



Workforce Development

Water infrastructure projects can't be completed without a skilled workforce. The water sector is at a crossroads: an estimated 10.6% of water sector workers will retire or transfer each year between 2016 and 2026 [according to ASCE](#). Dominated by white, older men, the water sector's turnover and expansion in the coming years could bring in younger, more racially and gender diverse workers. Advocates who focus on workforce development are seeking intentional pathways through local, state, and federal policies and programs as well as through community-based organizations to open opportunities for good jobs in communities where water infrastructure work is needed.

There are several types of positions and approaches to workforce development. Here are some examples:

Types of Water Infrastructure Jobs in Water/Wastewater Systems	Types of Water Infrastructure Construction-Related Jobs
<ul style="list-style-type: none"> • Wastewater treatment operator • Drinking water treatment operator • Water distribution operator • Wastewater collections operator • Electrician • Mechanic • Utility manager/supervisor • Laboratory technician • Green stormwater infrastructure planner • Community engagement specialist • Engineer • Finance administrator • Water affordability program manager • Cybersecurity specialist • Administrator • Accountant • Secretary/HR • Environmental consultant 	<ul style="list-style-type: none"> • Occupational health and safety specialist/technician • Construction equipment operator • Construction laborer • Construction supervisor • Welder • Plumber, pipefitter, steamfitter • Civil engineer • Operating engineer • Concrete worker • Electrician • Administrator • Secretary • And more!

Check out descriptions of these jobs, as well as career and technical education opportunities at [Work for Water](#).

[Brookings Metropolitan Policy Program](#) identifies eight different “water industries” with 212 unique “water occupations.”

Opportunities for Workforce Development Advocacy

Municipality & Utility Procurement & Contracting Protocols

Before on-the-ground implementation of projects funded by SRFs begins, the funded recipient (i.e., a municipality or water utility) must find, or procure, contractors to do the work. The procurement process is typically outlined through documentation available on the municipality's or water utility's website. Systemic barriers and outdated or flawed procurement design can limit who is able to effectively bid on and secure a project. There are many types of reforms that can lead to more equitable opportunities in the procurement process to enable more business opportunities for people of color, women, LGBTQ+ individuals, veterans, and [returning citizens](#).

For example, the [City of Boston](#) conducted a multi-year Disparity Study to understand structural problems through community input and data analysis to compare the participation and availability of businesses receiving city contracts. Based on the results, the City established goals for contracting with BIPOC- and women-owned businesses and created a Small Business Unit and an Equity and Inclusion Unit within their Office of Economic Development. [Equitable Procurement Plans](#) for City departments established how they would make budgetary decisions and [Pathways to City Contracting](#) "opportunity fairs" connect businesses to workshops, trainings, and certifications to do business with the city.

In Louisville, KY, the Louisville and Jefferson County Metropolitan Sewer District (MSD) conducted a [disparity study](#) of contracting practices, looking at data from five years, and found that they under-awarded construction contracts to women- and minority-owned businesses. In response to these findings, [MSD](#) developed a Community Benefits Policy for contracts and enhanced their Supplier Diversity program to increase opportunities for underrepresented groups to work with them. A Local Labor Preference Policy for construction contracts links contractors to local workers and requires bidders to adhere to and track local labor percentage commitments.

Utilities can create procurement protocols that prioritize employment opportunities for local residents, encourage small contractors to apply and win bids, and ensure data collection, monitoring, and accountability to track progress of equitable allocation of bids. Municipalities may adopt an apprenticeship utilization standard and/or [project labor agreements](#) (PLA) to bolster the workforce development pipeline and ensure fair and safe labor standards. For example, the Milwaukee Metropolitan Sewerage District ([MMSD](#))'s Office of Business and Community Engagement implements procurement practices influenced by the [Milwaukee Water Equity Taskforce](#). This includes a pre-apprenticeship training program used to recruit, train, and place local workers on large construction projects to help them achieve journeyman status.

Another term you should familiarize yourself with is "community workforce agreement" or CWA (not to be confused with the [Clean Water Act](#)). According to [BlueGreen Alliance](#), a CWA generally includes requirements related to local hire provisions, measures to hire low-income and disadvantaged workers, and developing pre-apprenticeship pathways. Check out Emerald Cities Collaborative's [compilation of CWA examples](#) and their "Anatomy of a Community Workforce Agreement" guide to learn more. When crafting recommendations to your city or water system, it's important to consider accountability measures: Who will track metrics and report on whether goals have been achieved? Should there be a community advisory group that the city reports to? What happens if equitable procurement requirements aren't followed?



Community Workforce Agreement (CWA): A tool used to maximize project benefits in a local community through collective bargaining agreements, local hire provisions, measures to hire low-income and disadvantaged workers, and developing pre-apprenticeship pathways.

