CITY of BOSTON

2026

CLIMATE READY WORKFORCE ACTION PLAN

Appendix B.
Supplementary Materials of Boston Training Opportunities

Table of Contents

PART A.

Training Inventory of Boston-Serving Programs

Appendix B.

1. Non-profits, Utilities, City of Boston, Business Coalitions

A. Building Decarbonization

1. POWERCORPSBOS

Boston, MA

Experiential Learning	Paid Training	Stackable Credentials	Employer Partnerships	Employability Skills	Comprehensive Services
✓	✓	✓	✓	✓	✓

30-40	70%	57%
Cohort size	Graduation rate	Job placement rate*

*Direct employment only, 43% of students continued in additional training

About the program

Launched as a pilot program in July 2022, PowerCorpsBOS (PCB) is a workforce training program created as part of Boston's Green New Deal and modeled after Philadelphia's PowerCorpsPHL.[1] PCB is a partnership led by the city's Worker Empowerment Cabinet and the Energy, Environment, and Open Space Department.[2] The program creates a pathway to living-wage careers for historically marginalized groups while supporting the city's climate mitigation and resilience efforts.[3] PCB and PowerCorpsPHL have cross-team training to share best practices.

PCB offers training in three specialized tracks: urban greening, urban forestry, and building operations. The program serves Boston residents aged 18-30 who have a high school diploma or

[1] Torrie 2023; Kool 2022

[2] Jefferson, Powers, and Hinds-Watson 2024

[3] Workforce Development, n.d.

equivalent (GED/HiSET), are unemployed or underemployed, and have an interest in outdoor, hands-on training. The program prioritizes reentering citizens, court-involved residents, youth who have experienced homelessness or housing instability, young people who have been in foster care, and other marginalized groups.[4]

Starting in 2024, PCB will move to a 10-month model (previously 6 weeks for the first 3 cohorts) that is closer to the PowerCorpsPHS model. Urban forestry track will change to offer more advanced, specialized training that prepares participants for intermediate-level jobs, while urban greening will be created to offer generalized training for entry-level positions in related fields.[5]

The first cohort graduated 21 participants in urban forestry with a completion rate of 70%.[6] Of the 12 graduates who directly went into employment, 7 found jobs in arboriculture/horticulture/parks. 9 graduates returned to PCB to seek further training: 2 as Assistant Crew Leaders, 6 in Building Operating Systems (BOS), and 1 in the Urban Forestry program. One continued at a full-time program at Roxbury Community College (RCC).[7] The second cohort graduated 30 students in urban forestry and 10 in the new BOS program developed by Roxbury Community College and A Better City.[8] Thirteen went directly into employment: 4 in park maintenance jobs and 3 in Building Operations. 11 graduates returned to PCB for additional training: 3 as Assistant Crew Leaders, 4 in the Urban Forestry program, and 4 in BOS. These numbers demonstrate the program's high success rate. The goal is to expand the class to 50 participants (combined) per year.[9]

Partnerships are key to the program's success. Employer partners give students hands-on experience and knowledge of the field. Potential employers give presentations and host site visits. These include Mass Horticulture, Mt. Auburn Cemetery, Newton Cemetery, and the Harvard Arboretum. The Boston Housing Authority, one of the program's partners, is exploring a resident ambassador program with PCB to promote green jobs and other opportunities for BHA residents.[10]

Since 2021, PCB has developed new tracks to meet employment demand. The first cohort focused on urban forestry where they worked with 18 service project partners and 4 city departments while completing relevant training and course modules. UMass Amherst has tailored an Into to Arboriculture class for PCB participants held at the Mt. Ida campus that provides 3 college credits. The course counts toward a six-course arboriculture certificate that is available online. If participants choose to, the college credits can be put towards an associate

[4] Rattigan 2023

[5] Jefferson, Powers, and Hinds-Watson 2024

[6] Ibid.

[7] Jefferson, Powers, and Hinds-Watson 2024

[8] Shankman 2023; Rattigan 2023

[9] Jefferson, Powers, and Hinds-Watson 2024

[10] Boston Housing Authority (BHA) 2023

degree.[11] Some program graduates continued to work for the Boston Housing Authority and Umass Mount Ida's campus.[12]

In 2023, PCB collaborated with Roxbury Community College's Center for Smart Building Technology and A Better City (ABC)[13] to provide hands-on training in decarbonized building operations with ABC's member businesses and institutions in large buildings across Boston, such as the City of Boston, Beacon Capital Partners and their building operator partner, NEWMARK, Brigham and Women's Hospital, C&W Services, Dana-Farber Cancer Institute, the Federal Reserve Bank of Boston, JLL, and MassGeneral Hospital. For 2024, PCB is planning on developing training related to the solar industry.[14]

Initially, the City of Boston allocated $1 million for green jobs from the Fiscal Year 2022 operating budget for the Cabinet of Environment, Energy and Open Space. In July 2022, the City Council authorized an additional $3 million of American Rescue Plan funding to expand the program.[15] In October 2023, the city received a $11.4 million federal grant from the U.S. Forest Service's Urban and Community Forestry Program (part of the Inflation Reduction Act), part of which will be used for workforce development in urban and community forestry. The funding will allow PCB to expand the program to two cohorts per year and increase stipends. Participants will work on increasing Boston's tree canopy as part of the city's new Tree Alliance program.[16] AmeriCorps funding partially covers stipends of participants in the urban forestry program, while building operations stipends come from the PCB budget and employer partners.[17]

Program structure

The 10-month program is divided into two phases:

Phase 1: Foundations (4 months)

> All participants receive training on technical and employability skills, are introduced to green industry careers, and are connected to support services (e.g. financial literacy, resume writing, and interviewing). Participants who complete Phase 1 training can apply to a specialized track (urban greening, urban forestry, or building operations).

[11] The courses at UMass Amherst Mount Ida campus are often participant's first introduction to higher education.

[12] Workforce Development, n.d.

[13] ABC's work is funded by the Linde Family Foundation and the Barr Foundation.

[14] Shankman 2023

[15] Environment 2021

[16] Parks and Recreation 2023

[17] Jefferson, Powers, and Hinds-Watson 2024

Phase 2: 3 different Industry Academy tracks (6 months)

Urban greening

- Green infrastructure, urban agriculture, and natural resource management curriculum.

Urban forestry

- Arboriculture (soils, urban tree stressors, and pruning techniques), Operating power tools.

Building operations

- Conducting energy audits, maintaining electrical, HVAC and plumbing systems, Certifications (Building Operator Certification (BOC), Fundamentals in Energy Efficient Building Operations (FEEBO), and a Green Building Professional - Operations and Maintenance (GPRO O&M))

PCB provides participants with employability and technical skills, plus OSHA-10 certification.[18] Participants are paid a weekly stipend of $550 ($15.75/hour) and work 35 hours per week (Monday-Friday, 8:30 am-3:30 pm). Wednesdays are half-days, which allow participants to have a free afternoon for personal appointments. Participants receive a monthly T-pass, assistance with getting a driver's license, and assistance with their job search, including mock interviews, talking with current employees in private and public sector jobs, and attending conferences.[19] Cohort 3 participated in PCB's first career fair for members and graduates, which had 18 employer/training partners in attendance.

Although city employment opportunities are open to the public, PCB is also developing career pipelines into city departments by tailoring the training to the job descriptions of expected openings.[20] For instance, the new Forestry Division in the Boston Parks and Recreation Department has created 3 positions tailored for Urban Forestry graduates.[21] Unlike the urban forestry program, the BOS program has a 6-month internship embedded in the training. By the end of the internship, most BOS program participants have job offers from their internship sponsors.[22] PCB offers continuing education opportunities through MA's tuition free community college opportunities.[23] Moreover, urban forestry participants who complete 450 hours can get a $1,700 AmeriCorps education stipend, which can be used for any education or training program.[24]

[18] Workforce Development, n.d.; Jefferson, Powers, and Hinds-Watson 2024

[19] Kool 2022; Workforce Development, n.d.

