



U.S. Department
of Transportation

Office of the Secretary
of Transportation

INVESTING IN AMERICA:

Best Practices to Expand Access
to Jobs and Economic Opportunity
Through Transportation Infrastructure
Investments



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Investing in America:

Best Practices to Expand Access to Jobs and Economic Opportunity Through Transportation Infrastructure Investments

The Bipartisan Infrastructure Law (BIL) is the largest investment in infrastructure in recent history and is expected to create millions of jobs across the transportation industry including jobs in construction. Already, a little over two years into implementation, [the economy has added 670,000 construction jobs](#) with the sub-sectors that are heavily impacted by BIL funding like heavy and civil engineering showing the fastest growth. To ensure these investments expand economic opportunity to underserved communities, BIL directed the U.S. Department of Transportation (DOT) to develop a report to Congress that details the barriers for underrepresented populations to access construction jobs and to create recommendations for states and local jurisdictions on how to expand access to jobs in the construction workforce.

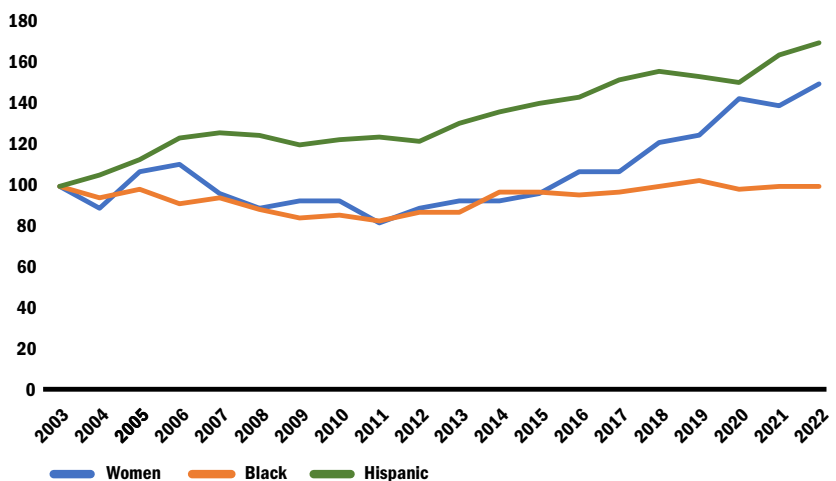
As construction ramps up on the first round of major projects funded by BIL, now is the time for state and local transportation agencies to implement policies and programs that will expand access to construction jobs on their projects. There has already been some improvement in gender and ethnic diversity in construction. Intentional efforts can accelerate these trends and begin to increase racial diversity.

This report includes detailed recommendations on how state and local transportation agencies can expand access to jobs and opportunity for several underrepresented groups including women, young people, justice-involved, and people of color. This

report also explains how DOT has been successful in getting more transportation agencies to include workforce plans for their projects and to make use of tools such as local and economic hiring preferences.

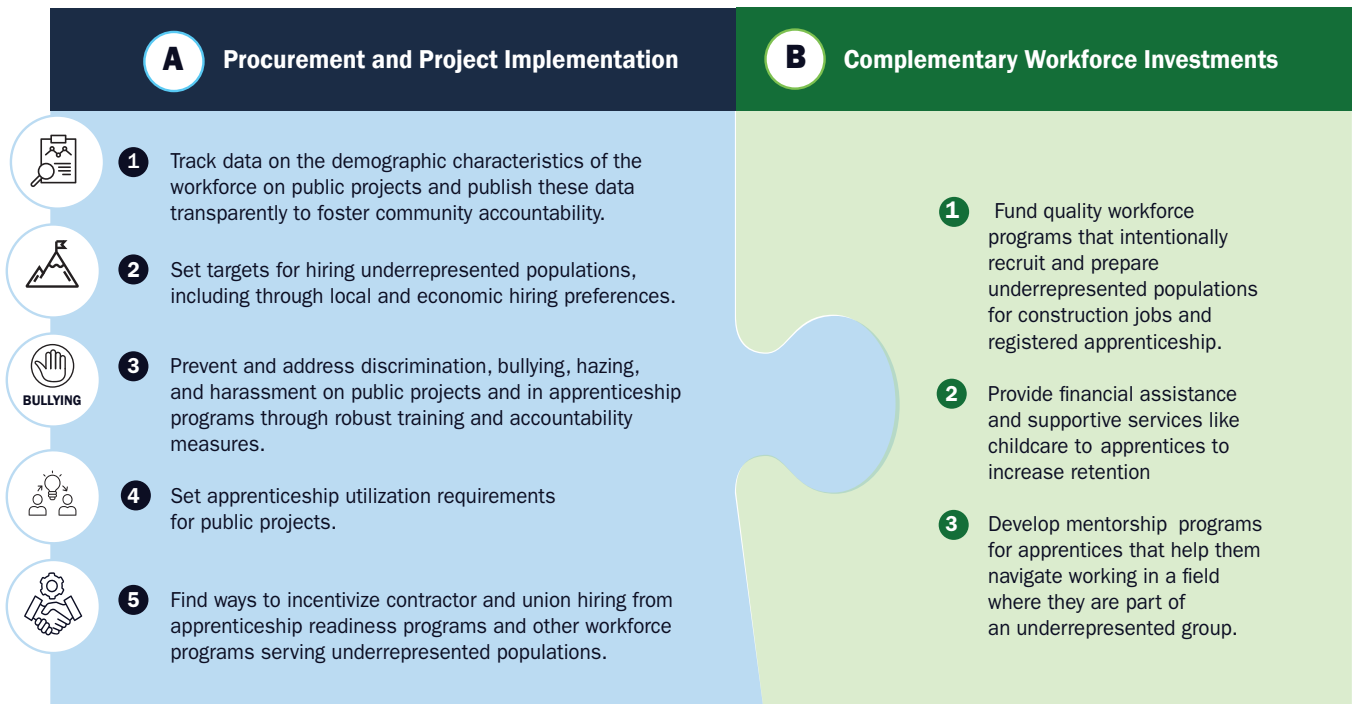
With the release of these recommendations, DOT plans to provide technical assistance and guidance to state and local leaders to further the adoption of these policies and programs that will expand economic opportunity.

Growth Over Time of Share of Workers In Construction and Extraction Occupations that are Hispanic, Black, and Female, 2003 to 2023 Comparison to 2003 Levels



Recommendations for State and Local Transportation Agencies to Enhance Construction Workforce Diversity

Based on interviews with cities and states that have seen increases in the diversity of the construction workforce on their projects, DOT recommends that state and local transportation agencies including, highway agencies, ports, transit agencies, and other DOT-funded entities, take the following actions to expand economic opportunity as they implement construction projects. The figure below separates recommendations into those that must be implemented through the procurement and project implementation by transportation agencies and those that can be implemented separately as complementary workforce policies. The report provides examples of how these policies are working in the following jurisdictions: Kansas City, Illinois, Los Angeles, New Orleans, Oregon, Philadelphia, San Francisco, Seattle, Syracuse, and Vermont.



Characteristics of Quality Workforce Programs that Get Underrepresented Individuals into Construction Jobs or Apprenticeships

Based on interviews with non-profits with success in getting underrepresented populations into construction careers, DOT has identified eight characteristics of quality workforce programs and additional characteristics that are necessary to adequately serve particular sub-populations including: opportunity youth, individuals with justice system involvement, women, and workers with disabilities. Profiles of quality workforce programs are included from the following cities. Baltimore, MD; Birmingham, AL; Boston, MA; Chicago, IL; Houston, TX; Milwaukee, WI; Minneapolis, MN; San Diego, CA; and Seattle, WA.



For All Underrepresented Populations:

1. Strong partnerships between industry (unions and employers) and community-based organizations
2. Individualized case management
3. Sufficient funding for supportive services, especially help accessing a personal vehicle and driver's license for work travel
4. Stipends for time in training
5. Mentorship
6. Exposure to variety of construction careers
7. High quality training developed with industry partners that includes hands-on experience, offered through the program or separately
8. Tracking results by demographics



Individuals with justice system involvement:

- Mental health support
- Engaging family and social network to prevent recidivism
- Industry partnerships that address stigma and bias against population



For Opportunity Youth:

- Job readiness skills
- Support attaining high school equivalencies or other academic credentials



For Workers with Disabilities

- Advocacy to employers about the skills of workers with disabilities
- Use of adaptive technology in training
- Support for employers on providing accommodations



For Women

- Supportive services that include affordable, high-quality, accessible, reliable childcare

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Introduction

The Bipartisan Infrastructure Law (BIL) is the largest investment in infrastructure in recent history and is expected to create millions of jobs across the transportation industry including jobs in construction. Already, a little over two years into implementation, the [economy has added 670,000 construction jobs](#) with the sub-sectors that are heavily impacted by BIL funding like heavy and civil engineering showing the fastest growth.

The growth of these jobs represents an important opportunity to increase access to good-paying jobs that do not require a college degree. Infrastructure jobs pay more than jobs in other sectors with similar education requirements. Even the lowest paying jobs within infrastructure pay 30 percent more than low-paying jobs in other sectors.¹

Expanding access to good-paying infrastructure jobs with free and fair choice to join a union is a primary goal of the Biden-Harris Administration's implementation of the Bipartisan Infrastructure Law and is included in the [Executive Order on Implementation of the Infrastructure Investment and Jobs Act](#). Using these jobs as a way to build economic opportunity and wealth in underserved communities is also a goal of [DOT's FY 2022-2026 Strategic Plan](#) and the Equity Action Plan.

Congress also included access to infrastructure jobs as a priority for implementation of the Bipartisan Infrastructure Law as reflected by a number of studies on job growth and job task forces that are part of the law. This report is written to respond to section 25019 of the Bipartisan Infrastructure Law (BIL), which directed the U.S. Department of Transportation (DOT) to develop a report to Congress on barriers to employment for populations underrepresented in the construction workforce and ways to overcome those barriers. DOT was also directed to create model plans for states and local governments to enhance diversity in the construction workforce.

The statute called out two specific populations for whom barriers need to be addressed—individuals reentering from incarceration and individuals with a disability—and directed DOT to address other underrepresented populations as well.

This report responds to this Congressional request, examining the barriers for underrepresented populations to enter into construction jobs including women, Black workers, individuals with justice involvement, individuals with a disability, and opportunity youth (individuals that are 16 to 24 years old and are disconnected from school and work). The report assesses what has made transportation entities and non-profits successful in bringing these underrepresented populations into construction jobs to formulate model plans for states and local jurisdictions. As directed, these model plans specifically address how local and economic hiring preferences, pre-apprenticeship, and registered apprenticeship can advance the goal of enhancing diversity in the construction workforce.

1 <https://www.brookings.edu/articles/infrastructure-workforce/#:~:text=Infrastructure%20occupations%20pay%2030%25%20higher%20wages%20to%20workers%20at%20lower,all%20occupations%20at%20these%20percentiles>

This report is organized in the following manner.

Section I provides background on the current construction workforce and changes in the percent of women, workers of color, and other underrepresented populations over time. This section also uses U.S. Department of Labor (DOL) data to show the increase in diversity among registered apprenticeship programs over the past five years.

Section II provides the model plans for states and local governments, with a focus on the steps that transportation agencies can take to advance diversity in the construction workforce. These model plans are based on interviews with transportation agencies and workforce programs that could provide data showing that they had successfully increased the diversity of the construction workforce along some dimensions. All interviewees were asked what strategies and program components led to the results they have witnessed. The model plans present the top strategies and program components that were mentioned across all of these entities. In addition, DOT has summarized the characteristics of model workforce development programs that prepare underrepresented populations for jobs and apprenticeship. There are characteristics that are important for all underrepresented populations as well as group-specific characteristics that are key for the following sub-populations: women, opportunity youth, people with disabilities, and people reentering from incarceration.


Section III focuses on local and economic hiring preferences. This section presents information on entities that use hiring preferences and could provide data showing whether or not they have met hiring targets and how diversity increased. The section includes short case studies for each of these jurisdictions highlighting where each jurisdiction has experienced success, successful strategies employed, and challenges. This section also reviews the common practices of these effective local hire strategies. Finally, section III includes information on how the DOT's efforts to encourage local and economic hiring preferences have expanded the prevalence of these policies.

Section IV provides greater detail on the barriers particular underrepresented populations face and strategies to address these barriers. For three populations—women, opportunity youth, and people with disabilities—these summaries were written by Fellows from the Harvard Project on as part of a student agreement with the DOT. These fellows interviewed organizations that have been successful at helping members of these subpopulations get jobs in the construction industry. DOT has worked closely with DOL to identify barriers for individuals reentering from incarceration and examples of interventions that are successful in addressing these barriers.

Appendix A at the end of the report contains detailed information from workforce construction programs on their outcomes and strategies used to achieve those outcomes.

Appendix B provides information on how state highway agencies can use formula funding from the Federal Highway Administration to fund workforce development efforts and provides examples of state programs.

Section I. Trends in Construction and Apprenticeship Workforce Diversity

- A. Demographics of the Construction Industry Workforce
 - B. Demographics of Construction and Extraction Occupations
 - C. Data on projects funded by the Federal Highway Administration (FHWA)
 - D. Demographics of Construction Registered Apprenticeship Programs
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Section I. Trends in Construction and Apprenticeship Workforce Diversity

The economy has already added 670,000 construction jobs two years into the infrastructure law. Construction jobs growth is expected to accelerate as more projects funded by BIL go into construction. As states and local jurisdictions look to identify and address barriers to opportunity and bring underrepresented populations into the construction workforce, it is important to know the current demographics of the workforce and how the workforce composition has evolved over time.

This section of the report looks at workforce trends in both the construction industry as well as construction occupations. The focus is on all of construction because demographic information is not available for subsectors of construction like [heavy and civil engineering construction](#) and also because construction workers, especially workers in the construction trades, may cross multiple sectors, working on highway or transit projects and then doing commercial construction.

One agency at DOT, the Federal Highway Administration (FHWA), does have limited data available on the demographics of workers on federally-assisted projects. These data are presented following aggregate construction data.

This section also details the diversity of apprenticeship programs in construction because Congress directed DOT to address how the creation of pre-apprenticeship programs that connect to registered apprenticeship can address diversity in the construction workforce. It is important to assess the current diversity of apprenticeship programs in order to understand how stronger connections between pre-apprenticeship programs and apprenticeship programs could bring more underrepresented populations into apprenticeship.

To summarize the data below, the construction industry and construction occupations are becoming more diverse in some dimensions—for example, the share of women and Hispanics in the construction workforce is increasing—but racial diversity has not improved over the past two decades. Data for registered apprenticeship over the past five years also shows a decline in racial diversity along with an increase in gender diversity and ethnic diversity driven by growing Latino participation.

A. Demographics of the Construction Industry Workforce

The construction industry includes all jobs at firms that operate in the [construction industry](#). Although many of the jobs involve the performance of construction tasks (i.e., construction and extraction occupations), these occupations make up just under 60 percent of industry employment. The second major category of employment involves management, business, and financial operations, making up about 20 percent of industry employment. Other notable occupational categories include installation, maintenance, and repair; office and administrative support; transportation and material moving; and computer engineering and science. Each of these amounts to less than 6 percent of total industry employment²

Demographic trends by race and ethnicity are shown for the construction industry workforce in Chart 1. From 2003 through 2020 the percentage of non-Hispanic white males employed in the construction industry declined from 71 percent to 61 percent. This decline was the result of a growing share of Hispanic workers employed in the industry, which increased from 20 percent to 30 percent while the proportion of other racial and ethnic demographic groups remained constant. Hispanic workers are overrepresented in the construction industry, accounting for 18 percent of total U.S. employment but 30 percent of construction employment. Hispanic workers are particularly overrepresented among construction occupations, accounting for nearly

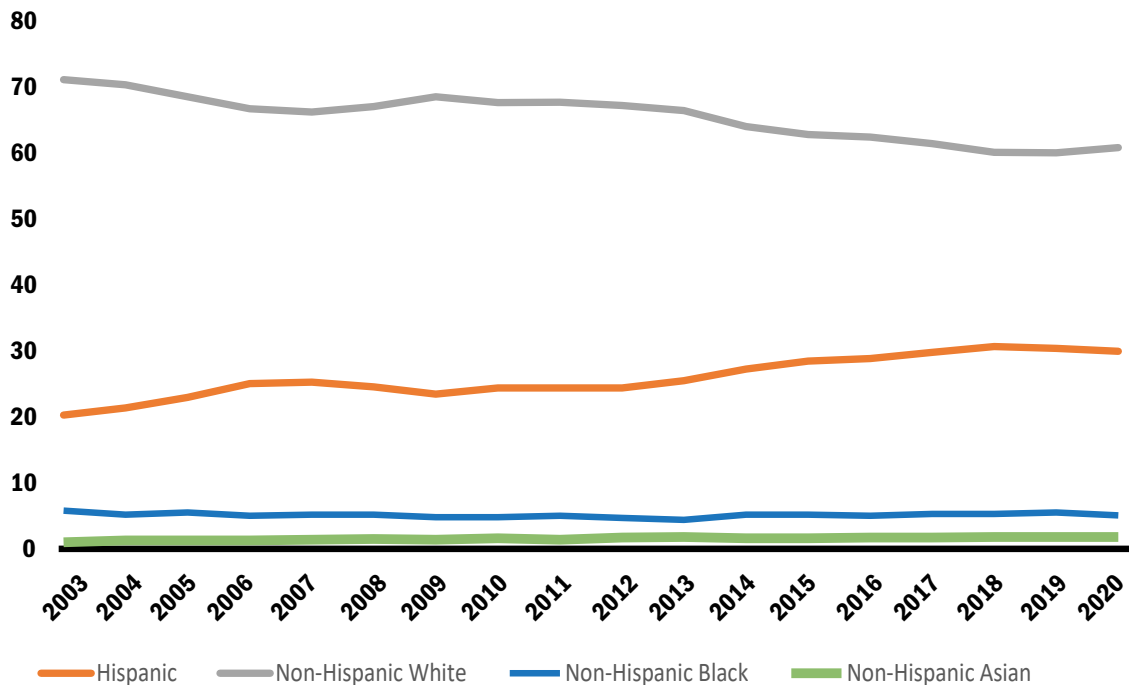
2 Data come from slide 5 in BLS Spotlight on the Construction Industry. <https://www.bls.gov/spotlight/2022/the-construction-industry-labor-force-2003-to-2020/home.htm>

50 percent of construction laborers and over 50 percent of painters and paperhangers. On the other hand, Hispanic workers are underrepresented among construction management and other management roles where they make up only 14 percent.³

Even though the fraction of Hispanic workers has been growing over time, there is a continuing disparity in wages compared to non-Hispanic workers in the construction industry. Average monthly earnings for Hispanics in the construction industry were \$5,320, compared to \$6,116 for non-Hispanics in the second quarter of 2022, a difference of about 15 percent.⁴ This is likely the result of several factors but, as noted by the [BLS Spotlight on the Construction Industry](#), foreign-born workers earn less in the construction industry than native-born individuals, Hispanic workers in the construction industry tend to be overrepresented in some of the lower-paying occupations like laborers, and Hispanic workers are also less likely to be in a union.⁵

From 2003 through 2020, the share of women in the construction industry grew by 1.3 percentage points to reach 10.9 percent in 2020.⁶ In addition to their limited presence within the construction industry, women also have consistently lower wages than men, with men earning \$6,231 on average per quarter compared to women earning only \$4,748, a difference of about 30 percent.⁷

Chart 1: Change in Percent Distribution of Construction Employment By Race and Ethnicity, 2003 to 2020



Source: Reproduction of Slide 4 in The Construction Industry: Characteristics of the Employed, 2003–20. Retrieved at <https://www.bls.gov/spotlight/2022/the-construction-industry-labor-force-2003-to-2020/home.htm>

3 Ibid. Slide 7.

4 These data were pulled from the Quarterly Workforce Indicators Explorer, looking at “Full Quarter Employment (stable): Average Monthly Earnings” with differences by ethnicity.

5 Data from slides 9 and 13 in BLS Spotlight on the Construction Industry. <https://www.bls.gov/spotlight/2022/the-construction-industry-labor-force-2003-to-2020/home.htm>

6 Ibid. Slide 2

7 These data were pulled from the Quarterly Workforce Indicators Explorer, looking at “Full Quarter Employment (stable): Average Monthly Earnings” with differences by gender.

B. Demographics of Construction and Extraction Occupations

Construction and extraction occupations are what many may think of when they think of construction workers and have a different mix of workers than the industry overall. Construction and extraction occupations (referred to as “construction occupations” below) have a lower percentage of women and a higher percentage of Hispanic workers.

In 2022, there were 8.43 million people employed in [construction and extraction occupations](#).⁸ Of those employed, 4.2 percent were women. The racial makeup of these occupations was 87.1 percent white, 7.1 percent Black, and 1.6 percent Asian. Of those employed in these occupations, 40.3 percent identified as Hispanic. Compared to the construction industry, construction occupations are less diverse in terms of gender and more diverse in terms of race and ethnicity.

Analysis of BLS data from 2016 to 2019 found that American Indians and Native Alaskans made up 1.6 percent of construction and extraction occupations. This is higher than their representation among the employed (1 percent) or population overall (1.1 percent).⁹

There are also some data available on people with disabilities working in construction occupations. In 2022, 3.9 percent of those working in construction and extraction occupations reported having a disability. This makes people with a disability slightly underrepresented in construction occupations compared to their 4.4 percent share of total workers that are employed. People with a disability account for 4.6 percent of the labor force. It is important to note that people with a disability are severely underrepresented in the labor force as they make up 12 percent of the population.¹⁰

Between 2003 and 2022, construction occupations became more diverse in some dimensions. Over this time, the percent of women in construction occupations grew from 2.8 percent to 4.2 percent, and the share of Hispanic workers increased from 23.7 percent to 40.3 percent. The share of Asian workers is small but also showed an increase from 1.0 percent to 1.6 percent.¹¹ Yet the percent of Black workers remained constant at 7.1 percent.

Due to different starting points, it is useful to look at the percent increase in the shares of each population within the construction workforce. This can be seen in Chart 2, which shows the share of each group relative to that same group’s share in 2003. In 2023, the share of workers that are Hispanic reached 170 percent of the 2003 level, meaning that the share is 70 percent higher than it was in 2003. The share that is women reached 150 percent of the 2003 level. This chart also makes it clear how little progress there has been in bringing Black workers into the construction trades. The Black share of construction workers is about the same as it was in 2003 and dropped below the 2003 share in the 2008 recession. The share for women also dropped below its 2003 level but rebounded significantly. The share for Hispanics dropped during the 2008 recession as well but never below its 2003 level.

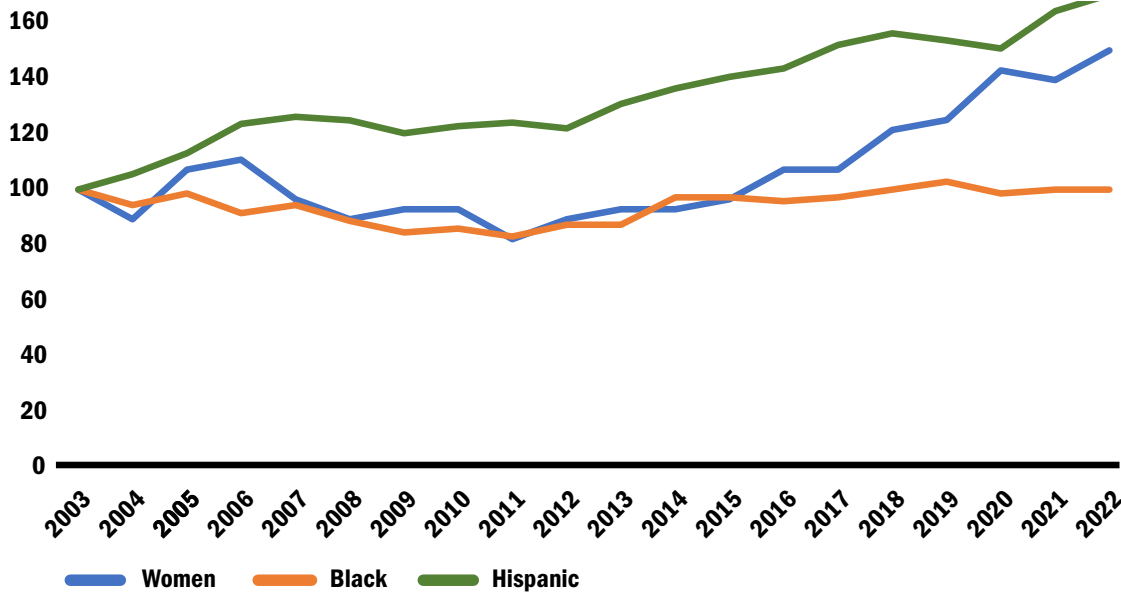
8 All the data below are for all construction and extraction occupations regardless of the industry. There are a wider variety of data available for the set of occupations as a whole rather than narrowing to just those in the construction industry. The share of those employed in construction and extraction occupations that are employed in the construction industry ranges from 78 percent to 86 percent over the time period looked at.

