. Leaders in Washington, D.C. and across the country realize the importance of focusing on both the pace and equity of economic recovery. Proposals to boost incomes, build affordable housing, and bridge digital divides are attempting to help more people and places. President Joe Biden's American Jobs Plan and American Families Plan outline several major steps to support such a recovery, not only focusing on physical infrastructure upgrades to stimulate economic growth, but also emphasizing the importance of training and recruiting infrastructure workers to support a more enduring, equitable 21st century economy.

**Keywords:** *Reversing, America, Poor track record, Inclusivity, Infrastructure, Jobs*

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First Published: <https://www.brookings.edu/research/reversing-americas-poor-track-record-on-inclusivity-in-infrastructure-jobs/>

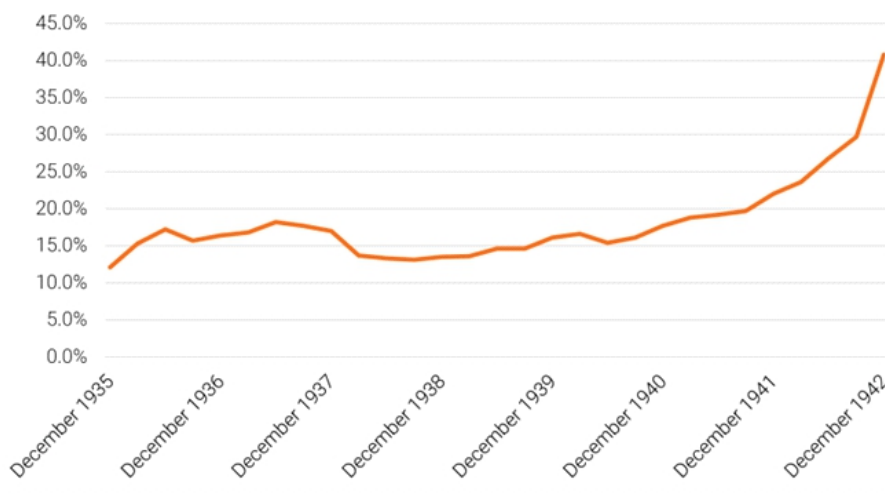
### **Background to the Study**

Leaders in Washington, D.C. and across the country realize the importance of focusing on both the pace and equity of economic recovery. Proposals to boost incomes, build affordable housing, and bridge digital divides are attempting to help more people and places. President Joe Biden's American Jobs Plan and American Families Plan outline several major steps to support such a recovery, not only focusing on physical infrastructure upgrades to stimulate economic growth, but also emphasizing the importance of training and recruiting infrastructure workers to support a more enduring, equitable 21st century economy. These generational investments in the nation's transportation, water, energy, and broadband systems demand a careful look at who will be constructing and operating them for decades to come. From electricians and traffic technicians to civil engineers and water treatment operators, 17 million workers are directly employed in infrastructure. They tend to earn higher wages, require lower levels of formal education, and many are retiring, presenting a huge window of opportunity. Past infrastructure investments have failed to reach workers across all races, genders, and backgrounds; we cannot afford to repeat that mistake in the wake of another recession. Rather than fixating on “what is infrastructure,” federal policymakers need to focus on ensuring equitable access to opportunities created through an infrastructure stimulus. Ideally, policies can encourage additional training and recruitment among those who have been hit hardest by the recession and could economically benefit most, including women and workers of color.

### **A Lack of Inclusion in Past Federal Infrastructure Stimulus Efforts**

A focus on inclusivity in infrastructure jobs would mark a historical turning point for people often excluded from past infrastructure stimulus efforts. One such effort, the Works Progress Administration (WPA) of the 1930s and 1940s is often cited as the most successful infrastructure and jobs initiative in American history; however, not all workers got a fair New Deal. Throughout the duration of the program, only between 12% and 18% of WPA workers were women, despite accounting for 25% of the civilian labor force. Over 85% of WPA employees were white. And while the WPA stated that individuals with disabilities “were not to be disqualified per se as unemployable,” too few jobs were made available to these workers. Instead, most WPA workers like most infrastructure workers today were white and male.