[20] Jefferson, Powers, and Hinds-Watson 2024

[21] Gambill 2023; Jefferson, Powers, and Hinds-Watson 2024

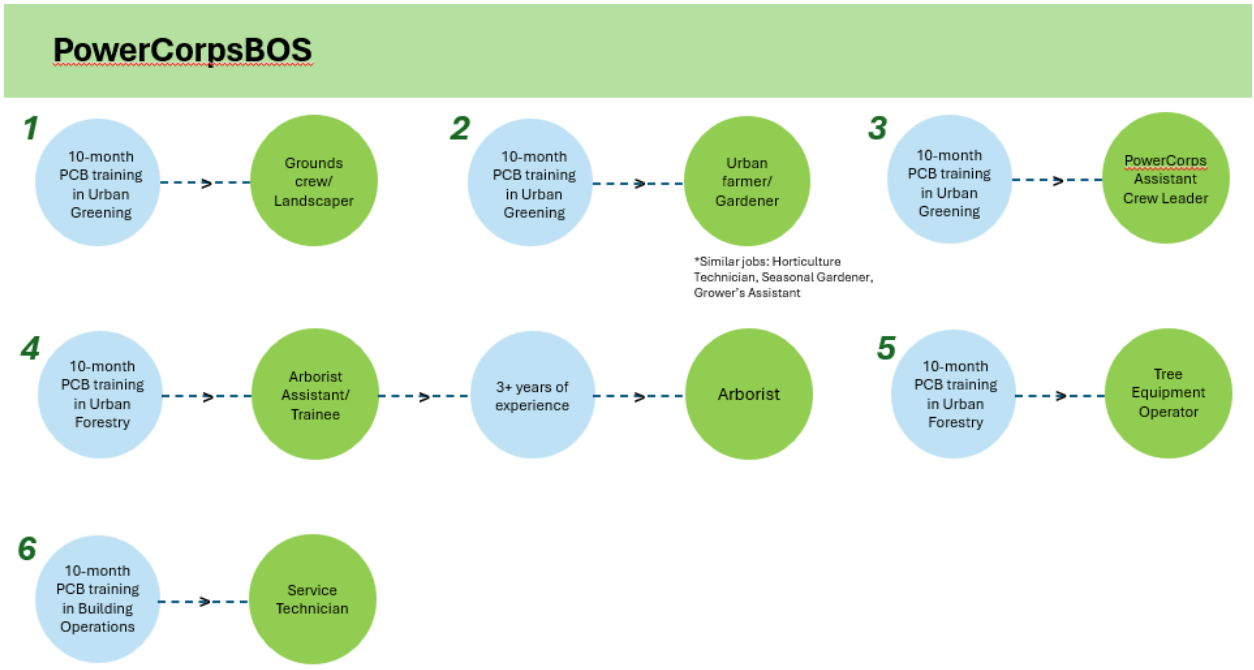
[22] Jefferson, Powers, and Hinds-Watson 2024

[23] Workforce Development, n.d.

[24] Jefferson, Powers, and Hinds-Watson 2024

Program partners

PCB has 3 kinds of program partners: **Project/Training sites**, **Workforce development**, **Educational/Networking**



Contacts

- Davo Jefferson, Executive Director, davo.jefferson@boston.gov
- Taylor Powers, Workforce Development Director, taylor.g.powers@boston.gov
- Peggy Hinds-Watson, Director of Data & Operations, peggy.hinds@boston.gov

2. BOSTON CIVILIAN CLIMATE CORPS

Boston, MA

Experiential Learning	Paid Training	Stackable Credentials	Employer Partnerships	Employability Skills	Comprehensive Services
✓	✓	✓	✓	✓	✓

15	NA*	NA*
Cohort size	Graduation rate	Job placement rate

*not available during time of study

About the Program

The Boston Civilian Climate Corps (Climate Corps) is a collaboration of BlocPower, Browning the Green Space (BGS), Roxbury Community College (RCC), and the Mayor's Office of Returning Citizens. The program focuses exclusively on building electrification training for reentering citizens. The program is funded by a $1.2 million MassCEC Equity Workforce Training grant awarded to BlocPower in August 2023. Browning the Green Space (BGS) assists with program design and implementation, partnership development by connecting the program with other workforce development partners, such as the Codman Square Neighborhood Development Corporation (CSNDC) and supporting participants with job placement and career connections.[25] The Climate Corp graduated 2 cohorts during their Spring/Summer 2024 pilot, totalling 30 participants.

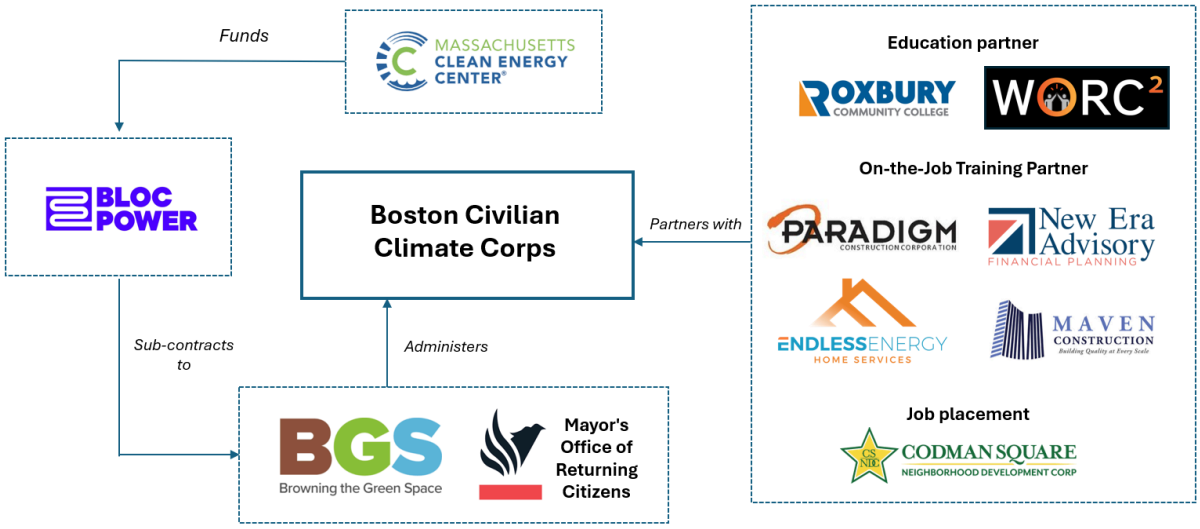
Brooklyn-based BlocPower is a climate technology company started in 2014 to provide technical assistance to cities, utilities, and other entities to plan, finance, and implement equitable decarbonization strategies. The company also has developed green workforce development programs targeting young people from disadvantaged communities and reentering citizens in New York City, Chicago, Philadelphia, and Oakland. More cities, including Boston, are funding BlocPower to provide green workforce training.

[25] "Blocpower Awarded Grant By MassCEC To Launch Workforce Development Program For Returning Citizens" 2023; Harrington 2024

Program structure

The 16-week program is loosely modeled after BlocPower's training approach, the Climate Corps, which was launched in September 2021 in New York City.[26] The program consists of two parts:

- **Classroom-based instruction** (10 weeks): Participants learn the fundamentals of energy efficiency building operations, building science principles, OSHA-10, construction basics, air source heat pump technology, and career development. Training is split between RCC and Workforce Opportunity Resource Center (WORC2) in Roxbury.
- **On-the-job training** (6 weeks): Participants receive on-the-job training with partner organizations, operating like a paid apprenticeship. BGS also assists with barrier removal work with respect to the background check policies associated with the Mass Save program.[27]



Contacts

Alisha Harrington, alisha@browningthegreenspace.org

[26] Harrington 2024

[27] "Blocpower Awarded Grant By Masscec To Launch Workforce Development Program For Returning Citizens" 2023

3. MASS SAVE CLEAN ENERGY PATHWAYS

Boston, MA

Experiential Learning	Paid Training	Stackable Credentials	Employer Partnerships	Employability Skills	Comprehensive Services
✓	✓	✓	✓	✓	✓

10-15	74%	70%
Cohort size	Graduation rate	Job placement rate

About the program

Started in 2021, the Mass Save Clean Energy Pathways (CEP) program is a full-time, paid ($20.00 per hour), three-month internship that provides access to opportunities for underrepresented groups in either weatherization or HVAC. Participants are offered mentorship and job placement assistance. The program targets young adults between 18-23 years who reside in Dorchester, Mattapan, Roxbury, and several other cities in the Commonwealth who identify as a person of color, a woman, LGBTQI+, first generation, and/or multilingual. Other requirements include a high school diploma or equivalent, some English proficiency, and passing background checks (including CORI).[28]

Mass Save is a collaborative of natural gas and electric utilities and energy efficiency service providers in Massachusetts, including Berkshire Gas, Cape Light Compact, Eversource, Liberty, National Grid, and Unitil. Mass Save works with community organizations to identify work-ready young adults from underrepresented communities to enroll in the program. [29] In Boston, Mass Save partners with the Green Jobs Academy and Asian American Civic Association to identify interns.

CEP program completers are recruited into the internship program. Typically, there are 3-4 cohorts per year with 10-15 interns. Prior to starting the internship, Mass Save provides participants with a two-day career readiness program that covers soft and professional skills. Mass Save also develops an extensive network of employer partners to sponsor the interns. ICF is the subcontractor that screens applicants, arranges interviews, places interns, and provides professional development to applicants throughout their internship with “professional

[28] “Clean Energy Pathways,” n.d.