9 Data come from the November 2019 Monthly Labor Review article: Article November 2019. [American Indians and Alaska Natives in the U.S. labor force](#)

10 Author’s calculation of information provided in Table 3 of <https://www.bls.gov/news.release/pdf/disabl.pdf>

11 Data are from 2003 and 2022 versions of CPS table 11. <https://www.bls.gov/cps/aa2003/cpsaat11.pdf> and <https://www.bls.gov/cps/cpsaat11.pdf>

Chart 2: Growth Over Time of Share of Workers In Construction and Extraction Occupations that are Hispanic, Black, and Female, 2003 to 2023 Comparison to 2003 Levels



Source: Data above are pulled from Table 11 in the years 2003 through 2022. Tables for each of these years can be found at [“Labor Force Statistics from the Current Population Survey.”](#)

C. Data on projects funded by the Federal Highway Administration (FHWA)

FHWA requires that workforce demographics be reported by federal-aid contractors and sub-contractors every year in the month of July to the State Departments of Transportation (State DOTs). State DOTs are then responsible for consolidating that information and sending it to FHWA. These data provide a point-in-time view of the demographics of the construction projects that FHWA is funding through formula and competitive dollars. These data include all hours worked on projects by the contractors including those worked by project managers and administrative staff. Trends in these data between 2018 and 2023 are included below. Similar to the trends above, the female and Hispanic share in construction occupations has grown and share of construction workers that are Black has declined.

There are also large variations by state. For the female participation in construction, the share ranges from under one percent in some states to almost 20 percent in others. Based on 2023 data, ten State DOTs and the District of Columbia have projects with female participation at 8 percent or higher including: Alaska, Idaho, Massachusetts, Oregon, Pennsylvania, Utah, Vermont, Washington, West Virginia, and Wyoming. Eight states have female participation below 2 percent including: California, Connecticut, Hawaii, Louisiana, Mississippi, New Hampshire, Oklahoma, and Texas. Some of the high-performing states and entities within them are referenced below, but there is more to be learned from the differences among these states.

As the Bipartisan Infrastructure Law is being implemented, trends in these data, especially by state, could be an important way to track the progress of bringing underrepresented populations into the workforce and identify effective strategies.

Table 4. Fraction of All Contractor Hours and all Construction Hours Worked, by Demographics, 2018 and 2023

	2018 All Hours	2023 All Hours	2018 Construction Occupations	2023 Construction Occupations
Share female (%)	7.2	7.9	4.2	4.9
Share Black (%)	9.1	8.7	10.2	9.4
Share Hispanic (%)	23.8	32.6	27.9	36.8
Share American Indian or Native Alaskan (%)	1.6	1.5	1.7	1.6
Share Native Hawaiian or Pacific Islander (%)	0.6	0.4	0.4	0.5
Share Asian (%)	0.5	0.8	0.35	0.5

Source: Data come from the 2018 and 2023 1392 reports submitted to the Federal Highway Administration. The form filled out by State DOTs can be accessed [here](#). Construction occupations is a combination of the following job categories: equipment operators, ironworkers, carpenters, cement masons, electricians, pipefitter/plumbers, painters, laborers-semi skilled, and laborers unskilled.

D. Demographics of Construction Registered Apprenticeship Programs

To assess the diversity of registered apprenticeship programs in the construction trades, DOT worked with the U.S. Department of Labor (DOL) to collect data from 2018 to 2023.¹² These data were analyzed to determine the current diversity of these programs in the construction trades, the trends in diversity, and the differences across specific trades.

Trends over time for construction apprenticeship

DOL Data on registered apprentices between 2018 and 2023 show that the number of construction apprentices grew by 17 percent over this five-year time period, from 186,600 in 2018 to 212,032 in 2023. During this time frame, construction apprentices have become more diverse in terms of gender and ethnicity but less diverse in terms of race.

Over the five-year period, the share of female participants increased from 3.4 percent to 4.6 percent. Even though the one percentage point rise in the share for women seems small, the share increased because the number of female apprentices grew by 60 percent compared to the 17 percent growth for apprentices overall. Over the 2018 to 2023 time period, the share of Hispanic participants increased from 16.7 percent to 20.8 percent.

12 Construction apprenticeships are defined as RAPs with a reported 2 digit NAICS code corresponding to the Construction sector (i.e., NAICs codes beginning with the digits 23). Individual record data is transferred from all states to the Office of Apprenticeship through the Registered Apprenticeship Partners Information Management Data System (RAPIDS). However, some states, including New York and Connecticut, do not comprehensively report detailed information on industry or occupation of Registered Apprentices. This analysis necessarily excludes Registered Apprentices without industry data which may disproportionately impact some states. This is a descriptive analysis of the subsection of apprenticeships where reliable industry data are available, and the findings should not be further extrapolated. For more information visit: <https://www.apprenticeship.gov/data-and-statistics>

During the same period, however, the racial diversity of apprentices declined slightly; non-White apprentices decreased from 31.6 percent of all apprentices in 2018 to 30.6 percent in 2023. The percentage of Black active registered apprentices has decreased from 9.7 percent to 8.4 percent, and the share of Native Hawaiian or Pacific Islander apprentices declined from 1.8 percent to 1.3 percent. The percentage of Asian registered apprentices barely changed from 1.7 percent to 1.6 percent. Some racial groups showed small increases. The percentage of American Indian or Alaskan Natives increased from 1.4 percent to 1.8 percent, and apprentices identifying as multiracial increased from 0.5 percent of the total to 1.2 percent. It is worth noting that a significant share of apprentices does not identify their race—that share has changed minimally from 16.5 percent in 2018 to 16.3 percent in 2023.

In several demographic categories Construction Registered Apprenticeships are only slightly more diverse than the industry overall. In 2022, 4.4 percent of construction apprentices were female compared to 4.2 percent of all construction workers, 8.4 percent of construction apprentices were Black compared to 7.1 percent of all construction workers, and 1.7 percent of construction apprentices were Asian compared to 1.6 percent of all construction workers. However, the share of construction apprentices that were Hispanic (19.4%) was significantly lower than the share of Hispanic construction workers (40.3%).

It is worth noting that there are differences between union and non-union apprenticeships with union apprenticeship showing greater diversity. The share of construction apprentices that are female is 5.3 percent among union apprenticeship programs and only 2.7 percent of non-union apprentices. Union apprenticeship programs also have a higher rate of participation among Black workers. The share of apprentices that are Black in union programs is 9 percent compared to 6.4 percent among non-union programs.

These data illustrate that the use of apprenticeship as a training method does not on its own increase diversity in the construction trades. The share of women in apprenticeship programs is similar to construction occupations overall. For this reason, the model plans below recommend that agencies use apprenticeships while also being intentional about how they expand diversity in those apprenticeship programs through hiring preferences and incentives to recruit from diverse pre-apprenticeship programs.

Crafts with Growing Diversity

There is significant variation in the diversity of active apprentices by the apprenticeable occupation. Looking first at gender, there are seven major trades that have had significant increases in the fraction of apprentices that are female. Included in the table below is any trade that had a higher than one percentage point increase and also ended with a share of female apprentices at or higher than the 2023 average of 4.6 percent. They are organized by the size of the increase in percentage point terms.

Although not all of the apprentices are in labor-sponsored programs, the vast majority of registered apprenticeship programs are labor-sponsored. Several of these unions have taken significant steps that would explain the growth in the share of women. For example, in 2019 the International Union of Painters and Allied Trades put in place a policy offering 6 to 8 weeks of paid maternity leave. The Ironworkers were the first union to put in place paid maternity leave in 2017 and they have also continued to see an increase in women in their apprenticeship programs. Their maternity leave policy includes the 6 months prior to delivery because of the physical nature of ironworking. Women who use this policy have had an 82 percent retention rate.

The ironworkers have also had a focused recruiting strategy on partnering to bring women in from prisons, offering training before release date. Across the trades, more training is taking place before prison release. This is discussed more in Section IV.

Table 1. Major Trades with Significant Increases in Female Apprentices as Share of Total

Occupation	2018 Share Female Apprentices (%)	2023 Share Female Apprentices (%)
Painters	5.8	10.6
Insulators	3.8	8.4
Boiler Makers	4.0	7.6
Millwrights	3.2	5.6
Operating Engineers	4.8	7.0
Iron Workers	3.6	5.7
Carpenters	4.4	6.1

Looking at racial diversity, there are only a few trades with above average participation of any non-white racial group that also had a significant increase in that group. The increased growth is mainly among the Native American population (defined as American Indian or Alaskan Native in the apprenticeship data) and the multiracial category. Eight trades have had a significant increase in these groups. Two trades, Refrigeration Mechanics and the Cement Masons, also had a significant increase in the Asian population. There were significant increases in the share of Black participants in only one trade, the Carpenters. Table two lists these trades in order of the size of the percentage point increase between 2018 and 2023.

Table 2. Major Trades with Significant Increases in Racial Diversity

Occupation	Minority Group Showing Increase	Minority Group Share in 2018 (%)	Minority Group Share in 2023 (%)
Sheet Metal Worker	American Indian or Alaska Native	3	9
Refrigeration Mechanic	Asian	4	9
Cement Mason	American Indian or Alaska Native	1	4
Bricklayer	Multiracial	0	2
Painter	Multiracial	1	3
Refrigeration Mechanic	Multiracial	0	2
Carpenter	Black or African American	12	13
Operating Engineer	American Indian or Alaska Native	3	4
Carpenter	Multiracial	1	2
Cement Mason	Asian	1	2
Roofer	Multiracial	1	2

It is also worth noting that there are some trades that are more diverse than average but have not seen growth in their diversity between 2018 and 2023. For example, heavy construction equipment mechanics and construction laborers have the highest share of female workers but have not seen growth in that female share and therefore are not included in Table 2. Similarly, bricklayers, boilermakers, electricians, and roofers all have a higher percentage of Black workers than the average across all trades, but the share has not increased since 2018. Table 3 illustrates the major trades with greater participation rates of women and Black workers, irrespective of changes since 2018.

Table 3. Major Trades with Greater Demographic Participation Rates Than Average¹³

Occupation	6 Year Average Share of All Active Apprentices (%)
Female Apprentices¹⁴	
Heavy Construction Equipment Mechanics	10
Construction Laborer	8
Insulators	7
Painters	7
Boilermakers	5
Operating Engineer	5
Carpenter	5
Steel Worker	5
Black Apprentices (as percent of total) ¹⁵	
Bricklayer	17
Construction Laborer	16
Cement Mason	15
Boilermaker	15
Electrician	15
Roofer	13
Carpenter	13
Insulator	11
Iron Worker	10
Glazier	9
Painters	9
Heavy Construction Equipment Mechanic	8
Heating and Air Conditioning Mechanic and Installer	8

¹³ Defined as occupations with greater than 1000 active apprentices on average over the period from 2018-2023. Occupations are selected where the participation rate for that demographic in 2023 exceeds the average participation rate.

¹⁴ The female RAP participation rate for 2023 was 4.6 percent.

¹⁵ The Black RAP participation rate for 2023 was 8.3 percent.

Section II. Model Plans for States and Local Jurisdictions

- A. Recommendations for Transportation Agencies to Implement through Procurement and Project Implementation
 - B. Recommendations for Workforce Programs to Complement Transportation Agency Procurement
 - C. Characteristics of Quality Workforce Programs for the Construction Trades
 - D. Characteristics of quality programs important for specific sub-populations
 - E. Other Government Policies Needed to Complement Workforce Strategies
- 

Section II. Model Plans for States and Local Jurisdictions

DOT was directed in Section 25019 of the Infrastructure Investment and Jobs Act to develop recommendations for states and local government jurisdictions on how to increase diversity in the construction workforce. To develop recommendations, DOT reached out to states and cities to provide information on how they are expanding diversity on their public projects. DOT identified some jurisdictions that track the necessary information to ascertain whether or not diversity has increased, but many jurisdictions do not have this information. Due to these data limitations, DOT also reached out to community-based organizations, unions, and other organizations that are training construction workers to understand what was effective for them to address barriers to opportunity facing particular sub-populations in entering the construction workforce.

Based on interviews with over 20 entities and a review of the limited existing research on this topic, below are the top-level recommendations for states and local jurisdictions on how to bring in the diversity that exists within their local communities onto construction projects. These recommendations are meant for all state and local jurisdictions and agencies that are receiving funding from DOT including highway agencies, ports, and transit agencies. These recommendations recognize the important role that transportation agencies play not only in supporting workforce development programs but also in setting the parameters for workforce and hiring in their project contracts.

For that reason, strategies below are separated into those that must be implemented through the procurement and project implementation process by the transportation entity and those that can be implemented separately

Figure 1: Recommendations for States and Local Government Transportation Entities

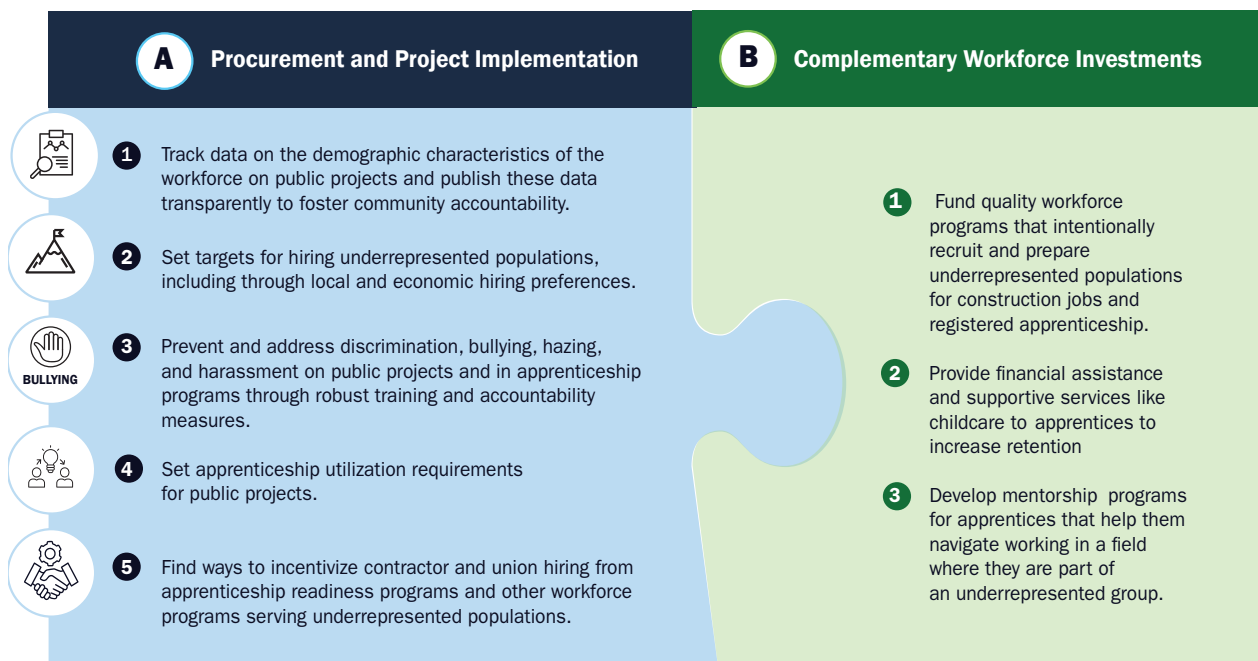


Table 5 on the next page shows which states and cities that were interviewed have adopted the policies recommended and notes the success that those entities have received in advancing diversity in the construction workforce. This table does not include Destination Crenshaw, the Kansas City International Airport Terminal, or the Syracuse I-81 project. These are single projects with success in fostering a diverse workforce, and the table below is meant to show government or transportation agency policies that apply to multiple projects.

Table 5. Implementation of Recommendations by State and City Transportation Agencies

Governmental Entity	Populations with above average participation or growth over time	A				B		
		A2. Hiring preferences or goals	A3. Prevent discrimination and harassment on project sites	A4. Apprenticeship Utilization Requirements	A5. Ways to directly prioritize apprenticeship readiness programs	B1. Funding for pre-apprenticeship	B2. State/city funding for apprentice financial supports	B3. Provide mentorship for apprentices
State of Oregon	Black, Hispanic, Women ¹⁶	✓ ¹⁷	✓	✓		✓	✓	✓
City of Seattle	Black, Women ¹⁸	✓	✓	✓	✓	✓	✓	✓
City of Philadelphia	Black, Hispanic ¹⁹	✓		✓*		✓		
Los Angeles County Metropolitan Transportation Authority	Black ²⁰	✓		✓	✓			
City of San Francisco	Black ²¹	✓		✓	✓	✓		✓
State of Illinois	Black ²²			✓	✓	✓		
State of Vermont	Women ²³		✓	✓*			✓	

16 The share of women as completers of apprenticeship increased from 4 percent in 2005-2008 to 6 percent from 2016-2019. Over the same time period the share of Hispanics increased from 7 percent to 13 percent and the share of Black workers increased from 2 percent to 3 percent.

17 Oregon DOT is implementing a new master Community Workforce Agreement that includes economic hiring preferences.

18 African American participation increased from 4 percent prior to the implementation of Priority Hire to 7 percent after the implementation. In 2022, the share of hours worked by women on covered projects was 7 percent, above the average participation of women on public projects.

19 The share of workers on public works projects that are Black increased from 15 percent in 2016 to 17 percent in 2022. Over the same time period the share of workers that are Hispanic increased from 11 percent to 14 percent.

20 In 2022, the collective BIPOC participation across active projects including the targeted hire requirement stood at an average of 66.32 percent. As of June 2023, this figure has risen to 68.08 percent across active projects. Additionally, the African American population participation of total hours worked has risen from 5 percent in 2022 to 6.5 percent in June 2023.

21 The average BIPOC participation has increased from 20 percent to 55 percent across all workers since local hire began.

22 The percentage of apprentices that are Black working on Illinois Works Public Projects increased from 6.3 percent to 7.9 percent between 2022 and 2023. For the Hispanic population the increase was from 12.0 percent to 14.8 percent. The share of female apprentices remained the same at 6 percent, higher than the national average and higher than the share of female apprentices on all public works projects.

23 In 2022, the share of workers on Vermont DOT projects that are women was 12.5 percent up from 8.3 percent female in 2019.

* These governmental entities use on the job training requirements rather than apprenticeship requirements and set a high number of training hours for every project. Vermont's [OJT training manual](#) also requires that all trainees be a woman, a minority, or disadvantaged as defined by meeting one of the priority populations for the Workforce Innovation and Opportunity Act. This policy goes beyond many states in targeting OJT to underrepresented populations

A. Recommendations for Transportation Agencies to Implement through Procurement and Project Implementation

A key characteristic of this first set of recommendations is that only the transportation agency can implement them. These strategies are executed through the bid or contracting process itself and must be incorporated into it. Some jurisdictions also implement these strategies through a Project Labor Agreement. Each recommended strategy for transportation entities to implement is explained more in depth below.

1. Track data on the workforce on public projects and publish these data transparently to foster community accountability.

As noted above, many states and cities contacted could not share whether or not diversity is improving on public projects because these data are not being widely tracked. Interestingly, as noted above, FHWA does have data available on the demographics of the workforce on federally-assisted contracts from State DOTs. These data come from contractors, covering only the month of July, and are aggregated by State DOTs. Despite this point-in-time data collection, many state DOTs are not consistently aggregating data from contractors, monitoring it for their own internal purposes to achieve equity goals, or making it available to the public in a transparent way. Section III has more information on how data can be tracked. DOL has also created a guide on collecting workforce data: [Good Jobs In Federal Investments: Data and Reporting Appendix](#). To the extent that cost is a barrier, it is likely possible for State DOTs to use formula funding from FHWA to fund these data collection efforts since they could be framed as “activities for women and minorities,” which is one of the purposes covered according to [guidance from FHWA](#). State DOTs would need to seek approval from FHWA for this purpose

Transparency around the data will create public accountability for initiatives and policies that are intended to achieve greater diversity in the construction workforce. Some of the entities profiled in Section II on local and economic hiring preferences regularly publish progress toward meeting these goals. Accountability can also be fostered through Access and Opportunity Committees. These committees consist of project owners, contractors, unions, community organizations, and other stakeholders. The committees publicly review data on the project workforce and make recommendations for how to intervene when progress toward goals is not being met. DOL has created a [guide on Access and Opportunity Committees](#) with some examples of entities that are using these committees.

2. Set targets for hiring underrepresented populations, including through local and economic hiring preferences.

Most government jurisdictions with success in expanding diversity in their construction workforce have set expectations for hiring of underrepresented populations. Using hiring preferences motivates contractors to reach a broader talent pool and, if results are tracked, holds them accountable for achieving hiring goals.

One way to set targets is through local and economic hiring preferences. As discussed in greater length in the DOT report, [Creating a Local Construction Workforce: Assessment of Current Use of Local and Economic Hiring Provisions](#), local and economic hiring preferences are provisions in a contract that require a contractor to employ workers from a specified target group or population. Local and economic hiring preferences can be based on (1) geographic boundaries based on noneconomic factors, (2) geographic areas based on economic factors, and/or (3) the economic conditions of the worker. More information on how these preferences are used to advance the inclusion of underrepresented groups is included in Section III below. Some cities like Seattle have set targets for hiring individuals from economically disadvantaged zip codes. Other cities like San Francisco directly preference the hiring of people with barriers to employment like those with justice involvement

through requirements that a certain fraction of workers or apprentices be “Disadvantaged Workers” which are then defined to include those with justice involvement.

It is important to note, however, that some cities with local/economic hiring preferences have not seen increases in certain dimensions of diversity. Local and economic hiring preferences are not allowed to be based on race, gender, or disability. Although race may tend to be correlated with some of the economic conditions used, gender is unlikely to be. If higher participation of women or a certain racial group is the intention, then goals for these populations can be set on projects. Goals based on race, color, national origin, or gender, however, are not enforceable—that is, penalties cannot be assessed on contractors who do not meet the goals. This differs from targets for local and economic hiring preferences (that are not based on race or gender), because such targets can be enforced.

Under EO 11246, Equal Employment Opportunity, all contractors and subcontractors which hold any Federal or federally assisted construction contract in excess of \$10,000 are required to make good faith efforts to meet the goals of 6.9 percent of construction project hours being performed by women and goals that vary based on geography for construction work hours being performed by people of color; those good faith efforts must include the 16 affirmative action steps described at 41 C.F.R. 60-4.3(a)7. Additionally, the U.S. Department of Labor has set an aspirational goal that 7 percent of the workforce should consist of qualified individuals with disabilities. The Office of Federal Contract and Compliance Programs (OFCCP) at DOL is responsible for enforcing these laws and has [a technical assistance guide that details the specific equal employment opportunity obligations and affirmative action steps for federal construction contractors.](#)

If a transportation agency intends to ask contractors to reach goals that go beyond the goals set in EO 11246, that is allowable as long as a disparity study is done to set goals that reflect the availability of qualified workers in the local market. Philadelphia is an example of a city where specific gender and racial goals are used. An [annual disparity study](#) of how underrepresented certain populations are in the workforce is used to set goals. Their bid requests ask the potential contractor to “exhaust its Best and Good Faith Efforts to employ minority persons, by race and ethnicity, and females in its workforce of apprentices and journey persons at the following levels.” The goal for Black workers, for example, is set at 22 percent of journey level hours and among apprentices, 50 percent are required to be minorities. The Kansas City International Airport Terminal project is another example where demographic goals were set for minority and for female participation on the project. Project Case Study 1, below, includes more information on this project and the hiring goals set.

3. Prevent and address discrimination, bullying, hazing, and harassment on public projects and in apprenticeship programs.