**Figure 1. Share of women in the Works Progress Administration, 1935 to 1942**



Source: Final report on the WPA program, 1935-43 data



WPA employment increased for women and workers of color over time, as white male workers left the WPA rolls for the private sector. While acknowledging labor market discrimination, the WPA perpetuated the practice through its own hiring, claiming in its 1947 final program report that “the proportion of WPA workers who were found qualified for training in the WPA vocation program was much smaller” among Black workers, and that many female workers were “experienced only in domestic work.”

These phrases sound familiar today, with inequitable access to workforce opportunities often framed as a “skills gap.” As our country continues the tradition of infrastructure stimulus, policymakers have an opportunity to address a legacy of racism, sexism, and ableism.

**Figure 2. Share of employment in the Works Progress Administration, by race and gender**



Source: Final report on the WPA program, 1935-43 data. Source data include limited racial data for other groups, such as Hispanic or Latino workers. In both February 1939 and October 1942, data include 0.4% of workers classified as “Other.”



### Infrastructure's Lack of Gender and Racial Diversity, By the Numbers

Today, an infrastructure stimulus has the potential to connect more and different types of workers to good careers. Infrastructure jobs tend to have lower educational barriers to entry and higher wages, especially for workers just starting out or who are at the lower end of the wage distribution. These workers also gain valuable on-the-job training and develop transferrable skills, leading to long-term career growth. And with nearly half of the current infrastructure workforce over the age of 45 compared to 43% of workers in all jobs nationally, employers will soon be hiring a new generation of talent that may be just launching their careers or shifting from other sectors of the economy. Despite these broad-based opportunities, the current infrastructure workforce is sorely lacking in gender and racial diversity. While 49% of all workers nationally are women, only 18% of infrastructure workers are women. Moreover, in 20 of the largest infrastructure occupations, less than 5% of workers are women. And much like the economy as a whole, women in infrastructure positions also face a gender wage gap: They earn 91 cents for every dollar male workers make as transportation managers and logisticians, and 88 cents for every dollar as material movers. The relatively smaller pay gaps in civil engineering and similar fields have shown that, in many cases, accessing male-dominated career pathways can facilitate financial stability for women workers; additional research on gender wage gaps has also pointed to the importance of unions, which tend to appear in many infrastructure industries.

**Figure 3. Gender pay gap in selected infrastructure occupations, 2020**

Women's earnings as a per-dollar share of men's earnings



Source: Brookings analysis of BLS Current Population Survey data.  
 Note: Gender pay gap represents the median weekly full-time wage and salaries for women divided by the median weekly full-time wage and salaries for men by occupation. Occupations reflect the 2018 Census occupational classification system.

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Many infrastructure occupations also lack racial diversity, particularly among Black and Latino or Hispanic workers. More than three-quarters of highway maintenance workers, electrical power line installers, and power plant operators are white. This is also true among higher-paying occupations such as commercial pilots, hydrologists, and nuclear engineers. Where they do appear, Black and Latino or Hispanic workers tend to fill lower-paying infrastructure occupations. Nine out of the 10 infrastructure occupations employing the highest shares of Latino or Hispanic workers (and seven of the 10 with the highest shares of Black workers) pay below the infrastructure sector's median hourly wage of \$21.47. The career

pathways that facilitate access to higher-paying infrastructure occupations need to be more readily accessible to all workers.