The Environmental Finance Center Network provides programs and resources focused on workforce development within the water sector, including how to create a [skills-based water workforce pre-apprenticeship program](#).

<p>The seven major elements to the anatomy of an effective CWA, according to Emerald Cities Collaborative:</p>
<p>1. Clearly Articulated Targeted Hiring Goals</p>
<p>2. Definition of the Targeted Employment Category</p>
<p>3. Definition of Good Faith Effort</p>
<p>4. Monitoring and Compliance</p>
<p>5. Accountability Mechanisms/Sanctions</p>
<p>6. Minority, Women, and Disadvantaged Business Enterprises (MWD BE) Carve-Outs</p>
<p>7. Funding Mechanisms</p>

The United Association of Plumbers and Pipefitters developed [essential quality contracting standards](#) for lead service line replacement projects. The three types of Quality Contracting Policies they uplift to ensure successful project completion are:

- 1) prevailing wage standards,
- 2) responsible contractor policies, and
- 3) project labor agreements.



The United Association of Plumbers and Pipefitters crafted the following models, which we include here as sample language.

Model Prevailing Wage Standard Specification

All contractors and subcontractors on this project are required to pay applicable prevailing wage rates per [insert reference to applicable federal/state or local law]. Compliance with the requirements will be closely monitored and strictly enforced through maximum penalties and sanctions as provided under the law.

Model “Class A” Apprenticeship Program Specification

The contractor/subcontractor certifies, under the penalty of perjury, that it participates in a Class A Apprenticeship Program for each separate trade or classification in which it employs craft workers on the project. For purposes of this clause, a Class A Apprenticeship Program is an apprenticeship program currently registered with the U.S. Department of Labor or a state apprenticeship agency that has graduated apprentices to journeyman status for at least three of the past five years.

Model Project Labor Agreement Specification

All contractors and subcontractors of any tier, that perform work on the Project shall execute and be bound by the Project Labor Agreement (PLA) attached hereto in Appendix _____. Subcontractors may satisfy this requirement by executing the applicable Letter of Assent included in the PLA. this provision shall constitute a material term of any construction contracts or subcontracts for the Project.

Note: the PLA document itself must be developed with the local Building & Construction Trades Council in the area where the project is located; most of these counsels have model PLAs from prior projects.



EQUITABLE PROCUREMENT RESOURCES: MODEL POLICY & REPORTS

[Boston’s Equitable Procurement Executive Order](#)

[Equity in Construction Contracting: Some Goals Achieved Despite Mismanagement, Waste, and Gamesmanship](#), Portland City Auditor, summarizes the City’s efforts to implement contracting equity programs and highlights design flaws, legal restrictions, and mismanagement, but also offers program design and accountability improvements.

[An Equitable Water Future: Louisville](#), US Water Alliance

[Inclusive Procurement and Contracting: Building a Field of Policy and Practice](#), Emerald Cities Collaborative and PolicyLink

Justice40 Playbook: [The Economic Justice Playbook](#), Emerald Cities Collaborative

Community Benefits Agreements



Community Benefits Agreement (CBA): A legally binding, enforceable contract that is negotiated between a developer and an impacted community that explains how the developer will create opportunities for local workers, mitigate environmental and/or public health harm, and otherwise positively contribute to the local community.

The [process of creating a CBA](#) provides an expansive range of community members with the opportunity to inform how development will affect them. Private CBAs are legally enforceable agreements between community-based organizations (CBOs) and developers, while public CBAs include community benefits in a development agreement that resulted from extensive community participation. Successful CBA campaigns build power from a diverse base of coalition members who can effectively influence public officials, elected representatives, and developers, and maintain oversight and engagement throughout the development process.

A common benefit present in CBAs is the commitment to providing living wage employment opportunities to local residents and/or to provide training programs to prepare them for the type of work needed to complete the project.

The EPA's [guidance memo to states](#) explains that they should “Encourage SRF funding recipients to support safe, equitable, and fair labor practices by adopting collective bargaining agreements, local hiring provisions (as applicable), project labor agreements, and community benefits agreements.”



CBA RESOURCES

[Community Benefits](#) resources abound from PowerSwitch Action (previously Partnership for Working Families), providing tools and assistance to community-based efforts to transform local economies.

[Negotiate Community Benefits Agreements with Developers](#), Good Jobs First

[Which Community Benefits Agreements Really Delivered?](#), article by Alex Williamson, *Shelterforce: The Original Voice of Community Development*

[Fighting for Equity in Development: The Story of Detroit's Community Benefits Ordinance](#), written by Daniel Kravetz in consultation with the Detroit People's Platform and Equitable Detroit Coalition.