[29] “Mass Save Announces Launch of Clean Energy Pathways Program” 2021

development Mondays." These weekly foster a sense of community with the internship cohort and addresses professional and personal problems interns may have.

Another Mass Save program started in 2021 is the Workforce Partnership Grants, which split $343,000 amongst 5 organizations committed to growing and diversifying the energy efficiency workforce, particularly in EJ communities: The Asian American Civic Association, Benjamin Franklin Cummings Institute of Technology, Caribbean Youth Club (Dorchester), South Middlesex Opportunity Council - Green Jobs Academy, and Local Initiatives Support (LISC) Massachusetts. Boston-serving All In Energy was part of a second Workforce Partnership Grant, which split $140,000 with three other providers. An additional $250,000 will be available for the 2023 and 2024 funding rounds.[30] Mass Save keeps extensive data on program outcomes (see table).

Mass Save Workforce Partnership Grant Outcomes

Cohort	Accepted into CEP Program	CEP Interns (matched with BPs)	Percent of participants that matched with a BP	CEP Graduates	Percent of interns that graduated	Interns with job offers as of the last day of the program	Percent of graduates that received jobs
Cohort 1 (weatherization and HVAC)*	38	13	34%	5	38%	3	60%
Cohort 2 (HVAC)	14	14	100%	12	86%	8	67%
Cohort 3 (weatherization)	24	16	67%	8	50%	8	100%
Cohort 4 (HVAC)	20	13	65%	13	100%	10	77%
Cohort 5 (weatherization)	19	10	53%	7	70%	4	57%
Cohort 6 (HVAC)**	11	2	18%	2	100%	0	0%
Cohort 7 (both)							
TOTALS	**126**	**68**	**54%**	**47**	**74%**	**33**	**70%**

*This cohort was implemented by a vendor prior to ICF joining the team.
**This cohort was intended to be very small as it was not aligned with local HVAC training graduation schedules.

Contact:

John Massie, John.Massie@nationalgrid.com

Sonakshi.Saxena@nationalgrid.com

[30] "The Sponsors of Mass Save® Award $343,000 to Five Community Organizations Committed to Diversifying the Energy Efficiency Workforce" 2023

4. BRIDGE TO GREEN JOBS

Boston, MA

Experiential Learning	Paid Training	Stackable Credentials	Employer Partnerships	Employability Skills	Comprehensive Services
✓	✓	TBD (may be offering OSHA10 again)	✓	✓	✓

10	97%	76%
Cohort size	Graduation rate	Job placement rate

About the Program

Launched in May 2022, the Bridge to Green Jobs (BGJ) prepares trainees to become weatherization technicians. The program was conceived after three years of research and planning by LISC Massachusetts (previously LISC Boston), through internal LISC funding of $150,000 to finance 3 pilot cohorts. The program has completed 5 cohorts to date. Program funding continues through TD Bank Charitable Foundation and MassCEC. The training was originally hosted by the Center for Working Families for the first 4 cohorts but was transferred to Dorchester Bay Economic Development Corporation as the new Boston community-based partner. The program was first replicated in Lawrence in early 2024, and has plans to expand more throughout the Commonwealth over the next two years.

The 2-week program includes technical skills such as handling ladders, attic training, and power tools, essential soft skills, career exploration components, and includes 7 full days of hands-on experience. Participants are paid $1,000 for attending the program. Additionally, the program offers long-term financial coaching, job-placement assistance that includes resume building and interview preparation. Another service is industry transition coaches who offer support for personal and employment concerns of graduates for twelve weeks post-program. Financial assistance is available to help with unexpected expenses in their first 6 months and mitigate job retention barriers. $3,000 is allotted per participant, disbursed as $500 monthly payments while employed in the targeted industry, with additional emergency funding pools as needed. Examples of expenses covered include car repairs, childcare, housing and groceries, but participants may use this as regular discretionary income, following a no-questions-asked Guaranteed Basic Income type of model. Participants must be at least 18 years old, have a valid driver's license and reliable transportation, pass a drug test (marijuana is exempt), and U.S. work

authorization to be employed. At this time, CORI-impacted residents can be better served by alternative green training programs.

The program costs approximately $15,000-18,000 per student to deliver, with a typical cohort having 10 participants. The cost includes the technical and soft skill training and all necessary equipment and supplies per student, stipends, assistance funds, wraparound supports, and all essential backend administrative work.

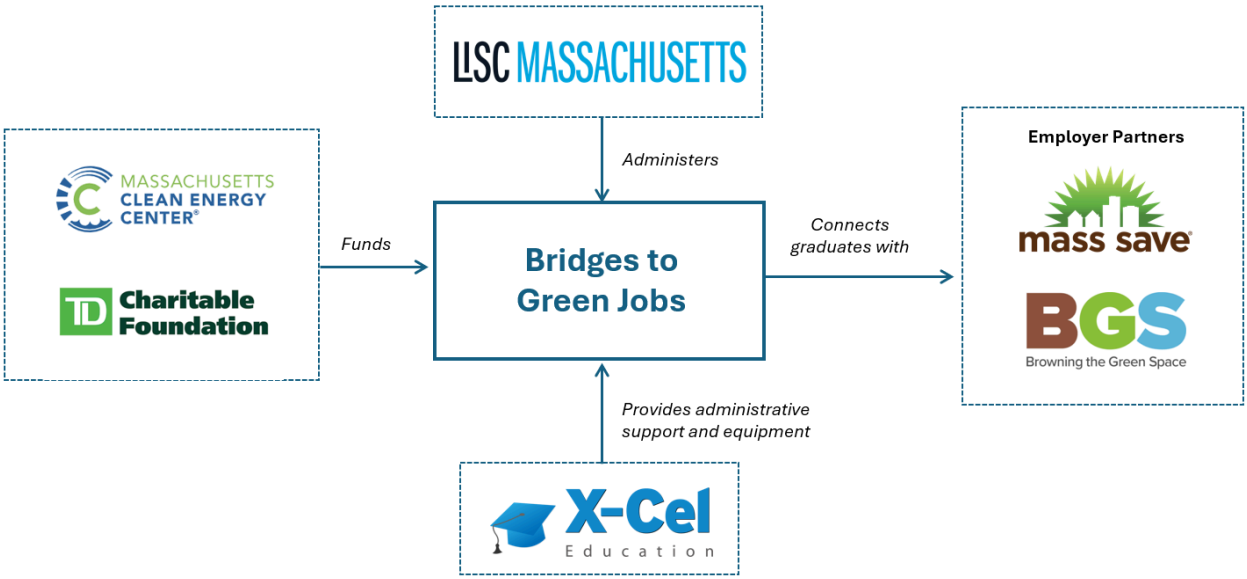
The average 6-month retention rate over 5 cohorts is 50%. The job placement rate for the last two cohorts was 76%. To support strong employment outcomes, LISC Massachusetts aims to strengthen relationships with employers. In a typical two-week session, 3-4 employers come in to speak and have first dibs on graduates. Starting pay for graduates is approximately $20/hour (*Not currently bridging graduates to HomeWorks due to job quality or BE Retrofit due to placement difficulties*).

Although LISC started the program in Boston in May 2022, it is now only offered in Lawrence. Ultimately, four cohorts completed the program, but due to difficulties of Boston residents in finding transportation to employers 30-40 minutes outside the city, LISC decided to offer it exclusively in Lawrence, the first replication site. LISC plans to expand the program to other Environmental Justice areas such as New Bedford and Springfield as continued funding from MassCEC and TD Bank Charitable Foundation, and others permit.

Program structure:

Wraparound support partners work with employed graduates to identify advancement opportunities. For example, if it is apparent that participants have high customer service or math skills, they are introduced to the possibility of becoming energy auditors after six months on the job, or recommending graduates who express an interest in starting their own business connect with the Browning the Green Space ACCESS program once they obtain a Crew Lead certification, at minimum, the most common milestone for BGJ graduates. Employees can take the four-day course once recommended by their supervisors, which is paid for by the employer and MassSave after approximately six months on the job. As new programs in Green rise up, the future vision for BGJ is to become step one for aspiring clean energy workers by providing buildable technical skills, career exploration, and solid community-based support, to prepare them not just for weatherization careers, but other promising work and training opportunities. As Silvana Bastante Muñoz, Program Officer, Green Jobs and Economic Opportunity at LISC Massachusetts noted, “Our goal is to get participants a foot in the door and then to help them advance.”