**Figure 4. Top ten occupations by share of Latino or Hispanic and Black workers, 2019**

Occupation	Share Latino or Hispanic	Median Hourly Wage	Occupation	Share Black	Median Hourly Wage
Packers and Packagers, Hand	36.8%	\$12.46	Subway and Streetcar Operators	36.3%	\$32.63
Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	35.1%	\$15.43	Bus Drivers, Transit and Intercity	32.9%	\$20.69
Helpers--Electricians	34.0%	\$15.78	Passenger Attendants	32.8%	\$12.78
Solar Photovoltaic Installers	31.9%	\$21.58	Transportation Security Screeners	27.7%	\$20.08
Hazardous Materials Removal Workers	29.3%	\$21.11	Passenger Vehicle Drivers, Except Bus Drivers, Transit and Intercity	25.9%	\$15.07
Material Moving Workers, All Other	25.9%	\$15.28	Industrial Truck and Tractor Operators	25.8%	\$17.40
Industrial Truck and Tractor Operators	24.1%	\$17.40	Refuse and Recyclable Material Collectors	24.7%	\$18.19
Forest and Conservation Workers	21.6%	\$15.27	Rail-Track Laying and Maintenance Equipment Operators	24.1%	\$26.97
Refuse and Recyclable Material Collectors	21.5%	\$18.19	Rail Transportation Workers, All Other	23.5%	\$24.81
Transportation Security Screeners	21.3%	\$20.08	Aircraft Service Attendants and Transportation Workers, All Other	23.0%	\$17.79
<b>All Infrastructure Occupations</b>	<b>18.2%</b>	<b>\$21.47</b>	<b>All Infrastructure Occupations</b>	<b>16.6%</b>	<b>\$21.47</b>

Note: Racial shares for "all infrastructure occupations" are based on weighted occupational totals and may not reveal nuances within the larger infrastructure sector.  
Source: Brookings analysis of EMSI data.



### Empowering a More Diverse Generation of Infrastructure Workers

In order to truly “build back better,” federal policymakers need to ensure that a variety of infrastructure career pathways not just short-term jobs are accessible to all types of workers. As the Biden administration's proposals continue to generate debate on Capitol Hill and elsewhere, policymakers have a timely opportunity to help employers, workforce development groups, community organizations, and other leaders expand the reach of infrastructure career pathways for more people in more places. Some ways to do this include:

1. *Expose more and different types of Individuals to Infrastructure Careers.* Many infrastructure jobs lack visibility among younger students, women, and workers of color, even though they are crucial to managing our climate concerns, promote lifelong learning in a variety of in-demand technical skills, and offer widespread on-the-job training opportunities. For instance, despite similar test scores throughout elementary, middle,

and high school, women are 25% as likely as men to enroll in STEM fields of study for college due to a variety of social barriers and internalized bias, and they may not pursue infrastructure-related fields as a result. Demonstrating the value of these careers needs to start earlier and more often while providing experiences that are affirming and validating. Programs such as Girls Build are already doing this important work, and community youth programs from Girl Scouts to 4-H are beginning to integrate affirmative STEM programming into their curricula. A new Civilian Climate Corps could offer opportunity to the next generation of infrastructure workers, but it must center inclusion. Demonstration projects and public outreach by water utilities and other local leaders are also revealing how infrastructure can serve as a shared community asset.

Federal leaders need to prioritize and expand funding for these types of outreach and training efforts. The American Jobs Plan emphasizes the importance of connecting underrepresented students to STEM and infrastructure occupations through middle- and high-school-level career pathway programs and “partnerships with both institutions of higher education and employers.” Enhancing federal funding and programmatic support for sector partnerships in infrastructure would offer one way to help employers, community partners, and other regional leaders as they coordinate on future plans.

2. *Boost flexible work-based learning opportunities.* Investments in workforce development programs need to provide more accessible training opportunities for a broader range of workers. That means supporting on-the-job training and applied learning opportunities that may be shorter in duration, convenient to physically reach (via public transportation), and geared toward the needs of nontraditional workers that face other social barriers. Particularly visible over this past year has been the need for caregiving and family leave policies to facilitate equitable career access for women. Work-based learning opportunities such as registered apprenticeships or incumbent worker training are essential to do this, but currently reach less than 1% of Workforce Innovation and Opportunity Act (WIOA) adult and dislocated worker trainees. Pre-apprenticeships and internships are also important in supporting these efforts.

The American Jobs Plan proposes increased investment in the Women in Apprenticeships and Nontraditional Occupations program, through which the Department of Labor's Women's Bureau administers grants to community-based organizations that provide accessible on-ramps to nontraditional careers for women. While the plan also proposes \$40 billion toward a “new Dislocated Workers Program and sector-based training,” federal policymakers will need to explicitly center workers of color and women in these programs, working collaboratively with regional leaders to build off emerging plans and initiatives already happening in the infrastructure sector.