This includes preventing and addressing gender-based violence and harassment. Harassment and hostility in the workplace were cited as problems by almost every entity interviewed, including cities and states, workforce programs, and unions. A recent report by the EEOC, “[Building for the Future: Advancing Equal Employment Opportunity In the Construction Industry](#)” also finds that harassment, including gender- and race-based harassment, is very common in the construction industry. Work environments with violence, harassment, and discrimination can interfere with an individual’s ability to work or work safely in workplaces with heavy machinery or dangerous tools. These workplace issues prevent people from coming into the trades and also drive them to quit the trades altogether. As noted in the interview with the City of Seattle, harassment builds up over time and eventually leads women and Black workers to leave the trade.

As mentioned above, Federal contractors must take affirmative action to ensure equal employment opportunity in their employment processes. Federal contractors must also take affirmative action to ensure equal employment opportunity in their employment processes. These affirmative action requirements include that a contractor must “ensure and maintain a workplace free of harassment, intimidation, and coercion at all sites, and in all facilities that the contractor’s employees are assigned to work.”

States and local governments that fund construction projects have an important role to play in making federal regulations clear to contractors and taking steps that go beyond federal law to prevent violence, harassment, and discrimination, including gender-based violence and harassment. States and local jurisdictions should consider adopting a comprehensive set of practices that are detailed in their bids and contractors. These policies and programs should include:

- A clear policy that harassment will not be tolerated should be communicated to all workers with a clear understanding of the disciplinary action that will take place
- Trainings for all workers (managers, journey workers, and apprentices) on anti-harassment
- Independent, consistent, trauma-informed processes for reporting concerns or violations
- Anonymous complaint systems that protect those complaining from retaliation and clear consequences for retaliation

Among jurisdictions with which DOT spoke, there were a variety of approaches being used to address issues of discrimination, bullying, hazing, and harassment.

Seattle and Oregon are examples of jurisdictions with contract provisions that require contractors take steps to prevent harassment. Seattle has Acceptable Work Sites [contract provisions](#) that require “acceptable behavior” on work sites – prohibiting bullying, hazing, and any harassment based on race, gender identity and other characteristics – and conducts site visits to observe and conduct interviews. Seattle also works with community-based organizations to connect regularly with apprentices and support them, providing career navigation, wraparound support and mentorship.

In Oregon there is currently a [requirement for state contractors to document that they have a policy and practices to prevent sexual harassment](#), but there is no requirement to assess these policies. More recently, the Oregon Bureau of Labor & Industries has been [requested by the legislature to develop a model respectful workplace policy](#) that employers can adopt. The Bureau of Labor and Industries is partnering with the Oregon Institute of Occupational Health Sciences to [develop a Respectful Workplace Climate Scale](#). The tool can then be used to evaluate how respectful a workplace is and where progress can be made. This will also allow the Bureau of Labor & Industries to benchmark where workplaces currently are and assess how new policies change the environment.

As recommended above, trainings for workers and management are an important step. Building Pathways in Boston is now launching the RISE Up (Respect, Inclusion, Safety and Equity in the Construction Trades) Respectful Workplace Campaign which is designed to shift the culture of construction to be more inclusive to a diverse workforce. This campaign, developed by ANEW, a sister tradeswomen’s organization in Washington State, is designed to be used by public entities, construction companies, apprenticeship training programs, unions and community-based organizations. RISE Up was developed specifically for the construction industry, in partnership with industry stakeholders.

Discrimination, harassment, bullying, and hazing are also issues in the registered apprenticeship system. DOL has created an Anti-Harassment Training Program designed to help Registered Apprenticeship program sponsors meet the requirements for anti-harassment training in the apprenticeship Equal Employment Opportunity (EEO) regulations at 29 CFR part 30. Under the regulations, Registered Apprenticeship programs must provide anti-harassment training to all apprentices and to all other individuals connected with the administration and operation of the apprenticeship program, including journey-level workers, who regularly work with the apprentices. This valuable resource can be found at: <https://www.apprenticeship.gov/eo/sponsors/prevent-harassment>

4. Set Apprenticeship utilization requirements for public projects.

Employing registered apprentices on public projects is the best way to ensure that projects will be used to train new construction workers and build the pipeline for future projects. Yet registered apprenticeship rates are often very low. The Federal Highway Administration data that provide information on the workforce of all federally-assisted projects for the month of July (see Section 1 (C)) show that only 4 percent of all project hours were performed by registered apprentices in July 2023. When other trainees are included, the rate is still below 5 percent (4.7).

Transportation agencies can easily set a registered apprenticeship utilization rate in their bids and contracts. Required apprentice rates also help to advance other important recommendations since more aggressive hiring targets can generally be set among apprentices than for journey-level workers, due to the qualified labor pool for apprentices being larger than for journey-level workers. For example, Amtrak's recent local hire agreement in Baltimore calls for over 50 percent of the apprentice hours to be performed by workers from economically disadvantaged zip codes in Baltimore compared to 20 percent of journey-level hours. A robust apprenticeship cohort that is part of the labor force on the project also allows for setting up direct entry agreements or other ways to prioritize hiring from apprenticeship readiness programs (see below).

Many jurisdictions interviewed set an apprenticeship utilization rate either through contracts or through collective bargaining agreements. Illinois sets a rate of 10 percent on projects funded by Rebuild Illinois, their large capital grant program. Many other jurisdictions set rates around 20 percent for their project labor agreements or community workforce agreements.

As noted in section I above, it is important to emphasize that use of apprenticeship alone will not lead to diversification in construction industry. The racial and gender composition of apprentices is not much different than the composition of construction occupations overall. There has been some growth in gender and ethnic diversity among apprentices but no improvement in racial diversity.

5. Find ways to incentivize contractor and union hiring from apprenticeship readiness programs and other workforce programs serving underrepresented populations.

As noted above, apprenticeship will only be a mechanism to expand diversity in the construction trades if apprenticeship slots are filled by individuals who are disproportionately underrepresented in the construction trades. There are two ways to ensure apprentices come from underrepresented groups. The first is establishing local and economic hiring preferences or other hiring targets for apprentices on the project (recommendation #2). The second is by establishing another kind of preference for contractors and unions to bring on apprentices from certain workforce programs that are helping underrepresented populations to prepare for a career in the trades.

There are a number of examples of how these incentives work in practice. Under the [Illinois Works program](#), contractors receive “[bid credits](#)” to bring on apprentices from the pre-apprenticeship programs being funded by the Illinois Department of Commerce & Economic Opportunity and to progress them to journey level. As shown in Appendix A, these pre-apprenticeship programs are very diverse with women making up 21 percent of pre-apprentices and BIPOC (Black, Indigenous, and People of Color) individuals making up 85 percent of pre-apprentices. The bid credit allows the applicant to reduce their bid amount, making their application more competitive. Illinois is making an annual \$25 million investment in these pre-apprenticeship programs. In addition to the bid credit, in July 2023 Governor Pritzker signed updated legislation that required half of the apprentice hours on projects to be performed by graduates of either the Illinois Works pre-apprenticeship programs other state funded programs.²⁴

²⁴ See Section 20-20 of statute here. <https://www.ilga.gov/legislation/ilcs/ilcs4.asp?DocName=003005590HArt.+20&ActID=3995&ChapterID=7&SeqStart=200000&SeqEnd=1200000>

Another common way to incentivize hiring from pre-apprenticeship programs is to make this part of the project labor agreement or procurement contract. Seattle has a preferred entry provision in its [community workforce agreement](#) (Article XV) to preference hiring from the pre-apprenticeship programs and requires they make up at least 20 percent of apprentices on projects. Some agreements preference one specific pre-apprenticeship program rather than all pre-apprenticeship programs. One recent Project Labor Agreement entered into by the Boston Building Trades included a provision that 20 percent of apprentices should come from the Building Pathways Program. As shown in Appendix A, Building Pathways is a very diverse program with over 20 percent women.

Incentives to hire from pre-apprenticeship programs can also be part of a local hire agreement. As noted below in Table 7, Destination Crenshaw's definition of targeted individual workers include those graduating from a pre-apprenticeship program.

In 2022, DOT and DOL created a [guide for State DOTs on how to expand registered apprenticeship programs and increase diversity of these programs](#). This guide has other suggestions about how partnerships and policies can help to diversify apprenticeship.

B. Recommendations for Workforce Programs to Complement Transportation Agency Procurement

The recommendations above must be implemented by transportation entities because they require procurement policy changes and data collection throughout project delivery. These procurement and project delivery strategies will be more effective if other workforce programs are implemented, but these other workforce programs do not necessarily need to be funded or managed by transportation agencies themselves. The recommendations below can be implemented by states and local governments through their labor or workforce agencies or can be taken on by other partners including union partners or workforce boards.

1. Fund quality programs that prepare underrepresented populations for construction careers.

Dedicated funding is required to create an ecosystem of programs that provide training and wrap-around supports to help individuals get into construction careers, especially apprenticeship programs in the trades. This funding should go beyond the federal funding available through the Workforce Innovation and Opportunity Act because that funding is scarce, especially to provide supportive services that help people to overcome barriers to training and employment.

Funding sources. States and other government jurisdictions use a variety of funding sources for these programs. Among the government jurisdictions with which we spoke, many of the transportation agencies are putting in funding of their own to support workforce programs. [State transportation agencies can use about \\$50 billion in annual highway formula funds](#) to invest in these workforce programs including in supportive services and mentoring that are necessary characteristics of quality programs (Figure 2). Oregon is an example of a state using highway formula funds (about \$1.8 million per year). Over half of states are now using some of these funds according to an FHWA survey, totaling \$39 million in funds either currently being used or planned (see Appendix B). DOT has a fact sheet available on [how state departments of transportation can invest these formula dollars into programs that are training young people including opportunity youth](#).

Mechanisms for distributing funding. Sometimes this workforce funding is provided competitively, as is the case with Illinois and Oregon. Washington State also has a [competitive grant program](#).

[used to fund pre-apprenticeship programs](#). Other times a government jurisdiction will start its own training program as with San Francisco City Build. Seattle and Philadelphia are also making targeted investments.

Funding high-quality workforce programs. In allocating funding, government jurisdictions should consider programs that already have some of the characteristics of quality pre-apprenticeship programs below. Funding can help existing workforce programs fill gaps and model high-quality programs. Jurisdictions should also consider how programs are meeting the needs of underrepresented populations in the community and fund a mix of programs serving the underrepresented populations that are also unemployed and underemployed in the local community. There are programs in every community that could be leveraged including union-sponsored apprenticeship readiness programs, workforce boards, high school career and technical education programs, and AmeriCorps programs. Jurisdictions could help to fund programs that are part of the American Climate Corps (ACC), which is a federal government initiative focused on training young people for high-demand skills for jobs in the clean energy economy.

2. Provide financial support to apprentices to help increase retention.

Apprenticeship completion rates for underrepresented populations remain a consistent problem. This problem has to be tackled with a combination of strategies. First and foremost, transportation agencies need to take steps to prevent harassment, bullying, and hazing that lead apprentices to exit the trades. This recommendation was addressed above. Second, apprentices will continue to need financial support once they are placed in apprenticeship. Many workforce programs will stop providing intensive assistance to individuals once placed in apprenticeship, but at this point apprentices are still only making 60 percent of a journey-worker wage which may still make it hard to financially support their families or may make them vulnerable to hardships such as a car breaking down or a medical emergency. Apprentices may still need emergency cash assistance as well as critical supportive services such as temporary lodging or help with childcare.

Financial assistance can be provided in a number of ways. It could be provided through the community-based organizations that supported individuals into apprenticeship, but most apprentices still will not have gotten placed through a community-based program. For that reason, state and city transportation agencies should explore how they can partner with other providers to make these services available to all apprentices on public projects or all apprentices in a certain set of trades. Oregon refers to such providers as Apprenticeship Recruitment and Retention Providers (ARRPs).

3. Develop mentorship for apprentices that helps them navigate being underrepresented in the field.

In addition to financial assistance and addressing the culture of the construction workplace, mentorship is another important strategy to foster retention of underrepresented individuals in apprenticeship programs. The workforce development programs interviewed consistently brought up mentorship as helping to get people trained and into registered apprenticeship. Some noted that mentorship is best when provided by individuals with similar identities (e.g., women mentoring women). Several states and cities have employed a mentorship approach. The City of Seattle has a mentorship pilot focused on women of color (More details are in Section IV below). As discussed in Section IV, some entities use the same individuals that help to place targeted workers onto projects in a mentoring role.

Mentorship has also been identified as a critical component of successful registered apprenticeship programs by DOL. DOL has developed a guide on how their apprenticeship grantees can use mentorship and it can be found [here](#).

Hiring Preferences on the Kansas City International Airport New Terminal

Completed on time and on budget in 2023, the \$1.5 billion KCI New Terminal Project was the largest single infrastructure project in Kansas City's history. The scope of the project was to replace the existing terminals at the Kansas City International Airport (MCI) with a new single terminal, structured parking, and associated landside and airside improvements. The City of Kansas City, MO (the City) selected Edgemoor Infrastructure & Real Estate (Edgemoor) as the developer of the project in 2017. Reflecting the City's desire for this legacy project to have a transformational impact, the City and Edgemoor surveyed the local and minority business community, assessed the Kansas City subcontractor community's capacity, and used that information as a baseline to set ambitious goals for workforce and minority- and women-owned business participation. In support of these goals, Edgemoor developed the Terminal Workforce Enhancements Programs (TWEP) to build capacity among and support participation by Kansas City's workforce and small business community.

Positive outcomes in workforce representation

Based on the over 4.7 million workforce hours logged in the City's tracking system as of 3Q23, the project achieved 24.55 percent minority workforce participation and 7.75 percent female workforce participation. Both of these percentages exceeded the City's goals of 20 percent minority and 2.75 percent female workforce participation. The 7.75 percent female participation achieved on the New Terminal Project is nearly four times the 2% requirement for female workforce participation on a standard City project.

Strategies for achieving local hire goals and enhancing diversity

The TWEP included an innovative Workforce Training Program (WTP), intended to create meaningful employment opportunities for Kansas City residents with little or no construction experience. Designed in close collaboration with project subcontractors and an advisory panel of Kansas City-based community leaders and union representatives, the Workforce Training Program offered participants a structured three-week classroom experience and apprenticeship opportunity. The Edgemoor team engaged in significant community outreach at the beginning of the WTP to maximize participation and developed a rigorous interview process to identify candidates who would benefit most from the program.

Subcontractors on the New Terminal Project selected candidates to sponsor through the program and committed to paying each of their candidates a \$400-a-week stipend during the training. Upon completion of the three-week training program, candidates were hired by their subcontractor/sponsor and immediately began an apprenticeship position on the KCI New Terminal Project. The Edgemoor team had a support team in place to ensure Workforce Training Program graduates' success, including a retention coordinator to help graduates overcome challenges that could become roadblocks to their long-term growth and success in the industry. In total, the Workforce Training Program included 10 three-week sessions producing 186 graduates. Program graduates earned an average hourly wage of \$19.25. Twenty-seven percent (27%) of the WTP graduates were female.

A few factors that likely contributed to the strong minority and female participation percentages are:

- Extensive public outreach and communication on the goals from the outset of this high-profile and closely-watched project;
- City, community, economic development, and union leader focus on the opportunity presented by this project for their constituents;
- Continuous oversight, including monthly reporting and meetings between the City and Edgemoor;
- Support from other Terminal Workforce Enhancement Programs (in addition to the WTP) intended to remove obstacles to workforce participation; these programs included on-site healthcare, childcare extended hours, and transportation;
- A commitment from the design-builder, Clark/Weitz/Clarkson, to promote safety and inclusivity on the jobsite; and,
- Project scale: with hundreds of union workers on site every day (peak workforce was nearly 1,000 people), even small percentages of female workers translated into a significant cohort.

25 This case study was provided by Edgemoor Infrastructure and Real Estate

C. Characteristics of Quality Workforce Programs for the Construction Trades

As DOT sought to identify the barriers for underrepresented populations to enter into the trades and the recommended actions that would mitigate those barriers, interviews were conducted with organizations serving underrepresented groups. Several of these non-profits focused exclusively on one underrepresented population such as women or people with justice involvement. DOT staff and Fellows from the Harvard Project on Workforce looked for common characteristics across all programs and those characteristics that were particular to programs that are successful with particular sub-populations.

DOT has identified eight characteristics that were common across most programs interviewed. These can be seen below in Table 6.

These eight characteristics are in alignment with both basic recommendations on strong workforce development programs as well as the U.S. Department of Labor's definition of quality pre-apprenticeship.²⁶

The first three characteristics are basic cornerstones of workforce development.

- **(1) Workforce development programs should be industry-led.** It is well known that workforce development programs need to have the backing of industry leaders (i.e., business and labor leaders) so that the individuals participating will be hired in the industry. Industry leaders know best what skills are needed to someone to perform well in the job and workforce development programs should be built around these skills. In the case of construction, it is important to note that many workforce programs do not need to have direct relationships with employers as long as they have relationships with construction unions. Contractors will rely on unions to bring workers onto a project. In areas with lower union density community-based organizations often had relationships with both construction contractors and unions. The Dannon Project in Birmingham, Alabama is a good example.
- **(2) Individualized case management.** Case management is one-on-one assistance that helps people address their goals, in the case of workforce development normally employment goals, meaning that people are receiving assistance finding job opportunities and preparing for them while also addressing other issues that could be barriers to employment. There is significant evidence on the value of case management in workforce development including from the [WIOA Gold Standard Evaluation](#), a random control trial that showed that individuals assigned to “intensive services,” one-on one assistance finding jobs, achieved higher employment and earnings than those with access only to self-service resources. In interviews this came from almost every program, most often expressed as the idea that an individual approach must be taken for each participant and all those participant's needs need to be met. Organizations also spoke of using assessments or a comprehensive intake system to assess each individual's needs and assigned consistent case managers to work with individuals. Assessment tools, interview techniques and other [promising practices of effective case management](#) are available in DOL's Workforce GPS.
- **(3) Sufficient funding for supportive services especially help accessing a personal vehicle and driver's license for work travel.** Consistent evidence on job training efforts has shown that supportive services are a necessary component for successful programs. Case management alone can only help people connect to existing services, but resources are limited, and workforce programs need to be able to help individuals with significant barriers by providing assistance with services like transportation, childcare, and housing. A [recent evaluation of two DOL grant programs](#) highlights the importance of supportive services, while also pointing out the ways in which these services are restricted due to cost and not provided at levels that are adequate to meet individual's needs.

26 U.S. Department of Labor. (2022). Training and Employment Notice. Subject: Building Pathways to Infrastructure Careers: Framework for Preparing an Infrastructure Workforce. <https://www.dol.gov/sites/dolgov/files/ETA/advisories/TEN/2022/TEN%2008-22/TEN%2008-22N.pdf>

Supportive services are a critical component of a [quality pre-apprenticeship programs](#) according to DOL's Employment and Training Administration. DOL's Women's Bureau has also published the [Toolkit for Building an Equitable Workforce](#) with examples of how supportive services make a difference for women's participation in the trades. Given the recognized importance of supportive services in the workforce field, it is not surprising that almost all of the workforce development programs profiled in Appendix A cited their ability to provide significant supportive services as a key to success.

The number one need heard from workforce programs focused on construction is support with transportation including access to a personal vehicle and a driver's license. A car and a driver's license are critical because construction projects can be anywhere, including areas that are not transit accessible, and because work begins early before some transit lines are operating. Yet workers who most need good-paying jobs are least likely to have access to a personal vehicle and license. According to a [study by the Federal Reserve of Richmond](#), access to a personal vehicle is lower for low-income workers. In D.C., for example, only 36 percent of the low-income families that were unemployed had access to a vehicle. Workforce programs interviewed reported helping people with down payments for vehicles; they also needed to help provide legal assistance to individuals to get a driver's license reinstated because of a past revocation. As noted in the study by the Federal Reserve of Richmond, licenses may be suspended based on non-traffic offenses and these policies are more likely to impact Black and Hispanic individuals.

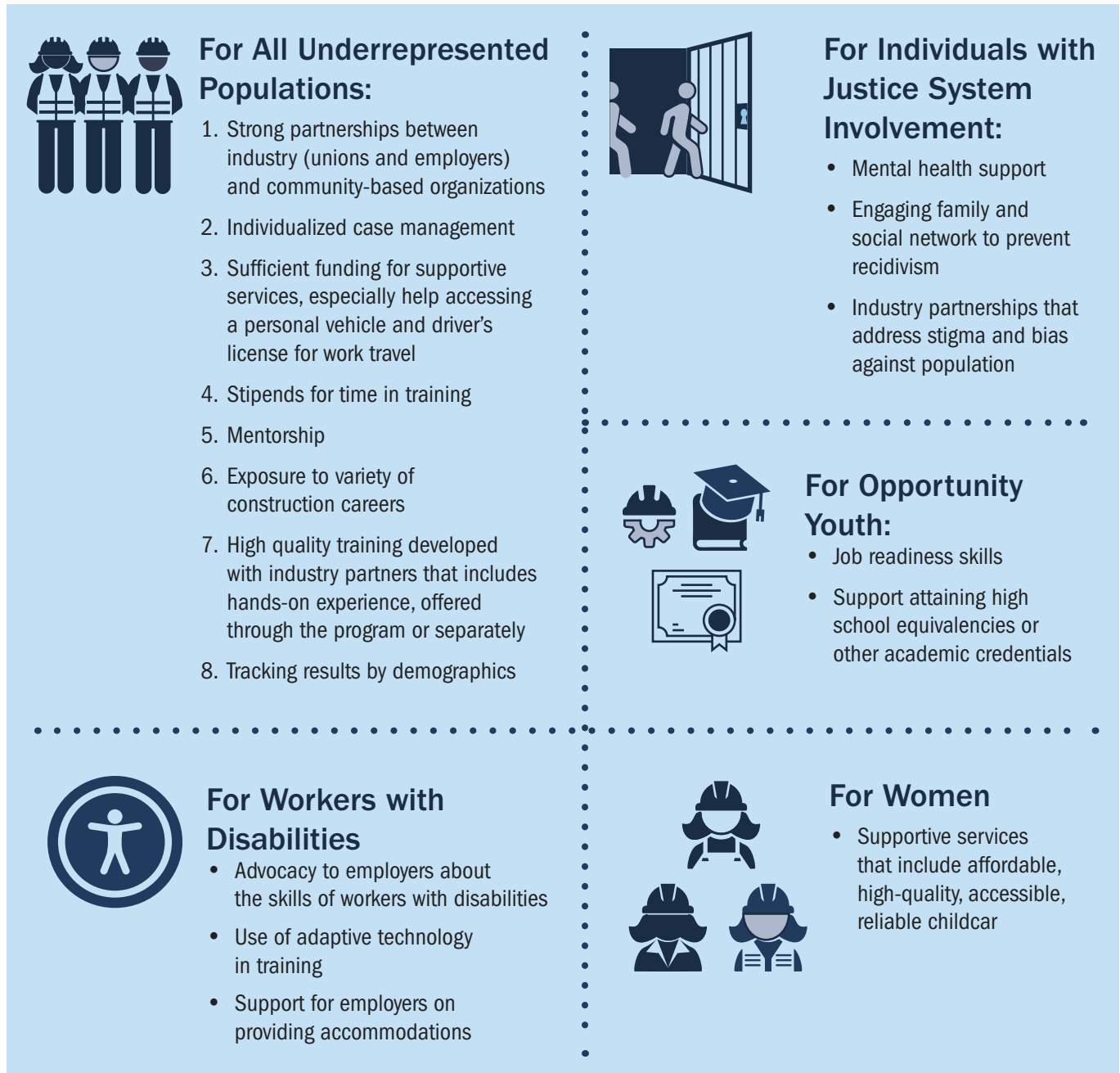
- **(4) Stipends for training time.** The fourth characteristic in quality programs is stipends for the training time. Some may see stipends as part of supportive services, and they are certainly related. If all services are covered including childcare and housing, then a separate stipend may not need to be provided or could be smaller. Alternatively, stipends can be offered at a higher value, obviating the need to help with individual supportive services. For example, in Illinois, they have found that when pre-apprentices are paid for their time, needs for transportation assistance and childcare assistance are lower.

The next two characteristics of high-quality construction workforce programs for underrepresented populations recognize that underrepresented populations have less awareness of the industry and a greater need for mentorship.