Program partners



Contact

Silvana Bastante, Program Officer, sbastante@lisc.org

5. BUILT ENVIRONMENT PLUS**

Boston, MA

Experiential Learning	Paid Training	Stackable Credentials	Employer Partnerships	Employability Skills	Comprehensive Services
✓	No	✓	✓	No	✓

800	NA	NA
Employees trained*	Graduation rate	Job placement rate

*Since 2018

About the program

Since its inception in 2018, the Built Environment Plus (BE+) (formerly the Massachusetts chapter of the US Green Building Council) has used $1.5 million from the Commonwealth's Workforce Training Fund to provide training to more than 800 employees on various aspects of green building management and practices. Almost all served by this program are already employed.

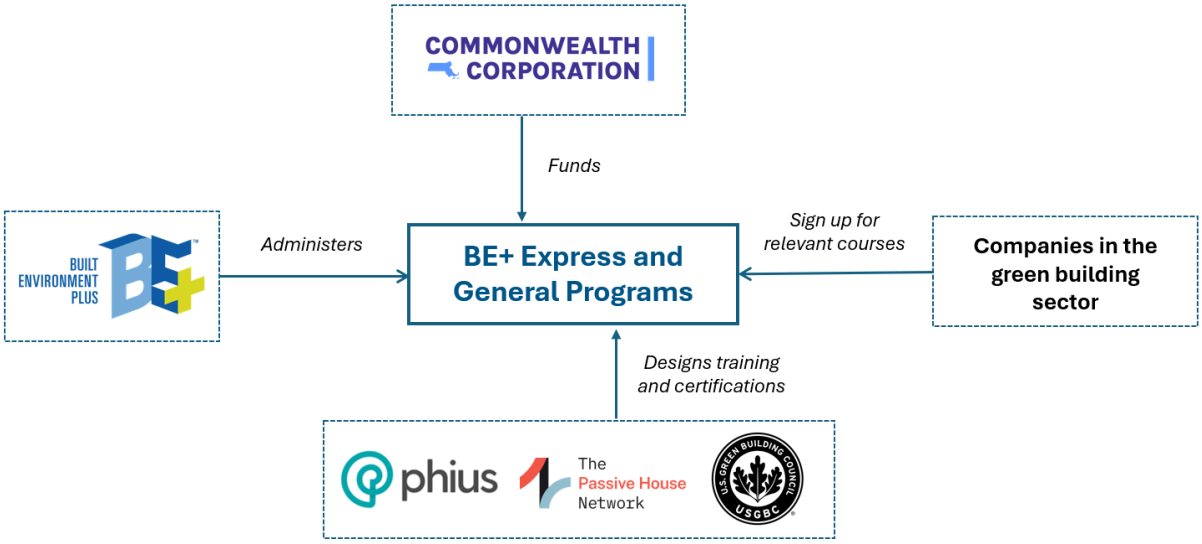
BE+ oversees two training programs. The Express Program provides small grants to businesses with 100 or fewer employees to take BE+ courses in specific skills needed by the company. The grants cover a maximum $3,000 per person per course, but courses typically cost between $150 and $300. Companies can receive up to $20,000 annually under this program.

The General Program helps businesses of any size design two-year training programs for their employees. Companies can receive up to $200,000 for the programs. Companies have to match the grant amount by paying the wages of their employees while in training. BE+ offers access to more than 150 classes and certifications, which cover numerous aspects of green building management. Included are exam-prep classes for LEED, International Living Futures Institute, PassiveHouse and other green building programs.

BE+ partners with three national nonprofits to provide long-term training. These include Phius, which provides training and certifications in its climate-specific passive building standard; Passive House Network, which provides introductory and advanced certifications in passive house construction; and the U.S. Green Building Council, which offers a wide array of on-demand and live courses. At the state level, MassCEC just sponsored the BE+ embodied

carbon challenge in Massachusetts by paying instructors to teach members.

Program Partners



https://builtenvironmentplus.org/green-building-tech/

Contact:

Allison Zuchman, allison@builtenvironmentplus.org

6. ASIAN AMERICAN CIVIC ASSOCIATION: BUILDING ENERGY EFFICIENT MAINTENANCE SKILLS (BEEMS) AND WEATHERIZATION TRAINING TECHNICIAN

Boston, MA

Experiential Learning	Paid Training	Stackable Credentials	Employer Partnerships	Employability Skills	Comprehensive Services
✓	✓	✓	✓	✓	✓

BEEMS

21-23	~100%	95%
Cohort size	Graduation rate	Job placement rate

Weatherization Technician Training

10-18	97%	83%
Cohort size	Graduation rate	Job placement rate

About the programs

Founded in 1967, the Asian American Civic Association (AACA) is a social planning and cultural advocacy agency that serves the greater Boston immigrant community. They provide workforce training, basic adult education, after-school youth programs for children and teens, and other social services to help low-income individuals and immigrants with limited English proficiency achieve economic self-sufficiency.[31] They offer two programs that lead to green jobs: the Building Environmental Efficiency and Maintenance Skills (BEEMS) and Weatherization Technician Training Program. Employability and wraparound services by AACA support participants' success, including resume building, interview preparation, conflict resolution, related job skills, computer skills, math, and vocabulary. As an organization, AACA also has services for housing assistance, mental health counseling, and community health.[32]

[31] "Mission." n.d.

[32] https://www.aaca-boston.org/

AACA relies entirely on grant funds to operate BEEMS. Boston's Neighborhood Job Trust, funded through linkage fees from developers of large-scale commercial projects in Boston, has been a long-standing funder of the program, but has reduced its grants in recent years. AACA also receives funding as part of a federal Good Jobs Challenge centered at Franklin Cummings Institute of Technology. Whether the program pays wages to trainees depends on the allowed uses covered by each funding source.

Program structure

BEEMS program

The BEEMS program is a comprehensive 17-week training course that AACA has been offering for 20 years. BEEMS is provided at no-cost to income-qualified candidates. BEEMS trains participants for a career as a maintenance technician/engineer. The hands-on curriculum covers the fundamentals of carpentry, plumbing, painting, electricity, energy efficiency, and weatherization. The program integrates English and math tailored to the maintenance industry, job readiness skills, and OSHA-10 safety training. The instructors offer extra help on vocabulary, basic math, and computer skills if needed. Two 4-hour classes are held at the AACA Innovation Center in Chinatown twice a week in the evening to deliver the 340-hour curriculum. Candidates must be at least 18 years old, preferably have a driver's license, have US work authorization, and pass an intake assessment that covers basic math, vocabulary, and language skills. The program is CORI friendly.

Graduates receive post-completion job placement assistance from AACA. Through partnerships with hospitals, hotels (e.g. Saunders Group, Marriott, Holiday Inn), property management groups (e.g. Winn, Maloney, Peabody), schools, and other institutions, the program boasts a graduation rate of nearly 100% and a placement rate of about 95%. Because AACA has an employment specialist who works with participants, all program completers are guaranteed a job. Starting salaries average $23-24/hr and go up to $28/hr. To meet increasing demand, AACA increased the cohorts from 14-15 to 21-23.

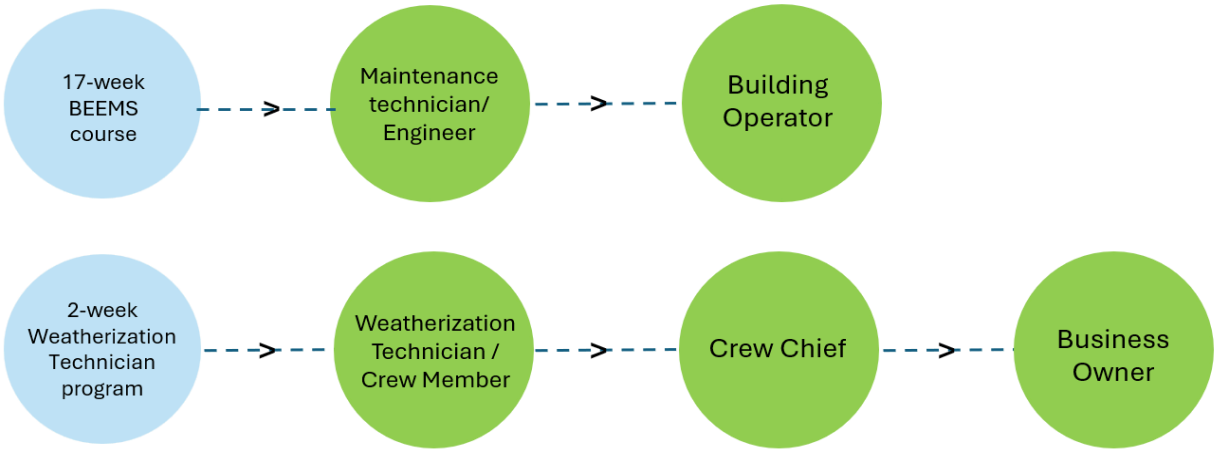
Weatherization Technician Training program

The Weatherization Technician Training program is a 2-week pre-apprenticeship program that provides hands-on training for air sealing, insulation, moisture controls, and ventilation. Candidates must be at least 18 years old, have a driver's license or reliable transportation, pass a drug test and CORI check, be physically fit for construction, and pass an intake exam. The full day classes (Monday-Friday 9am-5pm) are held at the AACA Innovation Center.