Community-Based Organizations' Workforce Development Programs

Community-based organizations (CBOs) are crucial stakeholders in efforts to improve access and equity in workforce development. CBOs can play multiple roles: advocating for stronger policies and better programs, connecting community members to resources and opportunities, and operating their own workforce development programs, including youth pre-apprenticeship programs and apprenticeship programs with wrap-around services such as transportation services, health clinics, and interview preparation.

If your organization operates a workforce development program, or if you collaborate with a CBO that does, identify the skills and labor demand that will be needed to complete water infrastructure projects in your community, and tailor program training and opportunities to tap into the job creation opportunities this funding represents.

In Detroit, Michigan, [bilingual contractor training](#) for lead paint abatement is building up a workforce that can be hired by the city's lead abatement program to remediate lead from homes primarily located in Spanish-speaking neighborhoods. Tailoring training to meet the specific needs of communities not only opens up job opportunities and circulates wealth locally, [but also helps ensure communities are better prepared for project work](#) and can appropriately inform communities about the challenges, risks, and positive outcomes associated with infrastructure projects.



COMMUNITY-BASED ORGANIZATION RESOURCES

[Proven State and Local Strategies to Create Good Jobs with IIJA Infrastructure Funds](#), Center for American Progress

[Thrive New Orleans Green Workforce Training Program](#)

Civic Works, a Baltimore based non-profit program: [Baltimore Center for Green Careers \(BCGC\)](#). Read [more here](#).

State-Level Water Workforce Programs

States can create more robust frameworks for workforce development requirements around hiring practices and priorities and may be an important arena for workforce development advocacy. State-funded programs could provide a pipeline of skilled water sector workers.

Building a career ladder needs to include opportunities for apprentices who are new to the field. In Illinois, all projects that exceed \$500,000 in loan funds, including those funded through SRFs, must adhere to Illinois Works Jobs Program Act Apprenticeship Initiative requirements. The Illinois Department of Commerce and Economic Opportunity (DCEO) oversees this requirement. The [Initiative](#)'s goal is that “apprentices perform either 10% of the total labor hours actually worked in each prevailing wage classification or 10% of the estimated labor hours in each prevailing wage classification, whichever is less.” Contractors must submit monthly reports tracking their compliance.



STATE WORKFORCE DEVELOPMENT PROGRAM & FUNDING EXAMPLE

[Illinois' Clean Water Workforce Pipeline Program](#)

In 2019 Senate Bill 2146 established a Clean Water Workforce Pipeline Program to providing funding to community organizations, educational institutions, workforce investment boards, community action agencies, and multi-craft labor organizations to implement water sector training programs, with a specific goal of placing “residents of environmental justice communities; residents of economically and socially disadvantaged communities; those returning from the criminal justice system; foster care alumni; and, in particular, women and transgender persons” in jobs created by state financed water infrastructure projects.”

Unfortunately, the program has not yet been funded (as of November 2022) and developed, but this piece of legislation demonstrates the potential impact a statewide framework could achieve in intentionally creating an equitable workforce program.

It's possible to make recommendations to include economic development criteria in a state's SRF project priority ranking factors. In Pennsylvania, [PENNVEST adds points](#) to the rating for each project if it has a direct or indirect link to job creation or preservation and private investment. In [Indiana](#), the Alliance of Indiana Rural Water's Indiana Drinking Water Certified Operator Apprenticeship Program is supported by the state's DWSRF base capitalization grant set-aside.

Federal Workforce Development Programs

Opportunities to build the water workforce exist at the national level as well. The EPA's [Innovative Water Infrastructure Workforce Development Grant Program](#) provides nonprofit organizations and institutions of higher education with funding to build career opportunities and workforce development within the drinking water and wastewater sector. One grant recipient in Michigan, the [Grand Rapids Community College](#), partners with the public school system, the City of Grand Rapids, and other nonprofits to conduct training program outreach in low-income neighborhoods, provide job skills training to students, and aims to increase the quantity of certified water and wastewater treatment workers in the area by 20%.

For more background information and opportunities for action on workforce development in the water sector, take a look at the Brookings report, “[Renewing the water workforce: Improving water infrastructure and creating a pipeline to opportunity](#),” which outlines a [water workforce playbook](#) with several actionable points for utility employers, regional collaborations, and state and federal agencies. The EPA's [America's Water Sector Workforce Initiative](#), developed in 2020, outlines EPA's goals of collaborating with other federal agencies and working with utilities, tribes, and states to bolster water sector careers. Finally, the BlueGreen Alliance's [User Guide to the Bipartisan Infrastructure Law](#) outlines how BIL can provide opportunities across sectors to maximize benefits for workers, communities, and equity.