- **(5) Mentorship.** Underrepresented populations may feel isolated in training programs. Access to mentors helps individuals to feel a sense of belonging and to receive guidance on navigating career decisions within the construction industry. Some organizations refer to this component as coaching. Mentors or coaches are trained to provide one-on-one support to trainees.
- **(6) Exposure to a variety of construction careers.** Construction careers are varied based on location of the job, the skill required to perform the job, and the basic knowledge to operate equipment to carry out the duties of a particular construction job. Some require heavy lifting. Some require individuals to operate at heights. Some require more math skills than others or different kinds of academic knowledge. For this reason, most construction workforce programs are multi-craft. The National Association of Building Trades Unions supports this multi-craft approach with its MC3 curriculum as does the Association of Building Contractors with the National Center for Construction Education and Research (NCCER) curriculum.
- **(7) High-quality training, including hands-on experience.** Hands-on or work-based learning allows individuals to receive practical training through simulated construction job tasks. For all of the high-quality programs interviewed, this technical training was a component of the overall experience, but not every program offers the construction training and all of the above services in one. Interviews were focused on organizations that are successful at getting participants into jobs and registered apprenticeship and some organizations do not offer the training but rather rely on unions or other organizations to provide that training.

- **(8) Tracking Data and Outcomes by Demographics and Other Characteristics.** The final characteristic is tracking data and outcomes by demographics and other characteristics. As noted above with recommendations for states and local jurisdictions, it's important to track outcomes and assess those outcomes to ensure strong services and make sure that programs are meeting the needs of multiple populations.

Figure 2: Characteristics of Quality Workforce Programs that Get Underrepresented Individuals into Construction Jobs or Apprenticeships



D. Characteristics Of Quality Programs Important For Specific Sub-Populations

The characteristics above were found to be important across programs that have experienced success in serving a wide variety of underrepresented populations. Looking at organizations by the type of sub-populations with which they are successful reveals additional characteristics that seem important for key groups.

Individuals with disabilities

There are significant barriers for individuals with disabilities to enter into construction trades. This is evidenced by the fact that DOT was only able to identify a couple of programs that explicitly serve individuals with disabilities and get them into high-quality construction jobs. Every organization interviewed for this report was asked if they served individuals with disabilities and most said that they did not or did not know. A significant number of the organizations spoke to why these careers would be inappropriate for individuals with disabilities, showing how there is a stigma about individuals with disabilities even among organizations serving other underrepresented populations. Most people assumed that individuals with disabilities would have physical impairments, but the definition of disability is much broader. According to the [Americans with Disabilities Act](#), a person with a disability is someone who:

- “has a physical or mental impairment that substantially limits one or more major life activities,
- has a history or record of such an impairment (such as cancer that is in remission), or
- is perceived by others as having such an impairment (such as a person who has scars from a severe burn).”

Disabilities include temporary medical conditions like cancer, intellectual disabilities, forms of neurodivergence like autism spectrum disorder, and mental health impairments like severe depression. Many disabilities are hidden, meaning that individuals may not know that a person possess a disability unless that person decides to disclose it.

Given the few organizations that were intentionally serving individuals with disabilities it was hard to identify strategies that seem particularly effective. As will be noted later, there are organizations serving populations that have a higher occurrence of certain types of disability, such as justice-involved individuals. The three recommendations below for a quality construction program serving individuals with disabilities are based on the organizations we did talk to and engagement with the Office of Disability Employment Policy at the Department of Labor.

- **Advocacy to employers and unions about the skills of workers with disabilities.** Employers, unions, and the broader community need to be educated on what disability is and the skills that people with disabilities can still bring to the construction industry. Because many assume that disabilities are physical and construction occupations are physically demanding, there can be a sense that people with disabilities cannot work in construction. Yet many disabilities are not physical and even those that are physical may be able to be accommodated. The Americans with Disabilities Act requires that reasonable accommodations can be made to enable a qualified individual with a disability to perform essential job functions. One strategy used by Adaptive Construction Solutions was to provide a wage reimbursement at the beginning of the apprenticeship as a further incentive to employers although Adaptive Construction Solutions notes that new incentives for apprenticeship in the Inflation Reduction Act as well as a history of success in finding permanent employees, this subsidy is no longer needed.
- **Use of adaptive technology in training.** People cannot access careers if they cannot access the training. Few training programs we interviewed made any accommodations for individuals with disabilities. The

most common accommodation discussed was allowing for re-testing but with the same traditional test. More innovative adaptations could include allowing for different modes of testing (for example verbal testing for someone with disabilities that impact writing) or use of technology to help perform tasks.

- **Support for employers on providing accommodations.** Organizations serving individuals with disabilities need expertise in the types of reasonable accommodations that can be provided and have to be able to work with employers to provide support on providing these accommodations. This should include information on accommodations for mental health which is a type of disability that is often not disclosed or accommodated though it can be under the Americans with Disabilities Act.

More information about the strategies employed by some of the organizations interviewed can be found in the appendices below and the summary developed by fellows from the Harvard Project on Workforce.

Significantly more research is needed on what can support the participation and retention of people with disabilities in the construction trades and how to address the multiple barriers and challenges this population faces. First, further investigation is needed to better understand the safety concerns and potential accommodations required for workers with disabilities in construction settings. Research should explore the development of adaptive technologies and safety training programs that cater to varying disabilities. Second, efforts should be directed towards reducing discrimination, stigma, and self-disclosure concerns. Research can delve into effective anti-discrimination policies and strategies within the construction industry and examine the impact of education and awareness campaigns on changing perceptions of workers with disabilities. Finally, more research is needed on the accessibility of pre-apprenticeship and apprenticeship programs, particularly concerning diploma or GED requirements and reasonable accommodations. Studies can assess the effectiveness of support services, adaptive technology, and learning support in ensuring that people with disabilities have equal opportunities to enter and thrive in the construction trades.

Individuals with Justice Involvement

Individuals with justice involvement are heavily underrepresented in the labor market as a whole. A [longitudinal study of individuals released from federal prison in 2010](#) was conducted by the Bureau of Justice Statistics in 2021. This analysis, performed by linking data between the U.S. Census and the Federal Bureau of Prisons found that one third of people released from federal prison did not have employment any time in the four years following their release. Median quarterly earnings of those that were employed was only \$6,000 per quarter even four years out. American Indians and Alaska Natives, Black workers, Hispanic workers, and Asians, Native Hawaiians, and Pacific Islanders were all less likely to find employment in the first quarter after release, with reemployment rates ranging from 33 percent to 37 percent compared to White workers whose reemployment rate was 46 percent. Construction was one of the most common sectors in which people were employed, employing 12.2 percent of those employed.

DOT interviewed four organizations helping to get those with justice involvement into construction careers. More information on those organizations is provided in Section IV below. In summary, interviews with these organizations pointed to several barriers and necessary strategies for appropriately serving this population that were unique relative to other underrepresented these groups.

- **Mental health support:** Many individuals with justice involvement have mental health conditions and have undergone significant trauma. Organizations that served this group well used trauma-informed approaches and had licensed therapists working with participants. It's worth noting that mental health impairments are included in the definition of disabilities for the Americans with Disabilities Act. Organizations serving justice-involved individuals with mental health conditions did not view these as disabilities and did not report serving people with disabilities, which speaks to the need to educate nonprofits and employers about the full spectrum of disabilities and how people can receive reasonable accommodations.

- **Engaging family and social networks:** Social connections can be a positive or negative force in anyone's life and for individuals that had justice involvement their social networks may lead them to further involvement with the justice system if healthier relationships are not built. Organizations brought up this challenge and talked about how they work with friends and family and try to build healthy peer networks, including among individuals who have successfully reintegrated after justice-involvement. As described in greater detail in Section IV, peer mentorship is also a promising practice when working with justice-involved individuals.
- **Industry partnerships that address stigma and bias:** Employers, unions, and contractors often have to be convinced to ignore a criminal record or are hindered from offering opportunities due to legal restrictions that are not tethered to employment requirements. Organizations interviewed spoke of needing to advocate on behalf of participants and sometimes engage in broader policy advocacy to remove the use of criminal backgrounds in hiring. A White House report from 2022, [Incarceration to Employment](#), provides recommendations on strategies to train employers and reduce the use of backgrounds in hiring.

Women

Women are significantly underrepresented in construction, representing only 4.2 percent of construction occupations, up from 2.8 percent in 2003. Looking at the one-pagers on successful programs shows an important trend: unless a program is targeted toward women, it tends to serve very few women. Building Pathways in Boston and the Operating Engineers in Minneapolis are both union-affiliated programs that have a higher percent of women than is typical, but most workforce construction programs interviewed had a small percent of women or could not share data on the fraction of women.

Similarly for government jurisdictions interviewed, very few showed any progress on bringing women into the construction trades. The notable exceptions are the Oregon, the City of Seattle, and Vermont, all of which have programs in the ecosystem dedicated to bringing in women as well as strong tradeswomen groups (Oregon Tradeswomen, ANEW, and Vermont Works for Women, respectively).

Research out of Oregon can be informative since Oregon has been supporting pre-apprenticeship and construction apprentices throughout the state longer than any other transportation agency. The share of women in apprenticeship in Oregon has notably increased. In 2020, women comprised 11 percent of newly enrolled apprentices, representing a 50 percent increase from a decade prior. However, despite these advances, significant obstacles persist for women in construction careers. Some do not complete their apprenticeship leading to a slower rise in the female share of journey-level workers. Structural inequalities, workplace harassment, and the challenges of balancing family responsibilities all contribute to these disparities. Supporting these findings, in a recent survey of tradeswomen, 44 percent reported that they left or considered leaving the trades and more than half of these women cited harassment and lack of respect as their reason.²⁷ The recommendation above to “prevent and address discrimination, bullying, hazing, and harassment on public projects and in apprenticeship programs” addresses this challenge which impacts many underrepresented workers.

The needs for women in construction workforce programs seem consistent with the needs for other

²⁷ Butrica, B., Jones, E., Rosenberg, L., Sattar, S., & Sotelo, V. (2023). A Review of the Literature on Registered Apprenticeships Evaluating Registered Apprenticeship Initiatives. <https://www.dol.gov/sites/dolgov/files/OASP/evaluation/pdf/ERAI-draft-literature-review-final.pdf> p22

populations for the most part. The one primary difference heard in interviews with successful training programs is access to childcare. A recent report prepared for DOL by the Urban Institute, [Women in Apprenticeships and Nontraditional Occupations](#), also finds that access to childcare is a commonly reported barrier for women in the trades.

Non-profits and government jurisdictions that have seen progress in serving women tend to offer childcare support. This typically takes the form of vouchers or subsidies. In Oregon, the amount of the subsidy available to an apprentice is the difference between the cost of the care and the amount that the apprentice is expected to pay, which will not be more than 7 percent of the apprentice's household income. The Oregon Bureau of Labor & Industries will work the apprentice to find an approved provider or work with the Oregon Department of Early Learning and Care to get a family, friend, or neighbor approved to receive the subsidy for providing care.

For parents in the trades, not only is the cost of childcare a barrier but equally challenging is access to early hour care. To be on a construction site for work by 6 or 7AM, a worker needs to drop off their child by 5 or 6AM. Typically, childcare starts at 7AM or 8AM. Through the Care that Works coalition, Building Pathways is engaged in a pilot to provide nonstandard hour childcare and offer scholarships to parents to offset the cost of care.

Workforce programs and the transportation agencies need to partner together to make childcare a part of the services provided if more women are going to be able to join the construction workforce. Childcare should be offered to women in programs to prepare for an apprenticeship and all the way through the apprenticeship until wages are high enough for individuals to pay for childcare on their own. This childcare must be affordable, high-quality, accessible, and reliable, a goal set forth by [the Biden-Harris Administration in a recent Executive Order](#). That Executive Order calls on transportation agencies to issue guidance on how funds from the Bipartisan Infrastructure Law can be used to support childcare. As noted above, DOT has put out [guidance on how State DOTs can use highway formula funding for workforce development and supportive services, including childcare](#), and the program referred to above from Oregon is an example of how State DOTs can provide this critical support and increase the representation of women in the construction workforce and on public projects.

Opportunity youth

Opportunity youth are individuals aged 16 to 24 that are disconnected from both school and work. Some of these youth have high school diplomas and have some college education. Others did not complete high school. Still others may have graduated from postsecondary but have not found a long-term job.

DOT wanted to investigate the barriers for opportunity youth to enter the trades because this group has high rates of unemployment and could benefit from construction careers. Programs that serve opportunity youth, such as Job Corps, YouthBuild, and others offer the credentials, training, and wrap around supports that launch these youth into careers that include the trades and can be important partners in talent development and recruitment. There is a significant opportunity to support the trades workforce by intentionally supporting pathways for young people. For example, among active youth apprentices 16-24, construction is the most popular field, with 38.5% enrolled in these programs. However, young workers are still underrepresented in construction, with the average age of construction apprentices being 29. Together, these data suggest that young workers are an interested and under tapped demographic.

Fellows from the Harvard Project on Workforce interviewed four organizations that serve a substantial number of opportunity youth or serve only opportunity youth. A summary of the barriers that this group faces can be found in Section IV.

The two main program components that seem important for this group that are not necessary for other underrepresented groups are:

- **Job readiness skills.** Young people are less likely to understand how the formal labor market operates and the expectations for any job including jobs in the construction industry.
- **Support attaining credentials.** Many opportunity youth have not yet earned a high school credential, which is often a pre-requisite for entering into the trades. Workforce providers serving this population need to help youth attain these credentials.

Black workers

As detailed in Section I, Black workers remain significantly underrepresented in construction and extraction occupations with no improvement over the past couple of decades in either the construction industry, construction occupations, or apprenticeship programs. When DOT was identifying programs that have increased diversity in the construction workforce, an emphasis was placed on finding programs that are successful in training Black workers and several of the programs profiled in Appendix A are. When asked if there were strategies particularly important for this group, most organizations did not note that there were, which is why additional strategies are not called out for this group in Figure 2.

Among some transportation agencies profiled in Table 2, there was a recognition that bringing Black workers into the trades has been challenging because of the harassment directed at Black workers that do enter the trades. For example, a [Washington Post analysis in 2019](#) noted that nooses were reported on 40 construction sites between 2015 and 2019. Addressing harassment, bullying, hazing, and discrimination was flagged as important for all groups, and that is why it is one of the eight recommendations for transportation agencies to implement. It is important for transportation agencies to understand that this discrimination and harassment comes in different forms for different populations. Steps must be taken to make sure that policies are comprehensive and address all kinds of discrimination and harassment. The recommendation around mentoring was also identified as important for Black workers, and entities interviewed talked about the importance of providing Black mentors for Black apprentices and trainees.

E. Other Government Policies Needed to Complement Workforce Strategies

It is worth noting that there are systemic barriers to employment in construction that workforce policies alone cannot address. For example, childcare is a significant barrier to individuals entering into the trades. Individual programs or transportation agencies typically address this problem through providing subsidies or vouchers for childcare but there are broader problems in the childcare market including job quality issues and low wages for childcare workers, which leads to childcare shortages and a lack of capacity among providers that these individual programs and entities cannot address. A whole government approach at the city or state level is needed to address this challenge. As an example, the Oregon legislature has passed a bill that will require Business Oregon and the Department of Early Learning and Care to work together to [provide grants and loans for childcare infrastructure](#), helping tackle the challenge of the high cost of childcare facilities.

Transportation is a similar challenge as construction jobs require workers to drive to different projects. This requires a personal vehicle, which can be expensive, and it also requires a driver's license for which there are often barriers that go beyond costs. Access to a driver's license is driven by many policies. As noted above, this can include [policies about what may cause someone to lose their license](#) and reentry policies for those that have been incarcerated. Another issue impacting the ability to achieve driver's licenses is the lack of driver's education courses. Some schools do not offer driver's education anymore and in others there is a cost to it. In Wisconsin, a bipartisan bill was passed last year that will provide funding to Wisconsin DOT to [provide free driver's education to low-income students](#).

Section III: Local and Economic Hiring Preferences

- A. Efforts to encourage local and economic hiring preferences on federally-assisted projects
 - B. Summary of Successful Local and Economic Hiring Provisions
 - C. Populations Prioritized through Hiring Preferences.
 - D. Monitoring, Enforcement, and Reporting of Local/Economic Hire Policies
 - E. Complementary Workforce Initiatives
 - F. Challenges with Hiring Preferences
 - G. Evaluating Local & Economic Hiring Preferences
- 

Section III: Local and Economic Hiring Preferences

The Bipartisan Infrastructure Law (BIL) Section 25019 enables local, geographic, or economic hiring preferences for construction labor in most DOT funded projects. Previously, special DOT approval was needed for such preferences. Since November 2021, BIL Section 25019 allows grant recipients and subrecipients to include hiring preferences of a geographic or economic nature for a contract bid, or in pre-hire agreements (such as project labor agreements (PLAs)), as long as they comply with state and local laws and procedures. These hiring preferences can be included in bids or pre-hire agreements without prior approval of DOT. The BIL's rules around hiring preferences pertain to labor in projects funded by Titles 23 or 49 of the US Code, encompassing grants from agencies like Federal Aviation Administration (FAA), Federal Highway Administration (FHWA), Federal Motor Carrier Safety Administration (FMCSA), Federal Railroad Administration (FRA), Federal Transit Administration (FTA), National Highway Traffic Safety Administration (NHTSA), Office of the Secretary of Transportation (OST), and Pipeline and Hazardous Materials Safety Administration (PHMSA).

To comply with BIL, all hiring preferences must be based on either (1) geographic boundaries based on non-economic factors, (2) geographic areas based on economic factors, and/or (3) the economic conditions of the worker. More information on how these are defined can be found in an earlier DOT report: [Creating a Local Construction Workforce: Assessment of Current Use of Local and Economic Hiring Preferences](#).

This section of the report explains how DOT is promoting the use of hiring preferences, showcases city and transportation agency examples of using hiring preferences and their benefits, and provides recommendations on how hiring preferences should be implemented.

A. Efforts to encourage local and economic hiring preferences on federally-assisted projects

The Biden-Harris Administration and DOT are actively promoting the use of hiring preferences as a way to include underrepresented groups in construction. To help promote the adoption of local/economic hiring preferences, DOT has included these kinds of provisions as a selection criterion in most discretionary grants so that applicants have an incentive to consider the use of local and economic hiring preferences. DOT has also promoted local hire through [a webinar](#) and other technical assistance.

Now that hiring preferences are permissible, DOT does not routinely receive information on whether all federally-assisted projects use hiring preferences. Although not comprehensive, DOT has some ways to identify projects that include hiring preferences. One way is looking at local hire provisions that are in Project Labor Agreements (PLAs). FHWA approves all PLAs on federally-assisted projects and, as of December 5, 2023, had approved \$3.3 billion worth of projects with PLAs that also include local hire agreements. This covers 53 projects, a significant increase from when local hire was only allowed under pilot authority for 16 projects across FTA and FHWA.

Signed grant agreements in which grantees are asked to note if they are using local and economic hiring preferences serve as another source of information for DOT on the use of local hire agreements. Based on these grant agreements as well as signed project labor agreements, below are examples of DOT awardees and grantees that have adopted new local and economic hiring provisions for their projects.

- The Earthquake Ready Burnside Project in Multnomah County, Oregon has adopted and will be applying hiring preferences within 29 zip codes specifically around five socio-economic indicators including: working-age adults with income below 125% of the poverty level; adults with less than a high school education; working-age adults who worked part-time or part-year in the last 12 months; households renting (compared to households owned); and total net worth.

- The Humboldt Bay Offshore Wind Minimum Viable Port project recently awarded has a project labor agreement that includes hiring preferences that prioritize hiring for a number of kinds of workers including: workers enrolled as a tribal member or a spouse of a tribal member of a federally recognized Tribe in the local area; residents of certain communities; individuals who have completed a Building Trades Multi-Craft Core Curriculum Pre-Apprenticeship Program; graduates of local high schools and colleges; and others.

DOT and White House staff supported the Baltimore Workforce Hub focused on building up the workforce for Baltimore transportation projects including the \$6 billion Frederick Douglass Tunnel Bridge. As a part of the [Workforce Hub announcements](#), Amtrak and the Baltimore-DC Building Trades committed to a hiring preference on the project. At least 50 percent of all apprentice hours and at least 20 percent of all journey hours will come from specific ZIP codes, including those around the program area and from disadvantaged communities in the City of Baltimore. This will be the first time that Amtrak will use local and economic hiring preferences.

B. Summary of Successful Local and Economic Hiring Provisions

This section will highlight similarities in successful strategies and challenges faced by jurisdictions that have implemented hiring preferences. The data presented in this analysis is derived from extensive reviews of materials and resources provided by the jurisdictions and publicly available, including policy papers, reports, and official websites. Additionally, interviews were conducted with relevant stakeholders to gain first-hand insights into their hiring preferences. The majority of the resources pertaining to hiring preferences can be accessed online.

Jurisdictions were chosen based on those determined to use hiring preferences in DOT's Spring 2023 report on hiring preferences. Jurisdictions also had to have data available on the demographics of the workforce on their projects. Many entities did not have that data available and thus were not included in this report.²⁸ In some cases the lack of data is a failure to collect demographic data and in other cases data were not available because the projects are new. For example, the I-81 project in Syracuse is using hiring preferences but the project is in early phases. [Project Case Study 2](#) provides information on the I-81 project and results to date. The following jurisdictions from the earlier report are included below: Los Angeles Metro, New Orleans, San Francisco, and Seattle. Destination Crenshaw is also profiled below. Destination Crenshaw is a project in Los Angeles using hiring preferences with strong results, especially for Black workers.

Table 7 summarizes the policies of each of these entities as well as the outcomes of the policies. Below the table is more information on each program based on interviews with jurisdictions. It is important to note that data collected and provided across jurisdictions is not uniform. The outcomes reported came from various outcome reports and time frames.

²⁸ It should also be noted that not every jurisdiction was reached out to because of the desire to have geographic diversity. For example, US DOT did not reach out to King County or the Port of Los Angeles because there was already information from the City of Seattle and Los Angeles Metro, respectively.