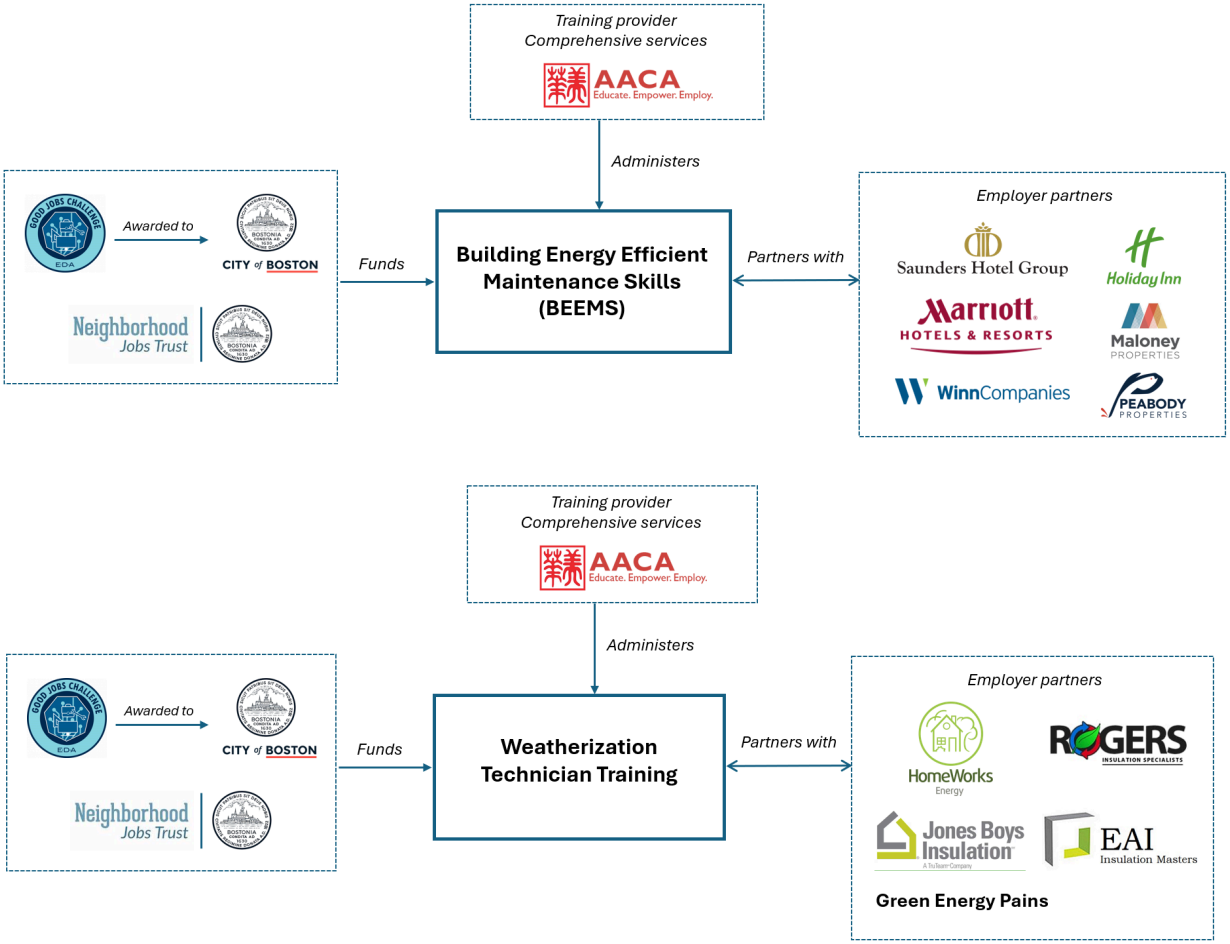
Like BEEMS, the no-cost program provides OSHA-10 certification and guarantees apprenticeship with employer partners. Entry-level jobs in weatherization pay up to $25/hour and often require no experience. Once employed, weatherization technicians often advance into supervisory roles (Crew Chief and Supervisor) that pay as much as $120,000 annually. Some employer partners include Homeworks, Jones Boys, EAI, Green Energy Pains, and Rogers Insulation.

***Highlight*:** A key feature of the programs is at least two years of retention assistance AACA offers once participants are employed. This comprehensive service helps individuals advance in their careers. AACA reaches out to graduates on a monthly basis to discuss challenges, plan for advancement, and offer general assistance as needed.

Career Ladder



Partnership Diagram



Contacts

Ted Dever, tdever@aaca-boston.org

7. ALL IN ENERGY ENERGY AUDITOR***

Lawrence, MA

Experiential Learning	Paid Training	Stackable Credentials	Employer Partnerships	Employability Skills	Comprehensive Services
✓	✓	✓	✓	✓	✓

~5	NA	NA
Cohort size	Graduation rate	Job placement rate

About the program

All in Energy is a non-profit organization dedicated to accelerating an inclusive clean energy economy by bringing energy efficiency and renewable energy to underserved communities. For years, All in Energy has assisted energy vendors in marketing to and serving non-English speaking customers. To create a career pipeline in the clean energy industry for residents of disadvantaged communities, All in Energy is creating an Energy Auditor training program.

The program will start in the Merrimack Valley, particularly in Lawrence, which is an EJ community. They will target BIPOC Spanish speakers with English fluency, as well as people who are unemployed, underemployed, working in the informal economy, or coming out of a technical education program. They must have a high school diploma or equivalent by the end of the 6-month training, a fairly clean driving license, a vehicle, and go through a Mass Save criminal background check and drug screening. The first cohort will hire 5 participants.

In 2023, they were awarded a $50,000 MassCEC Planning and Capacity Grant to design the program. The program focuses on preparing multilingual residents from EJ neighborhoods for customer-facing roles for Mass Save programs, particularly bilingual energy specialists at Mass Save Home Performance Contractors and Lead Vendors. Recently, All in Energy applied for a $100,000 capacity building grant from MassCEC to hire an associate director and start delivering the program in the Merrimack Valley.

Program structure

All in Energy hires participants as full-time, paid bilingual Spanish and English customer service representatives ($23.50/hour) who help households access and navigate the Mass Save program. They assist with determining eligibility, translating contracts, finding vendors, applying for incentive programs, understanding the benefits of different products, interpreting

Mass Save auditor reports, and exploring different jobs in the energy efficiency industry (by liaising with them).

Over six months, participants focus on four key areas

1. Phone customer service training
2. Energy specialist building science and sales training
3. 120 hours of Building Performance Institute (BPI) certification preparation and testing
4. Job readiness training. There are 4 days of on-the-job training, including shadowing energy auditors and insulation/air sealing installers, and 1 day of classroom training each week that will be held by All in Energy and Abode Energy Management.

All in Energy has secured job placement partnerships with Mass Save Lead Vendors: NEEECO, Valley Home Insulation, HomeWorks, CET, and RISE Engineering for energy specialist roles. During the program, participants engage in presentations on these roles and participate in mock interviews. After 6 months, the program manager will support participants in interviewing for home energy specialist roles with Mass Save Home Performance Contractors and the Lead Vendors. If positions are not available at partner companies, the program manager will assist participants to apply in related companies, like Community Action Partner agencies (i.e., GLCAC, ABCD), or, depending on capacity, stay in a customer service role at All In Energy.

The BPI Building Analyst Technician and Professional Certification gives participants an advantage when applying for full-time energy specialist positions and energy auditors in the long run. All in Energy will cover the $1,900 testing fee per participant.

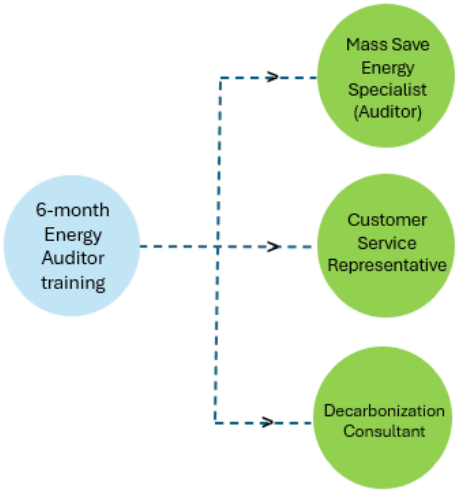
All in Energy provides a wide range of comprehensive services. All participants receive a stipend ($1,500-$1,820) and are connected to partner organizations for financial literacy, housing and utilities, mental health support, and low-cost childcare. The organization purchases Lenovo Ideapad laptops ($500 each) for participants without computers and provides assistance to buy or lease a used hybrid or electric vehicle by the end of the 6 months, plus 6 months of vehicle lease covered by All in Energy.