3. *Make infrastructure workplaces more welcoming spaces.* Women working in male-dominated jobs experience more sexual harassment and discrimination than women working in female-dominated jobs, with less access to mentors and other workplace allies. The persistently low share of women and people of color working in the

infrastructure sector not only reflects inequitable access to career pathways, but may also result from all those individuals pushed out of workplaces due to harassment and discrimination.

Strong worker protections are essential to ensure a welcoming workplace for a more diverse range of infrastructure workers. To that end, President Biden has signaled his support of the Protecting the Right to Organize (PRO) Act. Further federal actions should also include the intentional development of ambassadorship programs such as the Department of Energy's Equity in Energy Ambassadors and Champions to welcome underrepresented workers into infrastructure careers. State-level policy can support the development of essential mentorships and other positive relationships with adults through work-based learning as students begin their journey into infrastructure careers. Finally, employers and workforce development intermediaries need to clearly communicate and enforce policies protecting workers from discrimination, sexual harassment, and retaliation.

The White House says the American Jobs Plan will “ensure that new jobs created in clean energy, manufacturing, and infrastructure are open and accessible to women and people of color.” But addressing the historic inequities of past infrastructure investments will require more than simply making jobs “open and accessible” to these workers now although it is a start. Future infrastructure investments hold enormous potential in expanding economic growth, but ensuring this growth is equitable and enduring hinges on our ability to learn from the mistakes we've made in past infrastructure stimulus efforts. connections among cities across the world are deepening through the flow of goods, people, technology, and ideas, bringing increased economic opportunity. Cities are also becoming more interconnected through international diasporas, multinational companies and supply chains, and worldwide communications and travel networks. As one indication, the aggregate amount of transnational investment, services, and trade in goods increased globally from \$5 trillion in 1990 to \$30 trillion in 2014 (growing from 24 to 39 percent of world GDP). The interconnectedness of citizens, both physically and electronically, leads to ripple effects: what happens in one locale can quickly affect a distant locale too.

While these movements of people, goods, and ideas create new opportunities and have positive implications, they also create vulnerabilities. Cities in the United States and around the world find themselves at the nexus of society's most pressing issues, including terrorism, transnational violence, civil and ethnic unrest, organized crime, and technology-based crime, such as cyber threats. Securing cities may be emerging as the central challenge of our day. Security for the individuals, communities, businesses, infrastructure, and institutions making up urban areas is crucial in its own right. It is also fundamentally important for economic growth and for cities to thrive. Some places can advance economically even while experiencing sustained high levels of violence, at least to a degree. But it is difficult to entice investors, inspire innovators, and keep mobile workforces' content without a basic degree of safety.

It is these realities that have driven us to focus on the intersection of economic growth, security, and stability, building on the Global Cities Initiative, a joint project of Brookings and

JPMorgan Chase. Through conversations with hundreds of practitioners, academics, civic leaders, and government officials over the course of the past year, dialogues that took place in a dozen cities in five countries, several best practices and principles that should inform the urban security mission has been identified.

## **Major Findings**

### **1. Continue to Refine Community Policing**

Community policing is foundational in the urban security enterprise. It has helped drive major reductions in crime rates not only in many U.S. cities, but also in other countries from Latin America to Europe and beyond. It is also crucial in the fight against transnational crime and terrorism, largely for the intelligence it can provide when communities feel engaged in helping ensure their own safety. The concept includes methods such as: decentralized organization of police with delegation of authority; stable assignments of officers in certain beats and neighborhoods, to foster relationships and communications; an emphasis on crime prevention rather than response (for example, patrolling more heavily in places and at times when crime is otherwise most likely to occur); analytics designed to identify and highlight patterns of crime, allowing for targeted strategies at the local level to address high-risk areas; and encouragement of assistance from the broader community, including local businesses in identifying dangers as well as solutions to crime. Other simple tactical innovations have helped too, such as enhancing confidence and safety in public places like parks. Close cooperation between police and prosecutors is also important for ensuring that the latter are invested in cases, and that the former understand what kinds of evidence will hold up in court. Finally, sentencing as well as prison conditions need to be designed with the goal of lowering future crime rates. Ultimately, community policing and related activities need to shore up the rule of law and citizen security as preeminent concerns.