Table 7. Local and Economic Hiring Preferences and Outcomes by Jurisdiction

Jurisdiction	Geographic/ Economic Preferences	Individual Preferences	Overall Target	% of Total Hours Worked
Destination Crenshaw	<p>TIER 1: Residents in the two (2) ZIP codes around the project site</p> <p>TIER 2: Residents in the local council district ZIP codes, which identifies their boundaries</p> <p>TIER 3: Residents in the Los Angeles County ZIP codes with higher percentages of transitional/disadvantaged populations than the County average</p> <p>TIER 4: Other qualified employees which reside in LA County. Specifically focused on the cities of Riverside and Rialto, which is where many people from the Crenshaw community have been displaced.</p>	<p>Transitional Workers:</p> <ul style="list-style-type: none"> • Veteran • Having a documented history of involvement with the justice system • Homeless • Graduates of multi-craft core curriculum (MC3) Apprenticeship Readiness Program • Having household income below 50% of the LA County's median annual household income • Emancipated from foster care system • Receiving public assistance • Lacking a GED or high school diploma • Being an apprentice with less than 15% of the apprenticeship hours required to graduate to journey level • Being a custodial single parent • Suffering from long-term unemployment 	<p>40% from Tier 1 to 4, with a 70% aspiration goal from all Tiers</p> <p>10% Transitional workers</p>	<p>85.60% local residents from Tier 1 to 4</p> <ul style="list-style-type: none"> • 40.42% from Tier 1 • 11.06% from Tier 2 • 6.57% from Tier 3 • 27.55% from Tier 4 <p>40.65% Transitional workers</p>

Los Angeles Metro	<p>* Community Area Resident” means primary place of residence is within an Economically Disadvantaged Area or an Extremely Economically Disadvantaged Area and is within a 5-mile radius of the project.</p> <p>*Economically Disadvantaged Area” means a ZIP code in the county that includes a census tract or portion thereof in which the median annual household income is less than \$40,000 per year.</p> <p>*Extremely Economically Disadvantaged Area” means a ZIP code that includes a census tract or portion thereof in which the median annual household income is less than \$32,000 per year.</p>	<ul style="list-style-type: none"> • Disadvantaged Workers: Satisfying at least two of the nine disadvantaged categories: • Homeless • Single custodial parent • Receiving public assistance • Lacking GED or high school diploma • Criminal record or history with criminal justice system • Chronically unemployed • Emancipated from foster care • Veteran from Iraq or Afghanistan war • Apprentice with <15% hours needed to graduate to journey worker 	<p>40% economically disadvantaged census tracts</p> <p>10% Disadvantaged workers</p> <p>20% Apprentices from targeted census tracts</p>	<p>58.14% local residents from targeted census tracts</p> <p>10.96% Disadvantaged workers</p> <p>21.20% Apprentices from targeted census tracts</p>
New Orleans	New Orleans residents	<p>Disadvantaged Workers: household income of equal to or less than 50 percent of Area Median Income (AMI), adjusted for household size OR one of the following barriers</p> <ul style="list-style-type: none"> • Veteran • Homeless • Receiving public assistance • Suffering from chronic unemployment • Custodial single parent • Military veterans • Emancipated from the foster-care system • Having a prior arrest or conviction 	<p>50% local</p> <p>30% of local workers must be Disadvantaged Workers</p> <p>30% of apprentice hours performed by Disadvantaged Workers</p>	<p>40% local residents from targeted areas</p>

San Francisco	<p>Local resident who resides in the census tract in the city with a rate of unemployment in excess of 150% of City Unemployment according to the State’s Employment Department</p> <p>At commencement of work, the local resident’s household income is less than 80% of Area Median Income derived from the Department of Housing and Urban Development (i.e., A family of 4 making below \$90,500 a year)</p>	<p>Disadvantaged Workers:</p> <ul style="list-style-type: none"> • Homeless • Custodial single parent • Receiving public assistance • Lacking GED or high school diploma • Participating in a Vocational English as second language program • Criminal background or involved in a criminal justice system • Veteran 	<p>30% economically disadvantaged census tracts</p> <p>15% Disadvantaged</p> <p>30% Apprentices from targeted census tracts</p>	<p>34% from targeted census tracts</p> <p>51% Apprentices from targeted census tracts</p>
Seattle	<p>TIER 1: Residents in economically distressed ZIP codes within Seattle</p> <p>TIER 2: Residents in economically distressed ZIP codes in King County (non-Seattle)</p> <p>Economically distressed ZIP codes are based on:</p> <ul style="list-style-type: none"> • People living under 200% of the federal poverty line • Unemployment rate • Those over 25 without a college degree 	<p>34% from Tier 1 and Tier 2 (2022 goal)</p>	<p>25% from priority ZIP codes, plus 13% good faith efforts*</p>	

**Good faith efforts are when a contractor requests to hire a Priority Hire worker from the union hall, and none are available for hire. There has been a huge spike in demand for Priority Hire workers in the last several years, due to new Priority Hire programs at King County, the Port of Seattle, Seattle Public Schools and several other large private projects. Until there is a more long-term impact from Seattle’s collective efforts to bring more Priority Hire workers into the industry, the increased demand may affect contractors’ ability to find and hire them on our projects.*

Destination Crenshaw

[Destination Crenshaw](#) is a private 501(c)3 non-profit driving the economic and cultural revitalization of the Crenshaw corridor. The Destination Crenshaw project is a reparative development project to celebrate and preserve the history and culture of African Americans in Los Angeles, California. The project has a PLA focused on creating career opportunities for Crenshaw residents and transitional workers living in other areas.

Positive outcomes in workforce representation

Destination Crenshaw's commitment to empowering Black and Brown communities is evident in their data. As of June 2023, African Americans accounted for 35.67% of total hours worked. Equally noteworthy is that 40.65% of hours were contributed by Transitional workers. Destination Crenshaw reports the highest percentage of local residents, Transitional or Disadvantaged workers, and African Americans working on projects among those in the Los Angeles region.

Demographic groups with limited growth in workforce representation

Female participation remains underrepresented and static. Female participation and retention have not exhibited growth, with women contributing 4.38% in December 2022, 2.90% in May 2023, and 2.82% total hours worked in June 2023. It is worth noting, however, that among female workers, Black women comprise 62.5% of the total women, and one-third of the pre-apprentice graduates are Black women.

Strategies for achieving local hire goals and enhancing diversity

Destination Crenshaw attribute their success to various strategies, including the creation of the PLA which outlines a tiered system for targeting local hires. The hiring preferences focus on socio-economic factors by targeting zip codes right around the project, zip codes that are identified as their local council district, and zip codes with higher percentages of transitional/disadvantaged populations than the county average. Refer to Table 1 for the Tier breakdown. In addition, the PLA included that general contractors shall retain a Jobs Coordinator who will establish an outreach strategy at all Tiers to increase the number of underrepresented workers on construction projects. Destination Crenshaw collaborates with 2nd Call, a community-based organization that performs the Jobs Coordinator role by actively engaging in workforce development, helping contractors meet project labor and local hire requirements through community engagement events and regular interactions. Destination Crenshaw's Jobs Coordinator holds weekly community meetings and monthly information sessions to provide a consistent and open line of communication for community members to understand and learn more about the workforce workflow opportunities.

Challenges

Destination Crenshaw is facing challenges in getting women on jobsites. Placement of women on construction jobsites has been challenging despite women accounting for half of the attendees and graduates from pre-apprenticeship programs. Destination Crenshaw is collaborating with pre-apprenticeship and apprenticeship programs to provide hands-on training and experience that is required to be placed onto a jobsite, which has been one of the biggest obstacles for getting women on construction projects.

Los Angeles Metro

[Los Angeles Metro](#) has established a PLA that encourages construction employment and training opportunities within economically disadvantaged areas.

Positive outcomes in workforce representation

LA Metro has surpassed their goal of 23% in terms of participation by BIPOC communities. In 2022, the collective BIPOC participation across the 13 active projects stood at an average of 66.32%. As of June 2023, this figure has risen to 68.08% across the 17 active projects.

Additionally, the African American population participation of total hours worked has risen from 5.01% in 2022 to 6.5% in June 2023. LA Metro has also exceeded their hiring preferences for economically disadvantaged communities, disadvantaged workers as well as apprenticeship goals program wide. Refer to Table 1 for latest outcome data as of June 2023.

Demographic groups with limited growth in workforce representation

Female workers remain underrepresented on projects. Their goal of 6.9% women participation has not been met but it has stayed at a consistent percentage throughout the years. In 2019, women completed 3.65% of hours on active Metro projects, 3.89% in 2022, and 3.70% as of June 2023.

Strategies for achieving local hire goals and enhancing diversity

[LA Metro's PLA](#) provides hiring provisions and direction for contractors to meet targeted hiring requirements. It is required that contractors and unions first refer to Community Area Residents. After the available pool of community area residents is exhausted, then they may refer any local residents from Extremely Economically Disadvantaged Areas in LA County and when that has been exhausted, they must refer to local residents from Economically Disadvantaged Areas in LA County. Refer to Table 1 for socio-economic definitions by jurisdiction. In addition, the PLA provides a direct link between the apprentice programs and public projects. Apprentices must come from an apprenticeship program as defined in their PLA and unions shall track retention of apprentices hired under the local hire policy through completion of the Project Work. The signatory union is responsible for collecting the tracking information and submit quarterly retention reports to the Los Angeles County Metropolitan Transportation Authority (LACMTA).

Challenges

The initiative has faced some challenges as there is a general learning curve in adopting and embracing policies. The initiative encountered difficulties during its inception in 2012; however, after implementing financial penalties, improved acceptance and compliance were observed.

New Orleans

New Orleans HireNOLA program links employment opportunities created by city construction contracts and economic development projects, connecting them with a qualified local workforce.

Positive outcomes in workforce representation

New Orleans is seeing growth in local hire numbers each year. New Orleans local hire workforce participation rate on city-funded projects increased from 30.42 percent prior to 2018, to 40 percent in 2022. In 2016, HireNOLA ordinance (Chapter 70, Article IV, Division 3 of the [Code of the City of New Orleans](#)) required 30 percent of all work hours on applicable city contracts to New Orleans residents. This goal will increase by 5 percent each year until 2020, with the ultimate goal of sending at least half of the work hours to locals. While the current goal of 50 percent is now implemented, the outcomes were temporarily impacted by COVID-19, and the program is back on track to achieve this impressive objective.

Demographic groups with limited growth in workforce representation

The City does not capture comprehensive trend data regarding demographic groups in the projects that use local hiring preferences.

Strategies for achieving local hire goals and enhancing diversity

Working collaboratively between partners, programs, investment, and the compliance team has been identified as an important strategy that helped to contribute to improved outcomes. Prime contractors and their subcontractors are required to use HireNOLA's First Source database for recruitment, referral, and placement of all new hires for employment opportunities created by an applicable contract. First Source connects the local workforce to various employment opportunities throughout the City of New Orleans. Contractors must make "good-faith efforts" to award hours to local and disadvantaged workers. These good-faith efforts are detailed in the [HireNOLA Ordinance](#) and directs contractors to inform the Office of Workforce Development's (OWD) of potential vacancies on covered projects, contact qualified individuals provided by OWD for filling vacancies, advertise vacancies at the job site, utilize registered apprenticeship programs and conduct meetings with potential subcontracts to educate on hiring preferences and goals.

Challenges

HireNOLA's primary challenge is scale. Covered projects encompass any contract to which the City is a party for construction of public buildings or public works of the City of New Orleans in excess of \$150,000; and any Cooperative Endeavor Agreement to which the City is a party and through which the City provides tax incentives for economic development projects in excess of \$150,000. However, the availability of 100% city-funded projects is limited, which affects their ability to reach and recruit as many individuals as could potentially benefit from the program. As of June 2023, HireNOLA has three active City projects.

San Francisco

The CityBuild program, under the Office of Economic & Workforce Development in San Francisco, provides comprehensive pre-apprenticeship training, construction administration training, construction referrals and placements for San Francisco residents.

Positive outcomes in workforce representation

The implementation of local hire policies has resulted in an increase in BIPOC participation. Prior to local hire, the average BIPOC participation rate was 20% and since local hire has been implemented, the minority participation has increased reaching 55 percent across all workers. However, among San Francisco workers, the BIPOC participation accounted for 83 percent in 2022. The average percentage of hours worked by African Americans on projects is 6.4 percent. However, when the demographics are further broken down by geographic region, African Americans who reside in San Francisco account for 13.4 percent of the hours worked. This is a good example of how targeted local hiring preferences that prioritize individuals from economically disadvantaged areas in the city is increasing diversity and targeting local residents.

The data reported in the [2023 Local Hiring Policy Annual Report](#) reflects demographic data for workers who reported work hours on projects that are covered by the Policy. Using these numbers, the Office of Economic and Workforce Development (OEWD) can compare demographic percentages for San Francisco residents against residents of other jurisdictions who perform work on San Francisco public works projects. When examining minority and female work hour percentages of San Francisco workers against workers residing in other jurisdictions, higher percentages were seen.

Demographic groups with limited growth in workforce representation

Female workers remain underrepresented on projects. The average participation of women on construction projects across all jurisdictions remain static, with women accounting for 3.25% of hours worked in 2021 and 3.15% in 2022. When further broken down, women who reside in San Francisco accounted for 4.2% of hours worked in 2022.

Strategies for achieving local hire goals and enhancing diversity

CityBuild provides comprehensive pre-apprenticeship and construction administration training to San Francisco residents, which creates employment opportunities. In addition, CityBuild has a direct entry agreement with the unions to refer graduates for employment on covered projects.

CityBuild's curriculum includes training that would normally be required by apprentice programs within each trade in addition to providing MC3 (Multi-Craft Curriculum) certification through the North America's Building Trades Union. By preparing CityBuild Academy graduates with additional industry knowledge and certifications, CityBuild is able to create streamlined pathways for graduates to directly enter local unions and access immediate employment. Additionally, CityBuild works directly with community-based partners to target workers in communities of color in its recruitment process for new Academy students. CityBuild has also partnered directly with project owners to create training program specifically for women entering the trades, such as its partnership with Mission Rock Partners and the San Francisco Giants that enabled 14 women to be employed by contractors working on the Mission Rock project. Similarly, CityBuild's partnership with the San Francisco Housing Authority targets public housing residents for training programs that allow graduates to seamlessly transition into employment.

Challenges

San Francisco shares the same struggles in economic recovery post-pandemic with the construction sector taking a longer time to recover. CityBuild has developed a retention component to its program services ensuring that graduates of the training Academy remain employed. However, it is worth noting that the primary goal of CityBuild Academy is to create opportunities for its graduates to be employed by local unions. Wrap-around services are available to the graduates, but highly dependent on the worker's motivation to continue seeking out CityBuild services after they have been employed and have moved across projects or contractors.

Seattle

The City of Seattle employs a Priority Hire program that prioritizes the hiring of residents that live in economically distressed areas in Seattle and King County.

Positive outcomes in workforce representation

African American participation increased from 4% prior to the implementation of Priority Hire in 2013 to 7% in 2022. This is partly the result of strong strategies to target diverse zip codes.

Demographic groups with limited growth in workforce representation

Challenges persist in augmenting women's participation and retention rates. In 2022, the share of hours worked by women on covered projects was 7% compared to the average of 9% from 2013 to 2021. The pandemic has had a huge impact on women across all sectors, forcing many to leave their jobs to care for children or other family members.

Seattle is working towards targeted action need to be taken to address these barriers through community investments. One example is through a mentorship pilot with the Cassandra Banks Foundation that focuses on apprentices who identify as women of color. The mentorship program was designed with a human-centered approach and aims to empower communities of color by raising awareness of and access to nontraditional

and stable career paths for women of color, understanding that when they thrive, their families and communities thrive as well. It is noteworthy that while growth of women's participation is still a challenge, Seattle is reporting a higher participation rate of women in construction projects than the national average, thanks to its partnerships with women focused recruitment and retention organizations.

Strategies for achieving local hire goals and enhancing diversity

To achieve these successful results, the City has strategically formed partnerships and invested in unions, apprenticeship programs, contractors, community-based organizations, and other public agencies. Education, training, and monitoring compliance also contribute to the effectiveness of their approach. Seattle places emphasis on prioritizing regional perspectives and fostering collaborative efforts. They have invested time and effort in establishing the Regional Public Owners Group, which enables collective problem-solving across the region. This has led to collaborative workforce investments, data-sharing agreements with labor and industries and streamlined reporting processes for pre-apprenticeship programs.

In the community workforce agreement (CWA), [Preferred Entry \(Article XV\)](#)²⁹ creates a direct link from workforce investments in outreach, pre-apprenticeship training and retention to hiring on covered City projects. Preferred Entry is a hiring requirement that helps diversify the construction workforce, as workers coming through Preferred Entry training programs often live in economically distressed communities, are women, people of color, at-risk youth and those transitioning from the justice system.

Challenges

Seattle acknowledges several challenges, including the complexities of establishing formal agreements for co-investment, which require substantial effort. Administrative challenges include addressing team capacity, bringing in new partners, and the process of securing funds through contract wins.

Another significant challenge is understanding the collective Priority Hire demand and impact among the four public agencies with Priority Hire programs in the region. Seattle has made collaborative efforts around workforce investments and general upcoming demand, reaching a stage where joint performance and impact on economically distressed communities can be considered.

C. Populations Prioritized through Hiring Preferences

This section will highlight the similarities in preferences observed in various jurisdictions' local/economic hire policies. The policies aim to uplift local residents of economically distressed areas and target disadvantaged individuals, leading to successful goal attainment and even surpassing expectations.

Focus on Economically Disadvantaged Local Communities

All jurisdictions share common hiring preferences to recruit local residents residing in economically disadvantaged areas within their priority regions. Jurisdictions utilize hiring preferences to identify communities with a higher percentage of economically disadvantaged individuals compared to the county or federal average. They define priority hire ZIP codes based on criteria such as poverty rate, unemployment rate, and per capita/household income.

By targeting these ZIP codes, they aim to uplift the local community, which often comprises of diverse economic and racial demographics. For instance, in their 2021 Priority Hire Annual Report, Seattle reported that 59% of construction workers identifying as people of color lived in priority ZIP codes, compared to only 26% in non-priority ZIP codes.

²⁹ City of Seattle. (2021). Community Workforce Agreement. Preferred Entry Article XV p. 19. <https://seattle.gov/documents/Departments/FAS/PurchasingAndContracting/Labor/fully-executed-2021-city-of-seattle-CWA.pdf>

Each jurisdiction sets its own priority hiring preferences, such as:

- Destination Crenshaw: Prioritize households with income below 50% of the area median income.
- LA Metro: Focus on workers residing in households with a median income of less than \$40,000 per year.
- New Orleans: Target individuals with income equal to or less than half of the New Orleans-area median income.
- San Francisco: Target households with income less than 80% of the Area Median Income and/or experiencing unemployment rates exceeding 150% of City Unemployment.
- Seattle: Focus on people living 200% below the federal poverty line.

Utilization of Tiered Systems

Most jurisdictions use a tier system to identify the economically disadvantaged areas, often referred to as priority ZIP codes. The tiered system considers both geographic and economic preferences when determining the tiers of priority ZIP codes. Contractors are required to hire workers from these ZIP codes for a specified share of total project hours.

Targeted Disadvantaged/Transitional Workers

In addition to geographic preferences, jurisdictions also consider and have set goals for individuals meeting certain criteria such as living at or below the poverty line, veteran status, housing insecure, head of a single-parent household, criminal justice history, chronic unemployment, or experience with the foster care system. The individuals who meet these requirements are referred to as disadvantaged, transitional, or targeted workers and often experience chronic unemployment due to these career-limiting circumstances.

D. Monitoring, Enforcement, and Reporting of Local/Economic Hire Policies

This section aims to explore the common approaches used in monitoring, enforcing, and reporting local/economic hire policies. Understanding these practices can shed light on successful strategies for achieving workforce development goals and fostering compliance among contractors.

Monitoring and Compliance

In the realm of workforce investment, a meticulous and systematic approach to monitoring and compliance efforts is imperative to ensure the effective evaluation of workforce investments and the consistent achievement of hiring goals. Jurisdictions employ a variety of strategies to establish benchmarks and metrics that allow for the tracking of progress, both on an annual and monthly basis. In order to execute these efforts seamlessly, several key staff roles have been established within the compliance framework. These include Compliance Teams, who bear the responsibility of overseeing adherence to regulations; Program Monitors, tasked with monitoring project-specific compliance; and Program Analysts, who dissect data for insights. This proactive dissemination of information empowers contractors to maintain a real-time awareness of their progress, swiftly identify areas of deficiency, and implement corrective actions in a timely manner.

A consistent highlight across various jurisdictions is the pivotal role of Jobs Coordinators in ensuring compliance. Often functioning as a bridge between projects and compliance teams, Jobs Coordinators are vital to proactive contract engagement, on-site visits, meticulous data review, comprehensive record analysis, and insightful interviews. This multifaceted role not only guarantees compliance but also addresses emerging issues in a proactive manner. The significance of Jobs Coordinators is further emphasized by

their role in fostering a positive worker experience. In the case of Seattle, the Jobs Coordinator assumes the role of a mentor for pre-apprenticeship graduates, providing a reliable channel for support. Due to their close collaboration, the graduates are well-acquainted with the Jobs Coordinator, and may feel more comfortable addressing grievances to their coordinator while on the jobsite, rather than the project manager. Moreover, Jobs Coordinators are well-versed in hiring preferences and possess knowledge of solutions to surmount employment barriers. An innovative approach to this role is witnessed in Destination Crenshaw's Jobs Coordinator, known as 2nd Call. This unique coordinator takes a holistic approach by conducting gang intervention sessions and offering soft skills training, thereby promoting healthy socialization.

The meticulous monitoring and compliance efforts within workforce investment are driven by a collaborative effort between compliance teams, Jobs Coordinators, and various other stakeholders. This comprehensive approach not only ensures adherence to regulations but also fosters a positive and supportive environment for workers. Through consistent data reporting, proactive intervention, and innovative strategies, jurisdictions can effectively navigate the complex landscape of workforce investment, ultimately leading to the realization of hiring objectives and broader socioeconomic growth.

Financial Penalties

Financial penalties are commonly included in local hire policies across various jurisdictions, aiming to ensure compliance. During an interview with San Francisco, they shared their proactive approach to enforcing penalties and implementing corrective measures when contractors fail to meet local hire targets.

The process entails the compliance team submitting monthly data points and generating reports for all local hire projects. These reports keep contractors informed about their progress, current status, and potential penalties if the stipulated requirements are not met by the project's conclusion. This proactive approach offers contractors ample time to rectify any deficiencies, meet the criteria, and hire designated individuals, either from the CityBuild program or through their independent recruitment efforts.

In terms of penalty administration, San Francisco's hiring preferences stands out due to its incorporation of off-ramps and corrective actions. Penalties are evaluated upon the project's closure and final payment, including an assessment of retention. However, the policy also accommodates alternative routes for non-compliant contractors. If a contractor realizes that meeting the local hiring requirement by the project's end is unfeasible, they can collaborate with the City to negotiate hiring credits. Three distinct off-ramps are outlined:

- **Off-Site Credit:** Contractors can hire local residents and assign them to projects outside the city that are exempt from local hire regulations, utilizing a one-to-one credit system.
- **Direct Entry:** A partnership between unions and contractors enables the hiring of program graduates, fostering a mutually beneficial relationship while meeting local hire goals.
- **Sponsorship:** Contractors have the option to sponsor program graduates for entry into union apprenticeships, subsequently employing them as part of their workforce.

San Francisco's local hiring practices thus demonstrates a multifaceted and flexible approach that combines penalties with opportunities for corrective actions, fostering compliance and community engagement in the construction industry.

Data Collection and Reporting

Cloud-based SaaS solutions are utilized by all jurisdictions for certified payroll, construction site compliance, and workforce reporting. The jurisdictions use these platforms to report the performance and demographics by tracking labor hours through certified payroll. Contractors are required to upload weekly payroll data.

Workforce data is collected through certified payroll, and investment data is obtained through the state. Combining this with broader community data helps ascertain the actual impact of policies. Nonetheless, linking these pieces together to tell a cohesive story requires significant effort and dedicated personnel.

The insights from the Seattle interview highlight their decision to opt for an outside contractor over an in-house system. The outside contractor manages a data warehouse and then Seattle can employ software tools to establish a connection with this warehouse, enabling the retrieval of comprehensive data for conducting customized queries based on specific analytical needs. In contrast, an in-house system might possess similar data but could lack the thoroughness of information collection, thereby potentially leaving unaddressed errors without the sustainability to handle them internally.

Destination Crenshaw stands out for presentation of demographic data. Their data collection encompasses a wide range of metrics, including actual counts and percentages of total workers, cumulative work hours, and other quantifiable aspects. These metrics are further delineated across various parameters, such as priority ZIP codes, demographic composition, gender distribution, veteran status, and disadvantaged populations. These valuable insights are regularly detailed in their monthly status reports. Additionally, an integral part of their data ecosystem is the project contractor, a union signatory, providing a monthly inclusivity report. Destination Crenshaw compiles monthly reports encompassing the distribution of total hours worked among various racial, gender, and disadvantaged demographics across all ongoing projects. Presenting demographic data in this manner facilitates a continuous data collection process, ensuring more comprehensive aggregated data rather than being strained to individual project records. This approach of reporting and systematic data archiving offers an intricate longitudinal perspective on trends over time.

Simultaneously, 2nd Call, a community-based organization, enhances the comprehensive data landscape by facilitating community engagement and furnishing detailed meeting reports. In enhancing their data-driven strategy, Destination Crenshaw has enlisted a dedicated program monitor, possessing deep insights into union dynamics and process intricacies. This pivotal role collaborates closely with both the community and the project contractor, seamlessly placing workers from the local hire pool into diverse trades. This orchestrated collaboration underscores Destination Crenshaw's multifaceted approach, skillfully utilizing data to navigate local hiring preference implementation, cultivate valuable partnerships, and drive impactful community engagement. The practice of consistently collecting and reporting such intricate information on either a monthly or quarterly basis underscores the dedication to transparency and comprehensive reporting on multiple levels.

E. Complementary Workforce Initiatives

Complementary workforce initiatives are critical tools for promoting local and diverse community participation in the construction industry. While policies play a role, it is the strategic partnerships and investments that make these agreements effective. This report examines the significance of partnerships and pre-apprenticeship programs in achieving workforce diversity and inclusion, along with two case studies showcasing successful implementations.

Partnerships

Partnerships play a pivotal role in supporting local hire initiatives and diversifying the construction workforce. The establishment of partnerships and investments with various stakeholders, including local unions, apprenticeship programs, contractors, community-based organizations, and other public agencies, ensures additional resources and opportunities are made available. These additional investments foster community populations' involvement in local hire initiatives by enhancing outreach and recruitment efforts, providing training opportunities, and offering career navigation and barrier removal assistance to increase apprenticeship enrollments.