Additionally, All in Energy requires job placement partners who do not have a DEIJ program for their employees or a high level of BIPOC or multilingual staff to become a coalition member of Browning the Green Space.[33] This ensures that their partners will commit to three DEIJ action steps by the end of the year, join professionally facilitated workshops with DEIJ trainers, and can participate in peer-to-peer DEIJ learning sessions. Alternatively, partners can hire a DEIJ trainer for their staff, including the supervisor for new energy specialists.

[33] An annual membership with BGS costs $700/year for companies with 1-20 employees, $1,500/year for companies with 21-100 employees

Program partners

Career ladder



Contacts

Gabe Shapiro, Co-Founder & Co-Executive Director, Partnerships, gabe@allinenergy.org

8. YOUTHBUILD BOSTON

Boston, MA

Experiential Learning	Paid Training	Stackable Credentials	Employer Partnerships	Employability Skills	Comprehensive Services
✓	✓	✓	✓	✓	✓

Building Trades Exploration

22	74%	67%
Cohort size	Graduation rate	Job placement rate

Pre-apprenticeship program

15	94%	67%
Cohort size	Graduation rate	Job placement rate

The Designery*

28	93%	NA*
Cohort size	Graduation rate	Job placement rate

*Career awareness, not for job placement

About the programs

YouthBuild Boston (YBB) empowers young adults (ages 16-24) by providing them with hands-on experience in construction and design-related occupations in the building industry, leadership development, career planning, and related support services. Many of the participants have dropped out of high school, come from low-income backgrounds, or have been involved in the juvenile justice system. The overarching goal is to support participants in obtaining their high school diploma or GED while providing job skills to prepare them for further education or

employment. YBB employs a full-time recruiter to do outreach with high schools, community centers, and develop referral pipelines to identify students.

YBB offers 4 programs: Building Trades Exploration (BTE), the Pre-apprenticeship program, The Designery, and the Facilities Maintenance Technician Apprenticeship. YouthBuild is incorporating green skills into BTE and the Pre-apprenticeship program.

Building Trades Exploration

Building Trades Exploration is a 6-9 month academic and construction trades program for young people aged 17-24 who do not have a high school diploma. Participants take prep classes to earn their high school equivalency or diploma and also learn about construction techniques, landscaping safety (OSHA-10), tools, and materials. Students engage in construction projects. The program is certified by the National Center for Construction Education and Research (NCCER).

Pre-apprenticeship Program

The 15-week program is for young people aged 18-25 who have a high school diploma or equivalent. Students gain hands-on experience at real construction sites and earn safety certifications (e.g. OSHA-10 and CPR/First Aid/AED) and attend professional development workshops. Workshops cover specific construction techniques. The goal is for participants to obtain jobs with advancement potential in the trades or to move into union apprenticeship programs.

Participants in both programs are paid the standard $125/week YBB stipend, provided by Commonwealth Corporation Youth Works and Mayor's Office of Workforce Development. Programs funded by the Private Industry Council or other funders pay $18.75 per hour. Union trades apprenticeships typically last five years with wage increases for each year. While this is a predictable path, many participants choose to go directly to employment as there are many jobs that they can advance into more quickly. As a youth development organization, YBB provides wraparound services. Participants are assigned a case manager who identifies services needed ranging from mental and behavioral health counseling (provided onsite in individual or group format) to job readiness, support for obtaining a driver's license–even buying cars. The model emphasizes strong mentoring and building one-on-one relationships with staff.

The cohort size is typically 15 for the Pre-apprenticeship and 22 for the Building Trades exploration. About 36 students complete the programs annually. Approximately 95% finish the Pre-apprenticeship program and about 75% get jobs in the first year after completion. Staff members are currently designing a program to offer engaged follow-up with participants for 2-4 years after program completion.

The Designery*

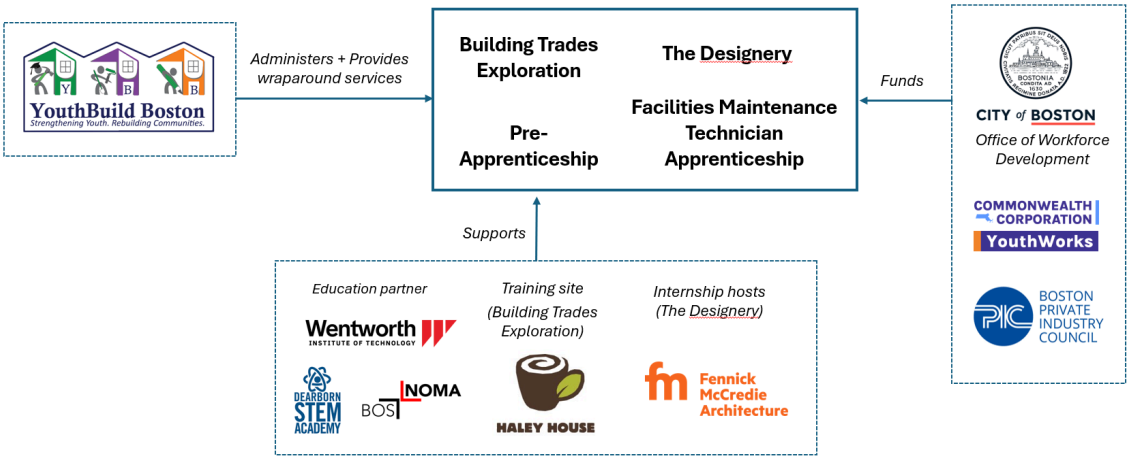
The Designery program is a 7-10 week architecture/design/urban planning career exploration program for high school students. A goal is to expose students to college degree programs in

these fields. Students receive a bi-weekly stipend while learning core graphic, modeling, and design-thinking skills through real design projects for non-profit clients in Boston. Some students participate in internships with Boston-area design firms. The new program at Dearborn Stem Academy starting in Fall 2024 will include credit-bearing work taught by BosNOMA (National Organization of Minority Architects) members. The goal is to create similar programs in other Boston Public Schools.

Facilities Maintenance Technician Apprenticeship

The Facilities Maintenance Technician Apprenticeship that ran for two years is on hold while it is being modified. It is an 18-month program designed for young adults aged 18 to 25 who are seeking to build a career in facilities maintenance. The program offers participants hands-on experience and essential skills in a real-world setting and the opportunity to earn eight college credits at Wentworth Institute of Technology that can be applied toward a bachelor's degree in facilities management. Staff are exploring connecting the program to Roxbury Community College's Center for Smart Building Technology.

Program partners



Career ladder

Contacts

Verena Catherine Niederhoefer, Senior Director of Workforce Development & Strategic Initiatives, vcniederhoefer@ybboston.org

Nathan Polk, Director of Programs & Partnerships, npolk@ybboston.org

9. BUILDING OPERATOR CERTIFICATION (BOC) TRAINING**

Boston, MA (national program)

Experiential Learning	Paid Training	Stackable Credentials	Employer Partnerships	Employability Skills	Comprehensive Services
✓	No	✓	✓	No	No

20	NA	NA
Cohort size	Graduation rate	Job placement rate

About the program

The Building Operator Certification (BOC) Training is a nationally recognized, competency-based training and certification program for building operators that focuses on energy efficiency. Utilities in different regions of the country offer varying levels of reimbursement in the hope that having more well-trained building operators will reduce energy demand. The regional program that covers Boston is sponsored by Cape Light Compact, Eversource, National Grid, Energize CT, and RI Energy. BOC offers Fundamentals, Level I, and Level II training courses, providing a tiered approach to learning that accommodates varying levels of interest and expertise. The program has been offered for more than ten years.

Program structure

The 18-hour Fundamentals course covers energy efficiency in commercial buildings. The curriculum includes topics such as Energy Efficiency and Sustainability Overview, HVAC Fundamentals, Lighting Fundamentals, Energy Conservation Opportunities, Indoor Environmental Quality, and Measuring and Benchmarking Energy Performance. The course costs $1,250 (the standard national tuition rate) but discounts are available for certain regions. Participants receive a Fundamentals Certificate, which can be paired with one year of experience to be eligible for Level I training.