### **2. Break down Stovepipes**

Collaboration is needed to share intelligence and to address cross-jurisdictional threats, particularly for the purposes of stopping terrorism, but also for taking on organized crime and transnational criminal networks. Police forces need to work closely with national-level intelligence or security agencies, like MI5 in the United Kingdom and the FBI and CIA in the United States. This means, for example, determining which agencies take the lead on surveillance and on arrests, which are responsible for tracking any given suspect, how to obtain security clearances for some police officers, and how regular beat-patrol policemen can help provide information about suspected terrorists through their normal jobs, even without extensive specialized training. Information sharing also requires compatible and secure cyber systems across different agencies, necessarily imposing further demands on resource requirements for the public safety mission. In a number of countries, a recent history of terrorist attacks has motivated authorities to cut through bureaucratic resistance and demand cooperation in these ways. Sometimes, however, authorities have acted even in the absence of a major catastrophic experience, though this takes decisiveness and foresight, and excellent leadership. Either way, once established, collaborative mechanisms and patterns of behavior need to be institutionalized and perpetuated.



### **3. Establish clear Strategies against Organized Crime**

In dealing with narcotics traffickers and other sophisticated, often transnational, criminal organizations, priorities are needed to sustainably reduce violence. Authorities can preferentially target those gangs, groups, or organizations that are the most violent. This latter tactic can weaken the worst of the worst, while also deterring the excessive use of violence by other organizations. Another key choice in attacking criminal networks and terrorist organizations is whether to target just the top leadership of these organizations, or instead to develop a more patient strategy emphasizing action against mid-level operatives. Evidence suggests that the latter approach is usually more effective. There can be times when removing one key leader makes a big difference (arguably this was true for Pablo Escobar in Colombia, the Shining Path movement in Peru, and to some extent al-Qaida). But it is generally important to extend targeting down a layer or two in an organization.

### **4. Exploit new Opportunities from Technology**

Technology can aid criminals in protecting the content of their communications from authorities. Technology also creates new vulnerabilities, notably in the cyber realm. But it offers great advantages to police forces and other security organizations too. Helpful technologies include inexpensive closed-circuit TV, facial recognition technology, license-plate readers, smart phones and GPS trackers for police cars, acoustic gunshot detection systems and other advanced sensors, and unmanned aerial vehicles. Yet where technology has been effectively deployed, it has not been at the expense of officers on patrol. We found no examples of cities that were successful in fighting crime and terrorism unless they simultaneously maintained or increased police personnel and focused intensively on the quality and training of those personnel.

### **5. Promote Social Cohesion**

To gain support from communities and address the root causes of crime and terrorism, authorities must promote social cohesion as a central element, not an afterthought of the urban security effort. The neighborhoods and demographic groups most affected by crime and violence must be treated as essential allies. Moreover, education and employment opportunities must be expanded in urban areas suffering from lack of opportunity and hope in order to address the root causes of crime. Our research has uncovered several creative ideas, for example, using fire departments or national army outreach efforts in places where police departments may not be easily trusted, and engaging formerly incarcerated individuals or rehabilitated former members of violent gangs or groups to reach out to disenfranchised communities. The private sector can make inclusion a priority in hiring and retention policies. Public-private partnerships can also help steer private funds and energies to programs that promote inclusion.

### **6. Prepare for “Black swan” Events**

Beyond dealing with omnipresent threats, it is crucial to be as ready as possible for one-time catastrophes. Most cities may never experience truly horrific events, but it is important not to take solace in such probabilities, and to prepare for disasters before they occur. Those catastrophes could be purely natural. They could also become complex emergencies that

superimpose themselves upon, or help to create, violent or anarchic security conditions. They could take place in cities already suffering significant violence; they could also produce shocks that create a breakdown in order. Given the growth of megacities, they could also easily affect 10 times as many people in a single incident as have been directly threatened by the world's 21st century natural catastrophes to date. The private sector can have a role here too as in Manila in the Philippines, where a consortium of utilities and other companies has organized to help authorities in emergencies, with a single point of contact and clear coordination channels.

### **Conclusion**

This paper attests to many examples of where infrastructure is working already and argues strongly for expanding such efforts in the future. The importance of public-private collaboration bears emphasis in any summary of the core principles of the urban security enterprise.

### **Reference**

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