Pre-Apprenticeship Programs

The integration of pre-apprenticeship Programs into local hiring policies is a promising strategy embraced by various jurisdictions. Pre-apprenticeship Programs create a robust training pipeline for local and targeted workers aiming for trade union jobs. Whether managed directly by the city or through community partners, these programs serve as a crucial bridge connecting aspiring workers with invaluable training, stipends, and avenues for seamless entry into apprenticeships, ultimately benefiting both the individuals and the community as a whole. Financial support is a pivotal aspect of these programs, and jurisdictions such as Destination Crenshaw in Los Angeles County and San Francisco have taken a proactive stance. Participants in pre-apprenticeship programs receive a range of benefits, including stipends for training hours, essential gear like boots and tools, and coverage for associated fees. By providing stipends, these programs enable participants to sustain themselves financially throughout the weeks to months of intensive training.

This exposure is valuable in preparing individuals for registered apprenticeship programs, leading to improved retention and graduation rates.

In jurisdictions such as Los Angeles Metro and HireNola, a direct link has been established between pre-apprenticeship programs and local hiring policies. Notably, LA Metro has set a goal of achieving a 20% apprenticeship rate, offering individuals an invaluable opportunity to gain essential experience and attain journey worker status. Meanwhile, HireNola has established an objective of ensuring that 30% of all designated apprentice work hours are carried out by Disadvantaged Local Workers in Louisiana. These goals reflect a growing trend in the integration of apprenticeships within local workforce strategies. Cities like San Francisco and New Orleans have taken the reins in this endeavor, driving apprenticeship programs through entities like CityBuild and HireNola. These programs are not only funded by the cities themselves but are also closely managed to align with city projects. This approach has showcased a significant correlation between city-administered programs and the successful realization of apprenticeship targets. On the other hand, many other jurisdictions have opted for a different route, entrusting the administration of their pre-apprenticeship programs to community partners. Investments in programs run by community partners, rather than the city, have also yielded positive outcomes.

San Francisco and Seattle have integrated apprenticeships into their Project Labor Agreements (PLA) or Community Workforce Agreements (CWA). These frameworks provide explicit guidance to the community on the utilization of pre-apprenticeship programs. Seattle's CWA outlines specific requirements for apprenticeship utilization, mandating that a certain percentage of project hours be allocated to apprentices from designated programs. The Agreement states parties and assenting Contractors agree to utilize apprentices from Washington State Apprenticeship Training Council (WSATC) programs for total hours established within the City contract for the Covered Project for no less than 15% and no more than 20% of total project hours on each project with the exact requirement set by the Director. In addition, the Agreement states the Prime Contractor shall ensure one (1) of each five (5) apprentices who have worked at least 350 or 700 hours, whichever minimum is set by the Director, on the Covered Project is from a recognized Pre-Apprenticeship program. Such programs include but not limited to the Apprenticeship and Non-Traditional Employment Program for Women (ANEW) and Seattle College's Pre-Apprenticeship Construction Training program. Seattle's approach also emphasizes the inclusion of apprentices from recognized Pre-Apprenticeship programs, ensuring a diverse and skilled workforce.

Furthermore, CityBuild's PLA underscores the importance of collaboration between unions and pre-apprenticeship programs. It encourages unions to establish agreements that facilitate the seamless entry of CityBuild graduates into union apprenticeship programs, thereby ensuring a clear career pathway for program participants. This not only benefits the graduates but also fuels the local hiring initiative by providing qualified residents with opportunities in the workforce. San Francisco's CityBuild Academy serves as an exemplary model in this regard, boasting an impressive 85% graduation rate with 90% of its graduates successfully placed into union apprenticeships. This tangible success underscores how local hire initiatives, rooted in partnerships between pre-apprenticeship programs and unions, can effectively channel graduates into union apprenticeships.

F. Challenges with Hiring Preferences

Data Collection

From our perspective, improvement is needed in data collection and aggregation methods to better evaluate local hiring successes and impacts over time. Effective data collection is essential for making informed decisions and understanding the impact of policies. After engaging in conversations with various jurisdictions regarding data collection, we have identified common administrative challenges and burdens. These challenges include time constraints, capacity limitations, difficulty in engaging new partners, securing contracts, and formal agreements. The use of public funding further complicates matters due to the lengthy process and the demanding nature of the work, which requires a dedicated staff. A comprehensive understanding of the entire process is needed to effectively implement and assess the outcomes of policies, but often, much of it remains unknown. However, there is a collective effort to improve and focus on active data collection methods. In summary, the key areas for improvement are enhanced data collection and tracking and addressing administrative challenges. By addressing these aspects, jurisdictions can make significant progress in local hiring evaluation and implementation, fostering more equitable development across the region.

Tracking demographics

Another challenge is tracking all workers effectively and accurately, especially across different projects. It becomes crucial to monitor whether workers from completed projects are being placed in subsequent local hire initiatives. However, the most significant concern lies in local hire retention. Retaining local workers poses a considerable difficulty, and this raises uncertainty about the local hiring preferences long-term effectiveness in diversifying the construction workforce.

Tracking demographics is a vital aspect to consider when evaluating the local hire preferences impact on workforce diversity. It is important to note that federal regulations do not permit local hire policies to specifically target racial, ethnic, or gender diversity. Despite this limitation, certain cities have found innovative ways to achieve greater diversity through their local hire policies. Understanding these nuances can lead to informed recommendations and strategies for enhancing workforce diversity in local hire projects.

Institutional Barriers

While the local hiring preferences has brought about positive outcomes by promoting local and diverse construction workforces, there are still areas where the policy might fall short, especially when it comes to addressing workplace culture and climate. Despite its benefits, the local hiring preferences does not sufficiently tackle the issue of underrepresented demographics in the trades. This can be attributed to several factors, including reporting discrepancies, but more importantly, there are institutional barriers that prevent BIPOC and women workers from accessing and retaining higher-paying construction careers.

One significant obstacle is the lack of representation of underrepresented groups in higher-paying trades and challenging jobsite cultures. These factors create an environment that makes it difficult for BIPOC and women workers to advance and succeed in their careers within the construction industry. Moreover, language barriers pose a considerable challenge, particularly in an industry where safety is of utmost importance. Many trades may not be flexible or supportive enough to accommodate individuals who face language barriers and may require assistance in learning industry-specific terminology. LA Metro has identified prevalent barriers that impede women from entering the industry. These barriers encompass a lack of awareness and exposure to trades, inadequate hiring practices and on-the-job-training, instances of hostility and sexual harassment, absence of mentorship and support networks, and challenges related to scheduling and childcare. It is imperative for project owners and contractors to proactively ensure the accessibility and discrimination-free nature of their worksites. A potential solution lies in partnering with community organizations that can

provide support and resources to help remove individual and community barriers that may be hindering their full participation in the construction workforce. To achieve real progress, it is essential to acknowledge and address these existing distractions and challenges. By actively addressing barriers and partnering with community organizations, the construction industry can become more inclusive, supportive, and ultimately, more successful in achieving a diverse and thriving workforce.

G. Evaluating Local & Economic Hiring Preferences

With the new permissibility of hiring preferences in the Bipartisan Infrastructure Law, more data collection and rigorous evaluation will be needed to thoroughly understand the impacts of these policies and what kinds of policies are most effective. Where data were available, the data showed that hiring preferences were associated with an increase in underrepresented populations, but rigorous comparison to the labor market and other evaluation techniques would need to be used to understand if hiring preferences were the cause. It is also important to note that there is not one model local hire policy because of different labor markets. Policies that set preferences based on economically disadvantaged communities may not be as targeted a tool in communities where the targeted populations are more dispersed.

One commonality across all programs that does seem important is the complementary workforce initiatives where investments are made to train workers that are in the geographic areas or populations on which hiring preferences are based. This commonality is one reason that this report recommends that transportation agencies work with partners to increase investments in workforce programs.

Another commonality worth mentioning is the challenge of collecting data on the demographics of the workforce and the hiring of targeted groups. As noted above, some jurisdictions using local hire did not have these data available. As the use of hiring preferences grows, transportation agencies and government jurisdictions should find ways to share data publicly and to change policies as needed to achieve greater impact for the desired communities.

Project Case Study 2³⁰

Local and Economic Hiring Preference on the I-81 Viaduct Project in Syracuse, NY

Interstate 81 (I-81) is an essential travel corridor for the Central New York Region and especially the downtown Syracuse area. The highway serves as a major commuter route, providing access to jobs, businesses and services in downtown Syracuse and the hospitals and colleges/universities on University Hill. Portions of I-81 were built in the 1950s and 1960s; still, the corridor no longer meets modern design standards for traffic/speeds. This is especially true of the 1.4-mile elevated section, or “viaduct,” near downtown Syracuse. The ongoing project addresses the I-81 geometric, structural and safety concerns of the viaduct by replacing the elevated structure with a Community Grid that will disperse traffic along local north-south streets; create a new high-speed business loop; and reconnect a neighborhood severed by construction of the interstate. The project is also constructing safe pedestrian and bicycle access for users of all ages and abilities within the downtown core.

One of the most popular public comments received by the New York State Department of Transportation (NYSDOT) was the need to have employment opportunities available to the residents in the shadow of the current highway who have experienced some of the highest disadvantaged income rates and barriers to employment in the Country. With over 7 million works hours needed to complete the full project, the community asked for a portion of those hours to be set aside for residents. NYSDOT created a local hiring preference that targeted specific disadvantaged zip codes, the Onondaga Nation, and specific barriers to employment to be included in the workforce needed to complete the project. NYSDOT also included a financial incentive to the contracting world to help promote the program.

The I-81 Local Hire Program provides an incentive payment for the recruitment and employment of local residents who may have recently experienced economic hardship and/or barriers to employment.

Participation Goal

- Good faith efforts (GFEs) shall be made to achieve a goal of 15% of the overall employment hours on the project being performed by qualifying residents of the targeted area(s).

Targeted Area(s)

- All locations within zip codes: 13202, 13203, 13204, 13205, 13207, 13208, 13210, 13224, 13290, and residents of the Onondaga Nation territory.
- Locations within zip codes 13206 and 13214 that are also within the City of Syracuse.

Minimum Candidate Qualifications (at time of hire)

- Tier 1 - Must currently reside in the targeted area(s) AND must have resided in the target area(s) for the prior 6 months.
- Tier 2 - Must meet Tier 1 qualifications, AND must currently face at least one of the following barriers to employment:
 1. Being a custodial single parent,
 2. Receiving federally funded housing assistance,
 3. Receiving HEAP, SNAP, or Medicaid,
 4. Lacking a GED or high school diploma,
 5. Having a criminal conviction, or
 6. Emancipated from the foster care system.

Incentive Payment Rates

- Tier 1 \$20/hour
- Tier 2 \$30/hour

³⁰ This case study was provided by New York State DOT.

Positive outcomes in workforce representation

The I-81 Project was separated into two phases of construction. The work on all phases and contracts is slated to be complete in 2028 and both Contracts 1 and 2 have been in the field over the last year. In Contract 1, the Local Hire goal attainment has hovered around 13% with minority participation hitting 16 percent and female participation hitting nine percent. Contract 1 is roughly 12 miles outside of the City of Syracuse as well as the specified zip codes in the preference and is rebuilding the Northern interchange of I-81. In Contract 2, Local Hire goal attainment has hovered at 16 percent with minority participation hitting 25 percent and female participation hitting 7 percent. Contract 2 is in the Southern Interchange of I-81 which is in the City of Syracuse and the specified zip codes in the preference.

Strategies for achieving local hire goals and enhancing diversity

NYSDOT received a Highway Construction Workforce Partnership (HCWP) grant from FHWA to start the process of training the necessary workforce that would be included by the Local Hiring preference attached to the I-81 Viaduct project contracts. The grant facilitated the creation of a local working group known as the WorkSmart NY Syracuse Build Collaborative which has brought together workforce partners, industry experts and advocates to train and troubleshoot the needs of the workforce on the project. The Collaborative meets monthly to get updates on training and workforce needs of the I-81 contracts.

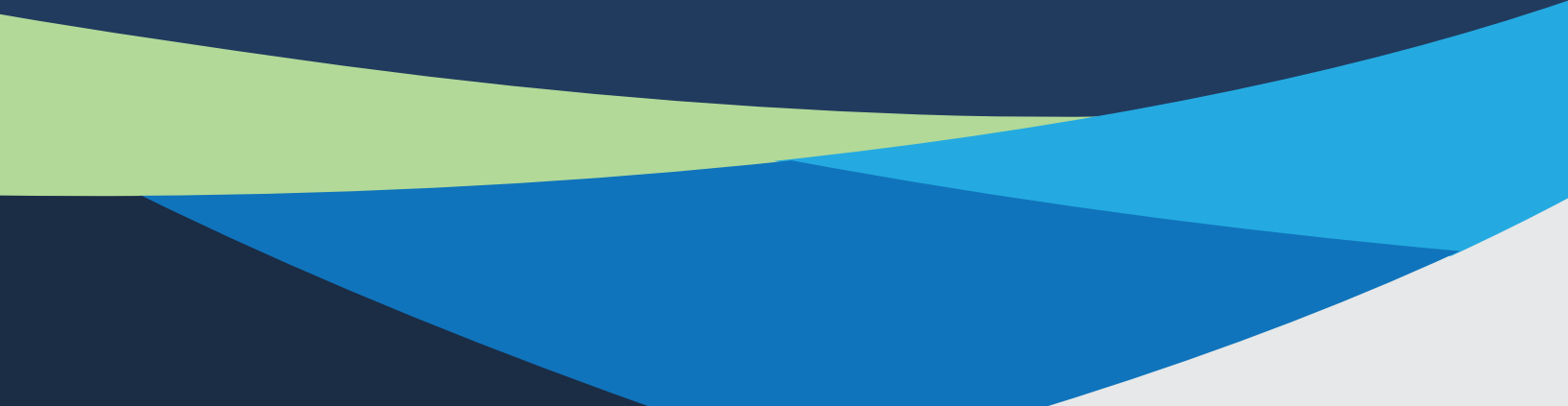
The HCWP grant also put much needed resources into specific training programs to prepare individuals for heavy highway construction careers. Syracuse Build's Pathways to Apprenticeship is an 11-week program that prepares individuals for joining a prospective trades union. The program gives the individual the basic skills needed to enter a trade as well as prep in the apprenticeship tests needed for hire. Pathways to Apprenticeship follows the Building Trades MC3 curriculum and is taught by local union training instructors. The other training program is NYSDOT's WorkSmart NY which is taught by the local SUNY Educational Opportunity Center in Syracuse. This program is catered specifically to individuals looking to join directly into the highway construction workforce with the basic skills needed to be safe and productive on a worksite.

Both of these programs as well as other construction trades programs in the area have been the base for individuals looking to enter into heavy highway construction.

A few factors that likely contributed to the strong minority and female participation percentages are:

- Extensive public outreach and communication on the goals from the outset of this high-profile and closely-watched project;
- City, community, local workforce development board, and union leader focus on the opportunity presented by this project for their constituents;
- Continuous oversight, including monthly reporting and meetings by NYSDOT through the WorkSmart NY Syracuse Build Collaborative ;
- Each I-81 contract to date has had a Project Labor Agreement included;
- To date each PLA has had the Local Hire Preference memorialized inside the agreement as well as increased apprenticeship goals to improve participation,

Section IV. Detailed Summary of Barriers and Recommendations for Sub-Populations: People Re-entering from incarceration, people with disabilities, women, and opportunity youth

- A. Helping Individuals Reentering from the Justice System into Construction Jobs**
 - B. Increasing Accessibility to the Construction Trades for Opportunity Youth**
 - C. Increasing Accessibility to the Construction Trades for Women**
 - D. Increasing Accessibility to the Construction Trades for People with Disabilities**
- 

Section IV. Detailed Summary of Barriers and Recommendations for Sub-Populations: People Re-entering from incarceration, people with disabilities, women, and opportunity youth

This section includes a deeper analysis of the barriers to entering the construction trades for particular subpopulations:

1. People with justice involvement
2. Opportunity Youth
3. Women
4. People with Disabilities

The analysis of barriers and solutions for people with justice involvement is immediately below. For populations #2 through #4 above, the summaries of barriers and recommendations were written by Fellows from the Harvard Project on Workforce as part of a student agreement with the U.S. Department of Transportation. The Fellows interviewed workforce development organizations that were selected by US DOT to ask them about barriers to employment for the populations they serve and the strategies that were effective. The organizations selected by US DOT had to present data in advance to show that they were getting the priority population employment at good wages. More information on the method of the Fellows who did this research can be found in a [separate report they published](#).

Each of the two-page summaries produced by the Harvard Fellows are copied below. Following those two-page summaries are nine one-pagers for non-profits and union training programs that train these populations. Each one-pager provides information on the outcomes of the program (for the population of interest) and the strategies used by that entity. The organizations with one-pagers are listed below with the populations they serve in parentheses.

1. Civic Works, Baltimore, MD (opportunity youth, Black workers)
2. Wisconsin Regional Training Partnership, Milwaukee, WI (opportunity youth, Black workers)
3. Ironworkers Local 86 (opportunity youth)
4. Dannon Project, Birmingham, AL (opportunity youth, Black workers)
5. Able-Disabled Advocacy San Diego, CA (opportunity youth, people with disabilities)
6. Adaptive Construction Solutions (people with disabilities)
7. Operating Engineers Local 49 Minneapolis, MN (women)
8. Building Pathways, Boston, MA (women, Black workers)
9. Chicago Women in Trades (women)

All of the one pagers above are referenced in the summaries of the Harvard Fellows. Two additional one-pagers are included to share more information about the Illinois Pre-Apprenticeship training program referenced above as it is the largest state investment in pre-apprenticeship of which we are aware and may provide a model for other states. The one pager on the Illinois Works Pre-Apprenticeship Program provides information on all of the pre-apprenticeship programs in which Illinois is investing. The second one-pager is a pre-apprenticeship program in Macon, IL focused on opportunity youth but one that also serves a high percent of women.

A. Helping Individuals Reentering from the Justice System into Construction Jobs

Section 25019 of the Bipartisan Infrastructure Law specifically asked DOT to address barriers for helping ex-offenders as defined by Workforce Innovation and Opportunity Act (WIOA) to get into construction jobs and called for model plans for states and local jurisdictions to address these barriers. Section 25019 also asks how DOT is working to remove these barriers.

Under WIOA, the term “offender” means and adult or juvenile who:

- who is or has been subject to any stage of the criminal justice process, and for whom services under this Act may be beneficial; or
- who requires assistance in overcoming artificial barriers to employment resulting from a record of arrest or conviction

This definition is very broad and henceforth we will refer to individuals with justice system involvement or simply to those that are reentering from the justice system.

This chapter of the report has 3 sub-sections. The first addresses barriers and successful strategies for integrating people with justice-system involvement into the construction industry based on interviews with non-profit organizations and briefly compares this input to a review of training and employment evaluations. The second discusses current ongoing work with the Bureau of Prisons and the Department of Labor to offer apprenticeship to individuals behind bars. The third details a new FHWA partnership with Indiana and Wisconsin to train people currently incarcerated in state prison in construction jobs.

Barriers for People Coming out of Incarceration and Successful Strategies to Overcome Barriers

To identify the barriers and strategies most important for individuals with justice system involvement DOT spoke to several different organizations with strong results in getting this population into construction jobs. The organizations consulted include:

- Anti-Recidivism Coalition
- The Dannon Project
- Able-Disabled Advocacy
- LiUNA of Northern California

Below is information on each of these programs, including the percent justice involved that are served, and key outcomes. Note that for the Dannon Project and Able-Disabled Advocacy there is also a one-pager available produced by the Harvard Project on Workforce as both of those programs also serve opportunity youth. Three of these organizations are in California but in different parts—northern California, Los Angeles, and San Diego—and they operate in different levels of union density. For example, the Anti-Recidivism Coalition is an apprenticeship readiness programs sponsored by the building trades in Los Angeles with high union density, whereas Able-Disabled Advocacy in San Diego, CA primarily places outside the union sector. The Dannon Project in Birmingham, AL has very few union placements.

DOT sought geographic diversity in this report, and some other programs serving individuals coming out of incarceration were identified. Some organizations did not have any data on outcomes and others had wages that were too low to showcase in these reports. DOT typically looked for wages that were at or above the median wage or significant placement in registered apprenticeship.

Table 8. Outcomes of Workforce Programs Serving Justice-Involved Individuals

	Program size	% Justice Involved	Outcomes
Anti-Recidivism Coalition	550 participants enrolled 2016-April 2023	100	70% graduation rate 49% Placement in registered apprenticeship
Dannon Project	573 participants per year with 75 in trades pathways	100	Graduation rate: 90% Average placement wage: \$15.68
Able-Disabled Advocacy	64 participants per year	60%	Graduation rate: 80% 53% placement in apprenticeship Starting salary: \$17/hour
LiUNA of Northern California (pre-release training)	Since 2007, 692 individuals in prison have graduated from a 6-month program providing general construction and workplace safety. There are instructors in 4 state Penitentiaries	100%	Of the 692 graduates, 30 percent have been placed into the local registered apprenticeship. Note some graduates do not stay in the N California region when they are released and if they join another construction apprenticeship it would not be tracked. Starting salary: \$23.56/hr

Common barriers called out by the non-profits serving people reentering from incarceration include all of the following:

- Mental health conditions and history of trauma
- Lack of driver’s license
- Stigmas surrounding criminal records among employers and other hiring partners
- Restrictions on housing, employment, and occupational licensing based on criminal records
- Lack of education among parole officers of construction occupations
- Social/familial relationships can lead to recidivism

Table 9 below shows how some of the organizations interviewed are addressing these barriers.

Table 9. Barriers for Justice-Involved Workers and Example Solutions of Workforce Programs

Barrier	Solution
Mental health conditions and history of trauma	<p>The Anti-Recidivism Coalition assigns a licensed therapist for each participant in the program.</p> <p>At Able-Disabled Advocacy everyone is trained to provide services in a trauma-informed way.</p>
Lack of driver's license	<p>LIUNA Northern California has removed the driver's license requirement to enter the union in recognition of this common barriers and just requires a valid ID. They do message that if they continue without a driver's license, it might limit worker advancement opportunities and connect them with a CBO who can help them get a driver's license.</p> <p>Able-Disabled Advocacy, which works with youth with justice system involvement, offers driver's education and help with licensing fees.</p>
Stigmas surrounding criminal records	<p>The Dannon Project advocates on behalf of participants to employers and other industry partners so that when participants are ready for employment, they have partners willing to hire.</p> <p>LIUNA of Northern California noted how important it is for project owners to specify workers with justice involvement as a targeted population as a way to counteract the stigma of hiring this population. As noted in the section on hiring preferences, many entities are prioritizing this population. LIUNA also educates its signatory contractors through annual industry conferences about the benefits of hiring this population and how their pre-apprenticeship programs work to prepare them.</p>
Restrictions on housing, employment, occupational licensing, etc. based on criminal records	<p>The Anti-Recidivism Coalition works with transitional housing partners and also helps to directly pay for individuals' rent if needed.</p>
Lack of education among parole officers of construction occupations	<p>Parole officers do not always know which individuals went through the LIUNA Northern CA pre-apprenticeship program while in prison. The union is starting a pilot program in Folsom correctional facility to educate the specific parole officers who will be assigned to pre-apprenticeship cohort graduates, so that they're familiar with the program and post-release opportunities.</p>
Social/familial relationships can lead to recidivism	<p>The Dannon Project works with families and others in the participant's social network to set expectations and gain support for career plans.</p> <p>The Anti-Recidivism Coalition assigns life coaches to help participants and hosts peer groups focused on helping participants develop healthy relationships.</p>

Some of the barriers noted above are similar to barriers that were mentioned by organizations serving other populations of interest. DOT also asked organizations they interviewed what five strategies they thought were most important for success. The strategies that came up most often were: an individualized service plan, mental health supports, engagement of families and friends and a focus on personal relationships of participants, and industry partnerships that address the stigma of criminal records.

Individualized service plans were identified by pretty much every organization as important, and this recommendation is covered above as “individualized case management.” The other common strategies were different than for organizations serving other populations and are therefore noted as characteristics of high-quality programs that serve justice-involved individuals.