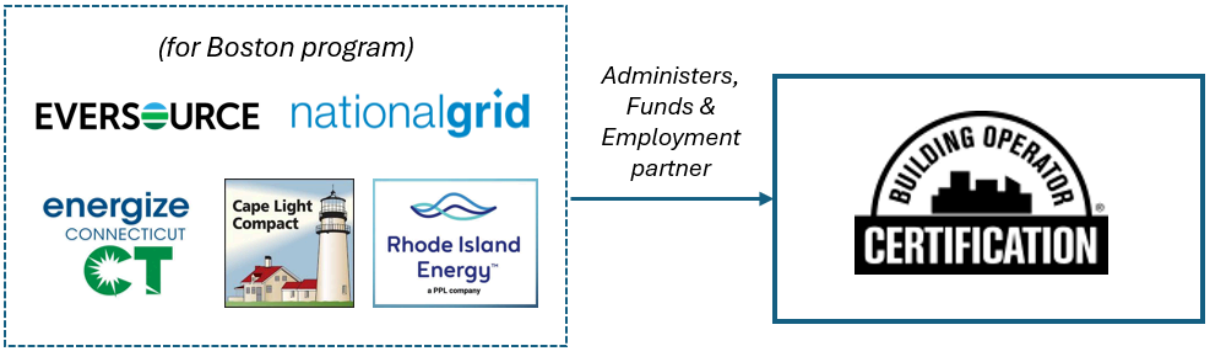
Level I training is a 74-hour curriculum that covers energy efficient operation of HVAC systems, measuring and benchmarking energy performance, efficient lighting fundamentals, HVAC control fundamentals, indoor environmental quality, low-cost operational improvement, electrification and building operations. It includes online and live curriculum and projects. The course is typically offered over a three-month period as participants are typically working full time. After the BOC Certification Exam, participants receive a Training Certificate of Completion (TCOC) and become Certified Building Operators. Participants must have two or more years in building operations and energy management. The course is offered 3-4 times a year, depending on demand. A typical cohort has 20 participants.

Four City of Boston employees have taken Level 1 training, representing Boston Public Schools, Boston Public Health Commission, Emergency Medical Services and the Public Library.

Level II is a 61-hour course that delves deeper into evaluating the operational performance of buildings for enhancing energy efficiency. This segment includes detailed coursework on subjects such as building scoping for operational improvement, optimizing HVAC controls, building commissioning, water efficiency, and electrification and building operations. Instead of a final exam, participants present a final scoping report for their building with their classmates and instructors. Participants receive a TCOC upon completion.

Both Level I and II cost $2,095 each, with discounts available for participants served by Eversource Massachusetts, National Grid and RI Energy. National Grid offers up to 100% reimbursement of tuition on successful completion of Level 1 training for participants who manage buildings of 20,000 square feet or larger. Only one professional per customer facility can receive a reimbursement in a five-year period.

Program Partners



Contacts

Rob Brandt, Robert.Brandt@nationalgrid.com

10. GREEN EQUITY PARTNERSHIP**

Boston, MA

Experiential Learning	Paid Training	Stackable Credentials	Employer Partnerships	Employability Skills	Comprehensive Services
✓	No	✓	✓	No	No

NA	NA	NA
Cohort size	Graduation rate	Job placement rate

About the program

Action for Equity is a coalition of 13 community-based and social justice organizations that are working to address structural racism and deep-rooted inequities in the greater Boston region by creating and implementing policies on transit, health, housing, and good jobs. In 2023, Action for Equity received an initial $1.2 million grant from the MassCEC Equity Workforce Training Grant to develop the Green Equity Partnership pilot program for 3 years, part of their Jobs Equity movement building. It is directed by a Joint Community and employer oversight committee with advocacy partners. Action for Equity described the pilot as a demonstration project of using public funding to upskill workers currently employed in the building decarbonization industry. They worked with Browning the Green Space (BGS) and the Massachusetts Climate Action Network (MCAN) as advocacy partners.

Program structure

Since April 2024, the GEP offers training to employed workers who need skill upgrading in the building decarbonization industry, namely HVAC basic credentials, HERS Rater certification, and the new Green Project Lead. In 2025, they will add initial electrician classes.

The program has employer partners that are committed to hiring from historically excluded Black and BIPOC communities in the Fairmount Corridor in Boston, which supports their goals of increasing access to quality jobs and entry into the growing green economy for those groups. They aim to work with 15-20 employers and approximately 100 individual participants.

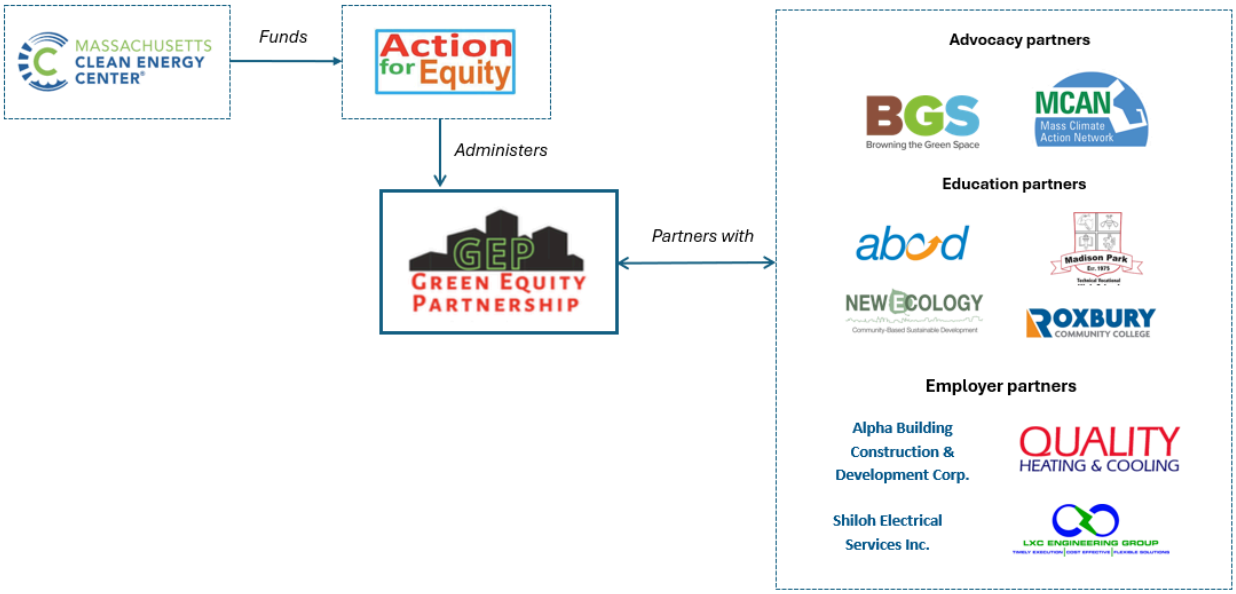
Career ladder

Trainee → Rating Field Inspector → HERS Rater → Passive House Rater.

Other opportunities: business start-up i.e., ACCESS (BGS/GTL)

HVAC front-line worker → additional certifications allowing additional assignments → 3-4 years experience with licensed professional + 400-hour training → licensed refrigeration Technician

Program Partners



Contacts

Tarshia Green-Williams, Deputy Director, tarshia@action4equity.org

11. BUILDING TRADES PRE-APPRENTICESHIP PROGRAM (BUILDING PATHWAYS)

Boston, MA

Experiential Learning	Paid Training	Stackable Credentials	Employer Partnerships	Employability Skills	Comprehensive Services
✓	No	✓	✓	✓	✓

~17	92%	85%
Cohort size	Graduation rate	Job placement rate

About the program

Since 2011, Building Pathways has offered a Building Trades Pre-Apprenticeship Program, a preeminent pre-apprenticeship program that is a pathway to family-sustaining careers in construction.[34] The organization was created by Former Secretary of Labor Martin J. Walsh to increase workplace diversity and offer good career opportunities for women and people of color.[35] The program is part of North America's Building Trades Unions (NABTU) Apprenticeship Readiness Multi-Craft Core Curriculum Program and is one of 5 union-based pre-apprenticeship programs in Massachusetts.

The program provides 200+ hours of no-cost Career Readiness and Occupational Skills Training, blending classroom learning with hands-on experience. Participants are equipped with the necessary knowledge and skills to succeed in a union apprenticeship, supported by case management and placement services. Successful placement in an apprenticeship program enables participants to receive on-the-job training, earn competitive wages and benefits, and benefit from life-long learning opportunities.[36]

Participants must be at least 18 years old, a resident of Suffolk, Norfolk, Middlesex, or Essex counties, have a high school diploma or equivalent, are currently unemployed or under-employed, authorized to work in the US, are a licensed driver, and are drug-free.

[34] Vogel 2024.