Characteristics of Quality Programs Getting Justice-Involved Individuals into Construction Jobs or

Characteristics important for all underrepresented populations

- Strong partnerships between industry (unions and employers) and community-based organizations
- Individualized Case Management
- Sufficient funding for supportive services, especially help accessing a personal vehicle and driver’s license for work travel
- Stipends for time in training
- Mentorship
- Exposure to variety of construction careers.
- High quality training developed with industry partners that includes hands-on experience, offered through the program or separately,
- Tracking results by demographics

Additional characteristics for individuals with justice involvement

- Mental health support
- Engaging family and social network to prevent recidivism
- Industry partnerships that address stigma and bias against population

There is a variety of research about how to bring individuals with justice-system involvement into the workforce. Most of this research is not focused on construction, but it is still worth noting the findings of this field of research and how it compares to the recommendations above. A number of reentry programs with promising evidence include training for a specific occupation with a credential or certificate awarded at the end.³¹ There is also evidence that individualized services are important relative to programs where individuals only receive programs as a group.³²

Several reentry programs have included peer mentoring meaning that people are mentored or coached by other individuals with justice system involvement. Those with experience in the justice system may be better placed to help individuals overcome barriers that this community faces. Qualitative research and one random

31 Barden, B., Juras, R., Redcross, C., Farrell, M., & Bloom, D. (2018). *New perspectives on creating jobs: Final impacts of the next generation of subsidized employment programs*. MDRC. https://www.mdrc.org/sites/default/files/ETJD_STED_Final_Impact_Report_2018_508Compliant_v2.pdf; Cook, P. J., Songman, K., Braga, A. A., Ludwig, J., & O’Brien, M. E. (2015). An experimental evaluation of a comprehensive employment-oriented prisoner re-entry program. *Journal of Quantitative Criminology*, 31(3), 355–382; and Hill, L., Scaggs, S., & Bales, W. (2017). Assessing the statewide impact of the Specter vocational program on reentry outcomes: A propensity score matching analysis. *Journal of Offender Rehabilitation*, 56(1), 61–86; Muhlhausen, D. B., & Hurwitz, H. J. (2019). First Step Act: Best practices for academic and vocational education for offenders. *Federal Sentencing Reporter*, 32(1), 56; and Willison, J. B., Bieler, S. G., & Kim, K. (2014). Evaluation of the Allegheny County Jail collaborative reentry programs. Urban Institute.

32 Bollinger, C. R., & Yelowitz, A. (2021). Targeting intensive job assistance to ex-offenders by the nature of offense: Results from a randomized control trial. *Economic Inquiry*, 59(3), 1308–1327. LePage, J. P., Crawford, A. M., Cipher, D. J., Anderson, K., Rock, A., Parish Johnson, J. A., Washington, E. L., & Ottomanelli, L. (2020). Blending traditional vocational services and individualized placement and support for formerly incarcerated veterans. *Psychiatric Services*, 71(8), 816–823;

control trial, the highest standard of evidence, has shown that peer mentoring is an important program component that can decrease recidivism and help keep individuals engaged in an educational or training pathway.³³

Federal Government Programs to Train Individuals Currently Incarcerated

Many have recognized that training people once they leave incarceration may be sub-optimal and have started to look at the idea of providing training and education to individuals while they are incarcerated. For example, [a White House report from 2022](#) suggests providing pre-release education and training. [The Department of Education has made it possible for people who are incarcerated to access Pell Grants.](#)

Department of Labor and Bureau of Prisons Partnership

The U.S. Department of Labor and the Bureau of Prisons are currently working to expand apprenticeship in the construction trades to individuals currently incarcerated. This partnership began in 2016. The Bureau of Prisons National Apprenticeship program will provide registered apprenticeship to those that are incarcerated, providing access to a total of 120 apprenticeable occupations. As this program develops it should provide good information on how apprenticeship access while incarcerated can help lead to better employment outcomes. All apprentices will be tracked through the Department of Labor's registered apprenticeship data system. As of November 2023, there were 442 active apprentices in these programs in 33 different states.

Federal Highway Administration's On the Job Training and Supportive Services Workforce Re-Entry Pilot

In August 2023, FHWA launched a pilot program in two states—Indiana and Wisconsin—to help train individuals who are currently incarcerated. The program in Indiana is specifically geared toward attracting members of marginalized communities currently incarcerated in the state prison system. The program in Wisconsin is designed to attract federally recognized tribal members currently incarcerated in the state prison system.

Both programs include the following components:

- Memoranda of Understanding between the State Departments of Transportation (SDOTs) and the State Bureaus of Prisons.
- The inclusion of partners who will provide wrap around services such as job placement, personal protective equipment, transportation assistance, lodging assistance and services such as substance abuse counseling.
- The incorporation of potential employer training that specifically addresses the challenges faced by these participants upon release, with a focus on the awareness of indigenous culture in Wisconsin.

The program recruits inmates who are within six months of release and hopes to enroll at least twenty-five participants annually in each state.

33 Bannin, B. J. (2021). *Characteristics of reentry education programs among second chance Pell colleges and universities* [Unpublished doctoral dissertation]. Ashland University; Barrenger, S. L., Stanhope, V., & Atterbury, K. (2017). Challenging dominant discourses: Peer work as social justice work. *Journal of Progressive Human Services*, 29(3), 185–205. <https://doi.org/10.1080/10428232.2017.1399036>; Buck, G. (2020). Peer mentoring in criminal justice. Routledge. Hinde, K., & White, R. (2019). Peer support, desistance and the role of the third sector. *The Howard Journal of Crime and Justice*, 58(3), 329–348; Matthews, E. (2021). Peer-focused prison reentry programs: Which peer characteristics matter most? *Incarceration*, 2(2). <https://doi.org/10.1177/26326663211019958>; Reingle Gonzalez, J. M., Rana, R. E., Jetelina, K. K., & Roberts, M. H. (2019). The value of lived experience with the criminal justice system: A qualitative study of peer re-entry specialists. *International Journal of Offender Therapy & Comparative Criminology*, 63(10), 1861–1875. <https://doi.org/10.1177/0306624X19830596>; Timor, U., Peled-Laskov, R., & Golan, E. (2023). Student Mentors of Incarcerated Persons: Contribution of a Mentoring Program for Incarcerated Persons. *Criminal Justice Policy Review*, 34(1), 65–87. <https://doi.org/10.1177/08874034221130037>; and Sells, D., Curtis, A., Abdur-Raheem, J., Klimczak, M., Barber, C., Meaden, C., Hasson, J., Fallon, P., & Emigh-Guy, M. (2020). Peer-mentored community reentry reduces recidivism. *Criminal Justice & Behavior*, 47(4), 437–456. <https://doi.org/10.1177/0093854820901562>.

B. Increasing Accessibility to the Construction Trades for Opportunity Youth

Defining the Problem

There are currently more than 5 million opportunity youth, aged 16-24, disconnected from school or work in the United States, representing 1 of 9 members of this population.³⁴ Supporting pathways for youth into the trades provides both a path to prosperity while helping to bring more workers into high-demand construction jobs. Yet, the average age of construction trades apprentices in the United States is 29. State and local government, unions, workforce intermediaries, and community-based organizations can provide the support to increase recruitment.

Program Identification

The DOT and DOL identified four key criteria to evaluate youth programs:

- 100% of program participants are opportunity youth, defined as youth aged 16-24 disconnected from school or work
- Program places youth in career-sustaining jobs with an exit wage that is 200% or more of the federal poverty level for a single- income family of 2 for the year(s) the program took place
- Programs have comprehensive data for participants and track recruitment, retention, and placement outcomes for youth

Programs represent geographic diversity and regional differences across the country

The following programs were identified as meeting all or nearly all of the above criteria: Pacific Northwest Ironworkers Youth Direct Pilot, The Dannon Project, Baltimore Civic Works Youth Build Program, Able Disabled Advocacy, and Wisconsin Regional Training Program's Big Step initiative. Program representatives agreed to a one-hour semi-structured interview to share best practices, barriers, and strategies to increase the number of opportunity youth entering the construction industry:

Common Barriers

- **Low Industry Career Exposure:** The average age of a construction trades apprentice is 29.³⁵ Able Disabled Advocacy and Baltimore City Works cited that a majority of youth participants had low exposure to the trades and were not aware of the benefits an apprenticeship can provide. This is especially the case for women and BIPOC youth who may not be able to see themselves in the construction field.
- **Job Readiness Skills:** Many youths are early in their careers and may have less experience in the workforce compared to the average apprentice, resulting in less clarity for their own career goals and a less competitive application for employers.
- **Transportation:** Youth, in particular,³⁶ lack access to both driver's education and/or a car, both of which are necessary for many construction trades apprenticeship.
- **Diploma/high school equivalencies or Entrance Exams:** Academic credentials and exams can serve as a barrier for opportunity youth who may have performed poorly in academic settings.

34 <https://www.aspencommunitysolutions.org/who-are-opportunity-youth/>

35 <https://www.nccer.org/newsroom/apprenticeship-programs-cant-do-it-alone/#:~:text=Accounting%20for%20a%20Four%2DYear,tradess%20and%20start%20their%20training.>

36 <http://newamerica.org/education-policy/edcentral/addressing-youth-apprenticeship-transportation-challenges-how-employers-can-lead/>

- **Mental Health and Effects of Trauma:** Youth mental health has been steadily declining since 2009.³⁷ The pandemic accelerated this decline,³⁸ and opportunity youth are disproportionately more likely to experience mental health challenges relative to their connected peers.³⁹ Youth, therefore, are more likely to require additional supports to help manage mental health challenges or work through trauma they have experienced and are less equipped to process.⁴⁰
- **Recreational Drug Use:** Although recreational marijuana use may be legalized in a state, drug testing is common in the construction industry

Strategies to Address Barriers

Several of these strategies have been implemented by multiple organizations. The examples provided reflect the organization who highlighted this work the most. Strategies sourced from existing literature have been included as well.

Barrier	Strategy	Example
Lack of Awareness	Build in career exploration and goal setting into training programming; offer multi-trade pre apprenticeships	Baltimore Civic Works
Job Readiness Skills	Develop youth’s interview and advocacy capacity in addition to “soft skills” to increase competitiveness	The Dannon Project
Transportation	Offer one stop shop for wrap-around services and support youth by providing transportation stipends (short-term) and obtaining a driver’s license (long-term)	WRTP Big Step
Diploma/GED Credentials	Incorporate consecutive programming, celebrations, and earn and learn programming to encourage youth to stick with training and help them fulfill financial obligations	Able Disabled Advocacy
Entrance Exams	Invest in high-quality instructors with high school teaching experience	Baltimore Civic Works
Mental Health	Partner with local health providers to offer licensed mental health supports	The Dannon Project
Recreational Drug Use	Educate youth on employment requirements and offer addiction counseling services	Able Disabled Advocacy

37 <https://thehill.com/changing-america/well-being/mental-health/3828861-parents-worry-about-growing-post-pandemic-youth-mental-health-crisis/>

38 <https://www.hsph.harvard.edu/news/hsph-in-the-news/covid-youth-mental-health-crisis/>

39 <https://www.newamerica.org/education-policy/edcentral/addressing-youth-apprenticeship-transportation-challenges-how-employers-can-lead/https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6243446/#:~:text=Relative%20to%20their%20connected%20contemporaries,poor%20health%2C%20and%20early%20mortality>

40 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5604756/>

Recommendations for Strategy Implementation

Recommendation 1: Strengthen recruitment mechanisms

A key barrier for opportunity youth is making them aware of the career opportunities in trades. Given their lack of connections, opportunity youth can be difficult to identify and recruit.

Nonprofit and Direct Service Organizations: Increase recruitment efforts by highlighting past participants and encouraging referrals within the community. Many of the providers with deep roots in the community stress that the best recruitment mechanisms are via word-of-mouth, youth-to-youth. This mirrors the research that youth, 16–18-year-olds in particular, are more likely to listen to peers than adults.⁴¹ WRTP Big Step suggested that providers should also partner with neighborhood centers and juvenile justice organizations, not just teachers and counselors, to ensure that there are multiple entry points, especially for youth unengaged in school.

Trades Associations: Break down traditional silos between workforce and educational systems to encourage information sharing between systems about apprenticeship and pre-apprenticeship opportunities. For example: Operating Engineers Local 49 partners with public and private schools to administer a high school pathway program that gives high school students early exposure to the trades and elective and articulated college credit through a partnership between unions and the school system.

Recommendation 2: Track participants to journey-level worker

Many programs track youth through pre-apprenticeship training, but programs are inconsistent in tracking youth through journey-level status. This is particularly important for this population as they may be more likely to transition between careers and require more intensive job readiness supports throughout their apprenticeship experience.

Nonprofit and Direct Service Organizations: Encourage youth to stay in contact and employ an open-door policy such as at WRTP Big Step and Civic Works who provide additional supports and services for youth at any point in their career journey.

City and State Governments: Track participants across various trades and careers by improving data systems. For example: The City of Seattle uses local and state funds to employ a data team who is responsible for reviewing apprenticeship outcomes across the city.

Recommendation 3: Provide all wraparound services through one provider

Opportunity youth are highly likely to face transportation barriers that prevent them from accessing additional services. They may also distrust traditional systems and authority figures. Therefore, it is imperative that they can easily access wrap-around support services in a space where they feel comfortable asking for help.

Nonprofit and Direct Service Organizations: Provide the majority of services in-house to increase access and trust in services. For example: Baltimore Civic Works and Able Disabled Advocacy employ a one-stop shop model where youth can access most or all services on site.

City and State Governments: Open grant funding that allows partnerships between unions and partner community-based organizations to empower a trusted entity to continue to provide services for an individual throughout their apprenticeship journey. For example: The Washington State Department of Transportation partnered with the Ironworkers and R3 community services to offer the pilot program WSDOT Youth Direct.

41 <https://onlinelibrary.wiley.com/doi/full/10.1111/desc.12666>

Recommendation 4: Deploy additional resources to support sixteen- to eighteen-year-olds

Sixteen- to eighteen-year-olds require additional supports and were not heavily represented in our study or interviews. Many trades partners cannot hire applicants until they are eighteen years old. Furthermore, many program interviewees cited additional barriers specific to this age group including: a lack of interest in developing long-term career plans and immaturity.

Nonprofit and Direct Service Organizations: Pilot innovative recruitment mechanisms and devote more resources to recruitment for this age group, as young people in this age group may be more disconnected and unlikely to join programs. Baltimore's YouthBuild program highlighted the importance of word-of-mouth referrals, rather than traditional recruitment strategies. Mentorship is another key component of Baltimore's Youth Build program and the National Guard Youth Challenge program, another program with particularly strong outcomes for this population. Additionally, the research suggests that providing youth with opportunities for paid work may serve as an engagement tool and as a strategy to improve long-term labor market outcomes, a common theme across the programs interviewed for this study.

C. Increasing Accessibility to the Construction Trades for Women

Defining the Problem

As noted above, representation for women in construction trades is low. Women face numerous institutional and social barriers in the field, and few programs across the country have high rates of women participation. Summer Fellows with the Project on Workforce at Harvard worked directly with the USDOT to better understand services currently provided by organizations and to recommend the best strategies to increase the recruitment and retention of this population nationwide.

Program Identification

Twelve organizations oriented to workforce development in construction were interviewed based on their proven impact in recruiting and retaining a diverse construction workforce. These programs were identified by USDOT staff as having made considerable progress in this field. The six organizations focusing specifically on women were:

- Local 49 Operating Engineers
- Building Pathways Boston
- Chicago Women in Trades (CWIT)
- Vermont Agency of Transportation
- Oregon Bureau of Labor & Industries (BOLI)
- City of Seattle Priority Hire Program

Common Barriers

Review of the data and interviews with these organizations all yielded certain themes defining the existing barriers for female populations. A few of these, along with a list of the organizations impacted, are:

Access to Childcare: Oregon BOLI, Local 49, Seattle, CWIT, Building Pathways, and Vermont.

- All organizations cited childcare as a barrier for women, particularly for female-led single income households. Oregon BOLI discussed the common occurrence of parents “self-selecting” out of an apprenticeship program because they did not have access to childcare, and that their childcare stipend was so low women were not taking advantage. Local 49 discussed the need for their construction projects to take place in certain months of the year due to weather restrictions, which overlap with summer vacation for children out of school. Boston Building Pathways also referred to data indicating the average cost for one year of childcare in Massachusetts is \$21,000.

Access to Transportation: Oregon BOLI, Local 49, CWIT and Building Pathways

- Interviews across all the organizations also communicated difficulties with participants in their programs having reliable transportation. Local 49 Operating Engineers, which is based out of a rural location in Minnesota, communicated that their sites are essentially inaccessible through public transportation, necessitating a vehicle.

On the Job Harassment: Oregon BOLI, Seattle, CWIT and Building Pathways

- Instances of harassment, discrimination, stigmatization, and behavioral issues towards women are common in the field, often necessitating specific staff to address workplace mediation. Additionally, many

women do not speak out for fear of retribution or are not aware of the reporting process. Oregon BOLI cited that their internal reporting system is flawed due to female participants' fear of being outed, despite having high rates of survey feedback indicating women often feel as though they are treated poorly in the workplace.

Financial Compensation: Local 49, Seattle and Building Pathways

- Two organizations reported it was sometimes difficult to keep women participants in programs for periods of training while they were not being paid. While some organizations can provide early financial compensation, others do not. Additionally, work for some programs has been inconsistent, with access to available job sites being lower than originally expected. Seattle explicitly mentioned this when discussing the significant first year turnover. Oregon BOLI also mentioned this challenge in connection with traveling to remote locations for construction projects that may be overnight, necessitating separate lodging from men on the job site.

Strategies to Address Barriers

There are various strategies being employed by these organizations to help mitigate these barriers women are facing. The most common ones connected to these are:

Barrier	Strategy	Example
Access to Childcare	Providing childcare stipends as part of training programming; offering a robust retention services program with childcare service resources.	Oregon BOLI
Access to Transportation	Vouchers or transit passes for the use of public transportation, fuel cards, and a program-based loan system for the purchase of automobiles.	Building Pathways Boston
On the Job Harassment	Having a designated reporting system, built-in onboarding training on confidential reporting, and jobsite removal of problematic employees.	City of Seattle Priority Hire
Financial Compensation	Paid training through stipends; case management, mentorship programs, individualized career exploration for jobsite placements.	Local 49 Operating Engineers

Recommendations

Recommendation #1: City or State-wide childcare program and transportation assistance for women participants

Non-profits and Direct Service Organizations: Provide transportation and childcare stipends to program participants. This is being done by some organizations already, with CWIT providing stipends and Building Pathways Boston providing MBTA passes and fuel cards. Oregon BOLI provides a retention services program which focuses on childcare and transportation through providing spring gear, basic work tools and transportation assistance, the latter of which includes lodging and per diem reimbursements if participants must travel more than 60 miles from home for work or class, and childcare subsidies for children under 13 years old.

City and State Governments: Despite several organizations offering assistance, this remains a barrier for women in construction. Cities should consider implementing programs that allow for broad access to childcare and transportation across industries.

Similarly, while this could also be implemented at the program level, cities and municipalities should consider providing free transit passes to partner organizations in this field.

Recommendation #2: Standardized policy in place for harassment mitigation and workplace mediation

Non-profits and Direct Service Organizations: Address workplace harassment and general mediation through standardized practices. Currently this work is done through various practices. Chicago Women in Trades mandates three workplace harassment informational training sessions for participants as they go through the intake process, outlining reporting procedures. Oregon BOLI has an anonymous report and investigation protocol.

City and State Governments: Craft policy to ensure procedures are in place to ensure a safe workspace for women across the construction industry and to help fund organizations compliant with those policies. Specifically, policy should ensure victim identity protection and a standardized investigative protocol.

Recommendation #3: Build out Career Exploration Programs and Jobsite Incentive Program for Contractors

Non-profits and Direct Service Organizations: Organizations should consider implementing widespread case management and career exploration programs, geared specifically to needs of women, to help with program retention and placement into trades relevant to individual interests. Some organizations doing this work include Building Pathways' individualized service plan and social service referral plan with community partners, Local 49's individual exploration, and Vermont's job shadowing program.

City and State Governments: To help with long term retention and financial stability of participants, governments should consider implementing programs providing incentives to construction job sites for hiring apprentices or graduates from these programs serving underrepresented populations, with added funding for those providing career exploration programming. An example of this work is the City of Seattle Priority Hire Program, which works directly with contractors hiring from priority zip codes in the City.

D. Increasing Accessibility to the Construction Trades for People with Disabilities

Defining the Problem

As noted above in Section I, people with disabilities are slightly underrepresented in the construction workforce relative to their share of the employed. When taking into account the fact that people with disabilities are heavily underrepresented in the labor force overall, there is substantial opportunity to bring this population into construction jobs. Addressing accessibility to the construction trades for people with disabilities requires an in-depth understanding of the barriers this population faces and effective strategies for making the trades more accessible.

Program Identification

Eleven organizations oriented to workforce development in construction were interviewed based on their impact in recruiting and retaining a diverse workforce, as defined by the number of people with disabilities they have served and the number of those served who have entered the trades as a journey-level individual. Each organization was asked about strategies used to support people with disabilities entering the trades and the barriers this population faces. Expanding access to the construction trades, specifically for people with disabilities, is a developing initiative, and as such, only one of the interviewed organizations, Able-Disabled Advocacy, focuses directly on this population while encouraging career exploration and transition to the construction trades for some.

Common Barriers

- **Safety:** Safety is the predominant concern of employers and workers on a construction site. Workers with disabilities may face limitations in navigating or responding safely within a worksite.
- **Discrimination and Harassment:** Workers with disabilities face an increased risk of experiencing discrimination or harassment, regardless of legal policies forbidding discrimination toward qualified workers in the workplace.
- **Stigma:** Many employers and workers in the trades lack awareness of the broad range of disabilities, apparent and non-apparent, that a worker can have, and accommodations that can be made to support workers with disabilities on a construction site⁴². This may result in stigma from an employer or worker that decreases the inclusivity of the job site.
- **Self-Disclosure for Access to Accommodations:** Workers have the choice to self-disclose their disability status at the point of application for employment in the trades⁴³. Self-disclosing enables workers to access reasonable accommodations that allow them to perform their job responsibilities but may result in discrimination or stigma from employers once this status is known.
- **Lack of Reasonable Accommodations and Adaptive Technology:** The use of adaptive technology as reasonable accommodations to support workers with disabilities in performing their roles safely and effectively is an emerging field on construction sites.

⁴² The Americans with Disabilities Act (1990) maintains a broad definition of what constitutes a disability. <https://www.ada.gov/law-and-regs/ada/>

⁴³ Section 503 of the Rehabilitation Act of 1973 - This act is a law that prohibits federal contractors and subcontractors from discriminating in employment against individuals with disabilities and requires employers take affirmative action to recruit, hire, promote, and retain these individuals. <https://www.dol.gov/agencies/ofccp/section-503/law>

- **Diploma/GED Credentials:** Many pre-apprenticeship and apprenticeship programs require a Diploma or GED. People with disabilities that did not obtain an IEP or receive adequate accommodations in K12 schooling may have faced barriers in obtaining Diploma or GED credentials that are necessary to apply to these programs.
- **Non-Continuous Disability Status:** Construction includes demanding physical requirements that may cause a person to develop a disability. Work in the trades and increasing age are the two highest risk factors for developing an occupational disability⁴⁴.

Strategies to Address Barriers

The following summary highlights strategies used to address barriers people with disabilities face in the construction industry.

Barrier	Strategy	Example
Safety	Provision of adaptive technology that makes spaces safer for workers with disabilities, including different types of disabilities in safety training	Vermont Agency of Transportation
Voluntary Identification	Educating workers on their right to voluntarily self-disclose their disability status	Able-Disabled Advocacy
Discrimination	Providing support such as case managers, support groups, or ombud services	Dannon Project
Stigma	Educating construction community members (employers, contractors, unions, etc.) on workers with disabilities and their rights	Building Pathways
Diploma/GED Credentials	Provision of learning support and reasonable accommodations	Operating Engineers Local 49
Adaptive Technology	Provision of technology/other reasonable accommodations supporting workers in achieving credentials or reducing workplace barriers caused by a disability	Able-Disabled Advocacy
Non-Continuous Disability Status	Provision of supportive services that aid workers who develop an occupational disability	Oregon BOLI

* Several of these strategies have been implemented by multiple organizations. The examples provided reflect the organization who highlighted this work the most. Strategies sourced from existing literature have been included as well.

Recommendations

The barriers listed above can be addressed in various ways depending on the type of organization implementing each strategy. The recommendations below seek to achieve three overall outcomes and are presented by the organizational type that is best fit to address these needs.

Recommendation 1: Increase Accuracy of Reporting of People with Disabilities in the Construction Industry

Tracking the participation of people with disabilities is difficult and often linked to voluntary self-disclosure. Participants may or may not indicate their disability status for several reasons, but failure to do so limits an organization's ability to track this population and provide reasonable accommodations.

Several of the organizations represented indicated that people with disabilities are heavily underreported in the industry. Increasing the accuracy of reporting for people with disabilities in construction programs by educating participants on voluntary self-disclosure will result in higher visibility for this population and better

⁴⁴ Becker et al., Review of Research on Disability in Construction, West Virginia University Safety and Health Extension, <https://extension.wvu.edu/research/industry-research/disability-in-construction/>

services to continue developing this subset of the workforce.

Nonprofit and Direct Service Organizations: Proactively educate participants and interested candidates on the [Americans with Disabilities Act](#) and the [Rehabilitation Act: Section 503](#). *Able-Disabled Advocacy* educates youth on their rights to voluntarily self-identify their disability, including the need to self-identify to receive reasonable accommodations and the risk of facing stigma or discrimination from an employer once their disability is known. This supports participants in making informed decisions, and they are also prepared with methods to address stigma or discrimination should they face it.

Recommendation 2: Advocate for a Fair, Inclusive Workplace

People with disabilities will be more inclined to voluntarily self-disclose their disability when working in a safe, fair, and inclusive workplace.

City and State Governments: (1) Utilize the city or state's ADA coordinator proactively to promote and enforce fair and inclusive construction workplaces. The *Vermont Agency of Transportation* utilizes its ADA coordinator to ensure ADA transition plans are in place, spaces are accessible to people with disabilities, and to respond to complaints of disability-related discrimination. (2) Leverage the city or state's position to hold employers accountable for equitable hiring practices and ensure hiring is in alignment with city or state mandates. *Seattle's Priority Hire Program* enforces equitable hiring practices among private employers by holding regular meetings with contractors to review their hiring practices.

Trades Associations: Use relationships with employers to practice greater outreach and advocacy for people with disabilities and the accommodations available to integrate them seamlessly into the workforce. *Operating Engineers Local 49* maintains awareness of changes in adaptive technology and discusses methods to integrate these accommodations to support a broader range of disabilities.

Recommendation 3: Increase Accessible Practices and Opportunities for Journey-Level Workers

Pre-apprenticeship and apprenticeship programs serve as gateways for people with disabilities to enter the trades with additional support. Employers may not provide the same level of support or guidance to journey-level workers on a job site.

City and State Governments: Fund a supportive service for providing adaptive technology as a means of reasonable accommodation provision for workers with disabilities. Adaptive technology consists of devices used to support people with disabilities in adapting to their environment. Some examples include eReading technology, hearing aid - compatible phones, closed captioning, and technology for remote control of heavy machinery. The *Oregon Bureau of Labor & Industries* currently offers financial assistance that workers may use to obtain adaptive technology.

Trades Associations: Establish partnerships with companies that produce adaptive technology for the purpose of training people with disabilities on relevant technology and supplying this technology to employers. There is no current example of this happening in the construction workforce field, however, *Chicago Women in Trades*, a nonprofit organization, partners with Jobs for the Future to work with a group focused on improving accessibility.

Nonprofit and Direct Service Organizations: Build relationships with employers to promote candid discussions surrounding the accommodations required for people with disabilities to work on their teams. *Building Pathways* in Boston utilizes employer relationships to promote accommodations for an employee with autism. This partnership ensured the employer was prepared to meet the needs of their new employee, resulting in the selection of a close supervisor to monitor the employee's professional progress and provide additional accommodations and workplace support.

Appendix A. One-Pagers on Quality Workforce Programs for the Construction Trades

1. Civic Works, Baltimore, MD
2. Wisconsin Regional Training Partnership, Milwaukee, WI
3. Ironworkers Local 86
4. Dannon Project, Birmingham, AL
5. Able-Disabled Advocacy San Diego, CA
6. Adaptive Construction Solutions
7. Operating Engineers Local 49 Minneapolis, MN
8. Building Pathways, Boston, MA
9. Chicago Women in Trades

Appendix B. Overview of State DOT Uses of Highway Formula Dollars

Baltimore Civic Works: Center for Sustainable Careers

LOCATION:	Baltimore, MD				
ORGANIZATION TYPE:	Union / Trades Association	Government	Research / Advocacy	Community-Based	
UNDERREPRESENTED POPULATIONS SERVED:	Women ~5%	Opportunity Youth ~30%	BIPOC 90%+	People with Convictions Data not available	People with Disabilities Data not available
PROGRAM SCALE:	Pre-Apprenticeship Program: 83 youth participants across 5 years ~16.6 youth participants per year		Apprenticeship Program: Not Applicable		

Funding

Baltimore Civic Work's Youth Build program is primarily funded by the Department of Labor's Youth Build grant and receives additional funds from local grassroots careers programs.

Recruitment

Strategies used to encourage individuals from underrepresented populations to apply to trades programs

- Multi-trade Exposure
- High-quality Education Programs
- Multi-Channel Outreach Strategies for Recruiting Diverse Populations
- Exposure to the Trades at Young Ages
- Application Process and Hiring Transparency
- Pre-Apprenticeship Program

Supportive Services

Strategies used to support individuals from underrepresented populations in achieving journey level status

- Educating Workers on Their Rights
- Case Management
- Transportation Support
- Financial Assistance
- Access to Materials/Housing
- Childcare Services
- Mental Health Support

Other Retention Efforts

Accommodations provided to meet the needs of underrepresented populations in the trades

- High-quality Instructors
- Efforts to Develop Fair and Safe Workplaces
- Mediation or Ombud Services
- Mentorship
- Diverse Representation in Leadership Roles
- Accountability for Equal Opportunity Employment

Pre-Apprenticeship Youth Outcomes

Attrition Rate: 19% (16 of 83)

Graduation Rate: 81% (67 of 83)

Placed in Apprenticeship/Employment: 71% (59 of 67)

Average Placement Wage: \$16.45

Youth Placement Outcomes*

Retained Placements after 2-years: 71%

Average Attrition Rate: 29%

*Outcomes reflects the average attrition rate across two years for 2018 – 2020 data

Wisconsin Regional Training Program: Big Step

LOCATION:	Wisconsin				
ORGANIZATION TYPE:	Union / Trades Association	Government	Research / Advocacy	Community-Based	
UNDERREPRESENTED POPULATIONS SERVED:	Women ~13%	Opportunity Youth 100%	BIPOC 55%	People with Convictions ~10%	People with Disabilities Data not available
PROGRAM SCALE:	Pre-Apprenticeship Program: ~346 participants per year		Apprenticeship Program: Not Applicable		

Funding

WRTP Big Step is primarily funded by federal and state sources and receives additional funds from private organizations and fundraising efforts.

Recruitment

Strategies used to encourage individuals from underrepresented populations to apply to trades programs

- Multi-trade Exposure
- High-quality Education Programs
- Multi-Channel Outreach Strategies for Recruiting Diverse Populations
- Exposure to the Trades at Young Ages
- Application Process and Hiring Transparency
- Pre-Apprenticeship Program

Supportive Services

Strategies used to support individuals from underrepresented populations in achieving journey level status

- Educating Workers on Their Rights
- Case Management
- Transportation Support
- Financial Assistance
- Access to Materials/Housing
- Childcare Services
- Mental Health Support

Other Retention Efforts

Accommodations provided to meet the needs of underrepresented populations in the trades

- High-quality Instructors
- Efforts to Develop Fair and Safe Workplaces
- Mediation or Ombud Services
- Mentorship
- Diverse Representation in Leadership Roles
- Accountability for Equal Opportunity Employment

Pre-Apprenticeship Youth Outcomes

Attrition Rate: 0% (0 of 62)

Graduation Rate: Data not Available

Placed in Apprenticeship/Employment: 81% (563 of 691)*

Average Placement Wage: ~\$20 per hour

*Reflects 2021 and 2022 program outcomes

Apprenticeship Outcomes

Wisconsin Regional Training Program Big Step does not operate an apprenticeship for youth entering the construction trades and does not track how many participants entering into an apprenticeship achieve journey level status.

Ironworkers Local 86: Youth Pilot

LOCATION:	Washington State				
ORGANIZATION TYPE:	Union / Trades Association	Government	Research / Advocacy	Community-Based	
UNDERREPRESENTED POPULATIONS SERVED:	Women 15%	Opportunity Youth 100%	BIPOC 62%	People with Convictions Data not Available	People with Disabilities Data not Available
PROGRAM SCALE:	Pre-Apprenticeship Program: 13 participants each year 2 program cycles each year		Apprenticeship Program: participants per year: N/A		

Funding

Ironworkers Local 86 pre-apprenticeship is primarily funded by the Washington State Department of Transportation. This funding is allocated to Pacific Northwest Ironworkers and R3 Community Services.

Recruitment

Strategies used to encourage individuals from underrepresented populations to apply to trades programs

- Multi-trade Exposure
- High-quality Education Programs
- Multi-Channel Outreach Strategies for Recruiting Diverse Populations
- Exposure to the Trades at Young Ages
- Clear Application Process and Hiring Transparency

Retention

Strategies used to support individuals from underrepresented populations in achieving journey level status

- Diverse Representation
- High-quality Instructors
- Individualized Accommodations
- Pre-Apprenticeship Program
- Mentorship
- Educating Workers on Their Rights

Supportive Services

Accommodations provided to meet the needs of underrepresented populations in the trades

- Case Management
- Transportation Support
- Financial Assistance
- Access to Materials/Housing
- Childcare Services
- Mediation or Ombud Services
- Labor Management Training Partnerships

Pre-Apprenticeship Youth Outcomes

Graduation Rate: 77% (10/13)

Attrition Rate: 23% (3/13)

Apprenticeship Placement: 100% (10/10)

Starting Apprenticeship Salary: \$30 per hour

Youth Apprenticeship Outcomes

Active Apprentices: 40% (4/10)

Attrition Rate: 60% (6/10)

Journey Status: N/A

The Dannon Project: Re-entry Project for Young Adults

LOCATION:	Tuscaloosa, Birmingham, Thomasville, Alabama				
ORGANIZATION TYPE:	Union / Trades Association	Government	Research / Advocacy	Community-Based	
UNDERREPRESENTED POPULATIONS SERVED:	Women ~5%	Opportunity Youth 100%	BIPOC 90%+	People with Convictions 100%	People with Disabilities Data not available
PROGRAM SCALE:	Pre-Apprenticeship Program: ~573 participants each year ~75 participants in trades pathways each year		Apprenticeship Program: Not Applicable		

Funding

The Dannon Project is primarily funded by the Department of Labor, the Department of Justice, and state agencies such as the Bureau of Justice, the Minority Business Development, and the Department of Mental Health.

Recruitment

Strategies used to encourage individuals from underrepresented populations to apply to trades programs

- Multi-trade Exposure
- High-quality Education Programs
- Multi-Channel Outreach Strategies for Recruiting Diverse Populations
- Exposure to the Trades at Young Ages
- Application Process and Hiring Transparency
- Pre-Apprenticeship Program

Supportive Services

Strategies used to support individuals from underrepresented populations in achieving journey level status

- Educating Workers on Their Rights
- Case Management
- Transportation Support
- Financial Assistance
- Access to Materials/Housing
- Childcare Services
- Mental Health Support

Other Retention Efforts

Accommodations provided to meet the needs of underrepresented populations in the trades

- High-quality Instructors
- Efforts to Develop Fair and Safe Workplaces
- Mediation or Ombud Services
- Mentorship
- Diverse Representation in Leadership Roles
- Accountability for Equal Opportunity Employment

Pre-Apprenticeship Youth Outcomes

Attrition Rate: 8% (49 of 581)

Graduation Rate: 90% (532 of 581)

Apprenticeship Acceptance: N/A*

Average Placement Wage: \$15.68 (all participants)

Apprenticeship Outcomes

The Dannon Project does not operate an apprenticeship for youth entering the construction trades and does not track how many participants entering into an apprenticeship achieve journey-level status.

*While the Dannon Project has 90% job placement, they did not report any youth entering into a registered apprenticeship

Able-Disabled Advocacy: YouthBuild Pre-Apprenticeship

LOCATION:	San Diego, CA				
ORGANIZATION TYPE:	Union / Trades Association	Government	Research / Advocacy	Community-Based	
UNDERREPRESENTED POPULATIONS SERVED:	Women <small>Data not Available</small>	Opportunity Youth 100%	BIPOC 90%+	People with Convictions 60%+	People with Disabilities 60%+
PROGRAM SCALE:	Pre-Apprenticeship Program: 64 participants each year 4 program cycles each year		Apprenticeship Program: Not Applicable		

Funding

Able-Disabled Advocacy's youth programming is funded by a variety of federal and philanthropic grants. This funding is used to manage all youth workforce initiatives' operational and programmatic costs, including wraparound services.

Recruitment

Strategies used to encourage individuals from underrepresented populations to apply to trades programs

- Multi-trade Exposure
- High-quality Education Programs
- Multi-Channel Outreach Strategies for Recruiting Diverse Populations
- Exposure to the Trades at Young Ages
- Application Process and Hiring Transparency
- Pre-Apprenticeship Program

Supportive Services

Strategies used to support individuals from underrepresented populations in achieving journey level status

- Educating Workers on Their Rights
- Case Management
- Transportation Support
- Financial Assistance
- Access to Materials/Housing
- Childcare Services
- Mental Health Support

Other Retention Efforts

Accommodations provided to meet the needs of underrepresented populations in the trades

- High-quality Instructors
- Efforts to Develop Fair and Safe Workplaces
- Mediation or Ombud Services
- Mentorship
- Diverse Representation in Leadership Roles
- Accountability for Equal Opportunity Employment

Pre-Apprenticeship Youth Outcomes

Attrition Rate: 20% (13 of 64)

Graduation Rate: 80% (51 of 64)

Apprenticeship Acceptance: 64% (27 of 42)

Starting Apprenticeship Salary: ~\$17.00

Apprenticeship Outcomes

Able-Disabled Advocacy does not operate a registered apprenticeship for youth entering the construction trades. Additionally, Able-Disabled Advocacy does not track how many participants entering into an apprenticeship achieve journey-level status.

* Wage data is an approximation, as Able-Disabled Advocacy does not separate this data by occupation

Adaptive Construction Solutions

LOCATION:	Houston, TX				
ORGANIZATION TYPE:	Union / Trades Association	Government	Research / Advocacy	Community-Based	
UNDERREPRESENTED POPULATIONS SERVED:	Women data not available	Opportunity Youth 14%	Black 37%	People with Convictions	People with Disabilities 20%
PROGRAM SCALE:	Apprenticeship Program: 551 apprentices 2018 to 2021		Apprenticeship Program:		

Funding

Adaptive Construction Solutions is focused on veterans and over 75 percent of apprentices are veterans. During the first six years, ACS utilized the Workforce Innovation & Opportunity Act (WIOA) funding to provides employers with resources and diverse candidate pools that include job seekers receiving vocational rehabilitation services. More recently, ACS transitioned to promote practices as a US DOL funded apprenticeship intermediary.

Recruitment

Strategies used to encourage individuals from underrepresented populations to apply to trades programs

- Multi-trade Exposure
- High-quality Education Programs
- Multi-Channel Outreach Strategies for Recruiting Diverse Populations
- Exposure to the Trades at Young Ages
- Application Process and Hiring Transparency
- Pre-Apprenticeship Program

Supportive Services

Strategies used to support individuals from underrepresented populations in achieving journey level status

- Educating Workers on Their Rights
- Case Management
- Transportation Support
- Financial Assistance
- Access to Materials/Housing
- Childcare Services
- Mental Health Support

Other Retention Efforts

Accommodations provided to meet the needs of underrepresented populations in the trades

- High-quality Instructors
- Efforts to Develop Fair and Safe Workplaces
- Mediation or Ombud Services
- Mentorship
- Diverse Representation in Leadership Roles
- Accountability for Equal Opportunity Employment

Apprenticeship Outcomes for Apprentices with Disabilities

Attrition Rate: 81%

Journey Rate (finishing 4-year apprenticeship program): 19%

Apprenticeship Salary: \$15/hour with progressive increases

* Wage data is an approximation, as Able-Disabled Advocacy does not separate this data by occupation

Operating Engineers Local 49

LOCATION:	Minnesota, North Dakota, South Dakota				
ORGANIZATION TYPE:	Union / Trades Association	Government	Research / Advocacy	Community-Based	
UNDERREPRESENTED POPULATIONS SERVED:	Women 11% ^e	Opportunity Youth Data not Available	BIPOC 17%	People with Convictions Data not Available	People with Disabilities Data not Available
PROGRAM SCALE:	Apprenticeship Program: 223 new apprentices in last cohort				

*Number is for Building Strong Communities pre-apprenticeship program

Funding

Operating Engineers Local 49 Adult Apprenticeship Readiness Program is funded by employer/employee contributions. They partner with Building Strong Communities pre-apprenticeship program, which is primarily funded through US Department of Labor grants and the Minnesota Department of Transportation.

Recruitment

Strategies used to encourage individuals from underrepresented populations to apply to trades programs

- Multi-trade Exposure
- High-quality Education Programs
- Multi-Channel Outreach Strategies for Recruiting Diverse Populations
- Exposure to the Trades at Young Ages
- Clear Application Process and Hiring Transparency

Retention

Strategies used to support individuals from underrepresented populations in achieving journey level status

- Diverse Representation
- High-quality Training
- Individualized Accommodations
- Pre-Apprenticeship Program
- Mentorship
- Educating Workers on Their Rights

Supportive Services

Accommodations provided to meet the needs of underrepresented populations in the trades

- Case Management
- Transportation Support
- Financial Assistance
- Access to Materials/Housing
- Childcare Services
- Mediation or Ombud Services
- Labor Management Training Partnerships

Women Apprenticeship Outcomes

Active Apprentices: 80% (39/48) for 2021-2022

Attrition Rate: 30% (27/89) on average for 2018-2022

Journey Status: 40% (16/41) for 2018-2020

Building Pathways Boston Pre-Apprenticeship Program

LOCATION:	Boston, MA				
ORGANIZATION TYPE:	Union / Trades Association	Government	Research / Advocacy	Community-Based	
UNDERREPRESENTED POPULATIONS SERVED:	Women 41%	Opportunity Youth Data not Available	BIPOC 91%	People with Convictions Data not Available	People with Disabilities Data not Available
PROGRAM SCALE:	Pre-Apprenticeship Program: ~48 participants each year 3 program cycles each year		Apprenticeship Program: Data not available		

Funding

Building Pathways Boston is a pre-apprenticeship training program funded by governmental and community organizations, including: the City of Boston, Massachusetts Department of Transportation, the Commonwealth Corporation, and the Massachusetts Clean Energy Center.

Recruitment

Strategies used to encourage individuals from underrepresented populations to apply to trades programs

- Multi-trade Exposure
- High-quality Education Programs
- Multi-Channel Outreach Strategies for Recruiting Diverse Populations
- Exposure to the Trades at Young Ages
- Application Process and Hiring Transparency
- Pre-Apprenticeship Program

Supportive Services

Strategies used to support individuals from underrepresented populations in achieving journey level status

- Educating Workers on Their Rights
- Case Management
- Transportation Support
- Financial Assistance
- Access to Materials/Housing
- Childcare Services
- Mental Health Support

Other Retention Efforts

Accommodations provided to meet the needs of underrepresented populations in the trades

- High-quality Instructors
- Efforts to Develop Fair and Safe Workplaces
- Mediation or Ombud Services
- Mentorship
- Diverse Representation in Leadership Roles
- Accountability for Equal Opportunity Employment

Pre-Apprenticeship Outcomes*

Attrition Rate: 9% (42 of 473)

Graduation Rate: 91% (431 of 473)

Apprenticeship Acceptance: 72% (312 of 473)

Starting Apprenticeship Salary: \$22 per hour

Apprenticeship Outcomes*

Attrition Rate: 11% (21 of 473)

Graduation Rate: 89% (175 of 196)

Apprenticeship Acceptance: 73% (128 of 196)

Starting Apprenticeship Salary: \$22 per hour

*Outcomes reflect average rate across all 31 program cycles

Chicago Women in Trades Pre-Apprenticeship Program

LOCATION:	Chicago, IL				
ORGANIZATION TYPE:	Union / Trades Association	Government	Research / Advocacy	Community-Based	
UNDERREPRESENTED POPULATIONS SERVED:	Women 98%	Opportunity Youth Data not Available	BIPOC 76%	People with Convictions Data not Available	People with Disabilities Data not Available
PROGRAM SCALE:	Pre-Apprenticeship Program: 50 participants each year 2 program cycles each year		Apprenticeship Program: N/A		

Funding

Chicago Women in Trades (CWIT) is driven by the mission to ensure that all women who want to work with their hands and earn a good living have equal access to information, training, and employment opportunities in the industry. CWIT's pre-apprenticeship program is funded by governmental and community organizations, primarily: the Illinois Works Pre-Apprenticeship Program.

Recruitment

Strategies used to encourage individuals from underrepresented populations to apply to trades programs

- Multi-trade Exposure
- High-quality Education Programs
- Multi-Channel Outreach Strategies for Recruiting Diverse Populations
- Exposure to the Trades at Young Ages
- Application Process and Hiring Transparency
- Pre-Apprenticeship Program

Supportive Services

Strategies used to support individuals from underrepresented populations in achieving journey level status

- Educating Workers on Their Rights
- Case Management
- Transportation Support
- Financial Assistance
- Access to Materials/Housing
- Childcare Services
- Mental Health Support

Other Retention Efforts

Accommodations provided to meet the needs of underrepresented populations in the trades

- High-quality Instructors
- Efforts to Develop Fair and Safe Workplaces
- Mediation or Ombud Services
- Mentorship
- Diverse Representation in Leadership Roles
- Accountability for Equal Opportunity Employment

Pre-Apprenticeship Outcomes*

Attrition Rate: 8% (4 of 50)

Graduation Rate: 92% (46 of 50)

Apprenticeship Applications: 72% (36 of 50)

Apprenticeship Waitlist: 4% (2 of 50)

Apprenticeship Acceptance: 26% (13 of 50)

Starting Apprenticeship Salary: \$21.45 per hour**

Apprenticeship Outcomes

Attrition Rate: N/A

Graduation Rate: N/A

Apprenticeship Acceptance: N/A

Starting Apprenticeship Salary: N/A

*Outcomes reflect the outcomes of participants who enrolled in the 2022 grant year 1/1/2022 – 12/31/2022

** Average construction industry apprenticeship starting wage for Cook County, IL

Appendix B. Overview of State DOT Uses of Highway Formula Dollars

The Bipartisan Infrastructure Law includes changes that impact how State DOTs can use their formula funding from FHWA to fund workforce development. These changes mean that states can spend more funding on training and preparation for the construction workforce than they could previously. State DOTs can also spend the funding on supportive services that accompany workforce development programs including. According to [formal guidance from the Federal Highway Administration](#), examples of expenses could include the following, subject to approval by the relevant FHWA division office:

- 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, childcare, and temporary lodging.
- Career pathways outreach programs for middle- and high-school students focused on surface transportation.
- Surface transportation-related curriculum, teacher education and training, cooperative education programs, work-study programs scholarships, internships, and skills development training programs.
- Participant support costs, such as stipends.
- Short-term work details or “rotational” assignments for employee development.

Now that wider flexibility has been put in place, more states are spending these highway funds on workforce development. A total of 26 states are now using FHWA formula funding for workforce development or planning to. Fourteen states are implementing new ways to use highway formula funding.

Examples of states that are using significant highway formula funding to help train workers for construction occupations are below in alphabetical order.

- California is investing in the [High Road Construction Careers program](#).
- Idaho is investing in its [Idaho Career Opportunities – Next in Construction \(ICONIC\)](#) training program.
- Oregon DOT invests in the [Highway Construction Development Program](#) that is administered by the Oregon Bureau of Labor and Industries
- Pennsylvania is implementing an [Executive Order from Governor Shapiro](#) dedicating up to \$400 million workforce funding from infrastructure funding. This will include significant funding from PennDOT.
- Wisconsin funds the [Highway Construction Skills Training](#) program.