[35] https://www.naco.org/people/us-secretary-labor-martin-j-walsh

[36] https://buildingpathwaysma.org/pre-apprenticeship-program/

Program Funding

The program started offering 2 cohorts per year in 2011 and expanded to 3 cohorts per year in 2015 as Building Pathways was a sub-recipient of the City of Boston's application to the Greater American Apprenticeship Initiative Grant from the US Department of Labor ($1.2 million). In 2024, the program expanded to 4 cohorts with a $650,000 grant from the Beth Israel Deaconess Medical Center). Most of Building Pathways' funding comes from public workforce development training grants, including the National Institute of Environmental Health Sciences (NIEHS), the Commonwealth Corporation, MassCEC (Offshore Wind and Equity Workforce grants), the City of Boston's Workforce Development Office, and MassDOT. Recently, they started receiving funding from private foundations. Their budget has expanded from $200,000 in 2011 to over $2 million in 2024.

Program structure

The 200-hour program consists of Career Readiness and Occupational Skills Training and runs 4 training cycles per year: a 6 to 7-week class (Monday-Friday, 7am-3:30pm) and a 14-week class (3 nights/week, 6-9pm and Saturdays 7am-3:30pm).[37]

The Occupational Skills Training component is based on NABTU's Multi-Craft Core Curriculum (MC3) which includes a green construction module. The 120-hour MC3 covers all the tools and techniques of skilled trades (plumbing, electrical, sheet metal, and iron work), as well as applied mathematics, blueprint reading, history of construction, OSHA-10 certification, Hazwoper, and First Aid/CPR.[38] Participants also have field trips to union training centers where they learn about green construction in building, transportation, and renewable energy sectors. Throughout the program, participants receive employability skills training, namely financial literacy, interviewing, resume building, teamwork, and communication skills.

The program follows graduates until they are placed in apprenticeship programs and for at least one year post-placement. Due to varying application cycles, Building Pathways places graduates in interim jobs with contractors connected to unions, which sometimes lead to sponsorships into an apprenticeship program. They also have an active alumni committee that engages with participants, provides networking opportunities, supports recent graduates, and helps recruit new members.

Additionally, Building Pathways provides financial assistance for purchasing tools, workwear, union dues, and transportation cards. While they provide limited case management services in-house to address immediate needs around housing, food insecurity, and legal issues, they often refer participants to third-party organizations. They also match participants and graduates with their childcare program, which offers early daycare hours.

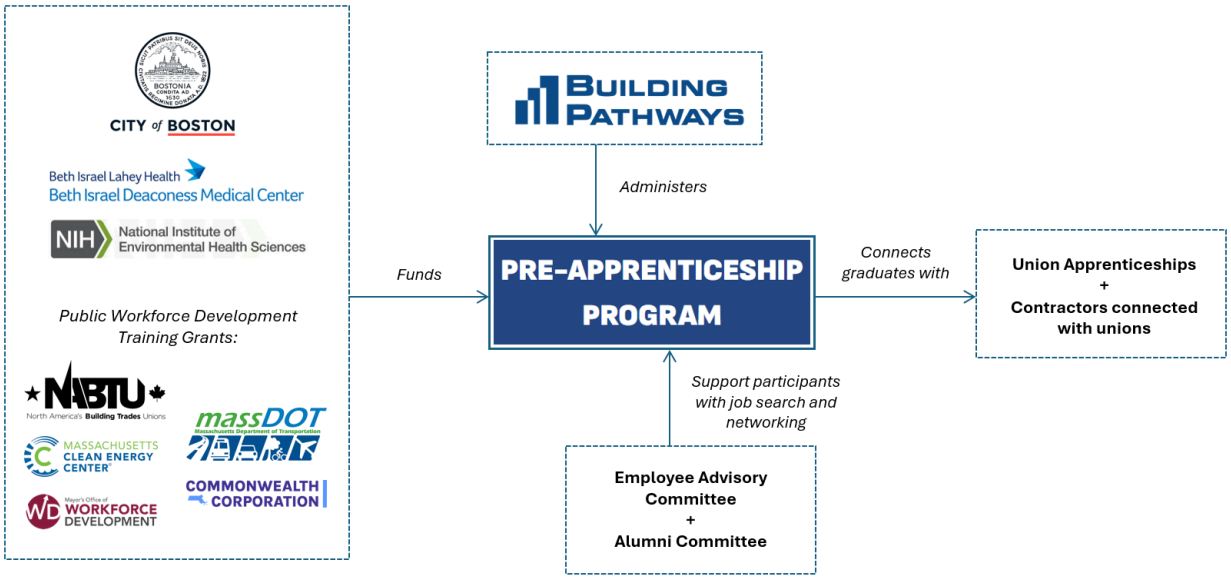
Building Pathways has an employee advisory committee with members who actively participate in the program by giving presentations, conducting mock interviews, and assisting with their

[37] https://buildingpathwaysma.org/pre-apprenticeship-program/

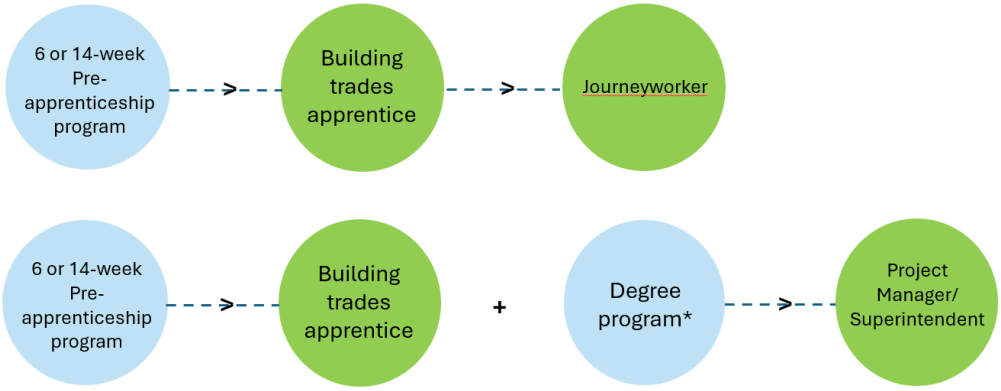
[38] https://www.wfscapitalarea.com/our-services/multicraftcorecurriculum/

job search. Contractors who work with the program may request or sponsor recent graduates they have connected with. While most participants go on to apprenticeship programs, some choose to work for utility companies (e.g., National Grid), the Boston Housing Authority, the MBTA, or contractors that are connected to the unions.

Program partners



Career pathways



*The type of degree they receive depends on the trade. Some of our trades have articulation agreements with Wentworth and/or Benjamin Franklin Cummings Institute. The Carpenters also partner with SUNY Sullivan.

Contacts

Mary Vogel, Executive Director, mary@buildingpathwaysma.org
Nancy Luc, Deputy Director, nancy@buildingpathwaysma.org

12. GREEN JOBS ACADEMY HOME WEATHERIZATION AND CREW LEAD TRAINING**

Boston, MA

Experiential Learning	Paid Training	Stackable Credentials	Employer Partnerships	Employability Skills	Comprehensive Services
✓	No	✓	✓	NA	NA

*will be available for 2-week Home Weatherization Installer Training bootcamp in 2025-27

8-10	NA	NA
Cohort size	Graduation rate	Job placement rate

About the program

Green Jobs Academy (GJA), part of South Middlesex Opportunity Council (SMOC), is "New England's only regional Home Weatherization and Energy Efficiency training facility for income-eligible (weatherization assistance) and market-rate networks (Mass Save program)." GJA provides 2 types of training: (1) entry-level skill training for high-demand, living-wage jobs with a career ladder in the weatherization industry and (2) provide upskilling/further training for weatherization and energy efficiency professionals. Their goal is to create a skilled, diverse workforce that can exceed the state's climate goals. Their four programs are Interstate Renewable Energy Council (IREC) accredited, aligns with DOE curriculum, and offers limited class sizes to ensure quality training.[39]

Typically, the program receives participants from 3 different sources: individuals who are looking for new career opportunities, contractors who are training new hires, and individuals recruited by partners like ICF, the City of Boston, Department of Transitional Assistance Office in Lowell, La Colaborativa, and more. Contractors pay to get new hires trained by the GJA.

GJA's training facility is located in Marlborough. They partner with Knights Transportation to provide transit options to participants from across the Boston metropolitan area and recently invested in a Mobile Training Center to take their Home Weatherization Installer training on the road, such as to the DTA office in Lowell and to La Colaborativa in Chelsea, which was done in Spanish. They also conduct outreach to improve career awareness in junior high and high schools in the Greater Boston area.[40]

[39] https://www.greenjobsacademy.org/about

[40] DeYoung 2024

Program structure:

There are 2 Home Weatherization Training programs:

1. ***Home Weatherization Installer "Boot Camp" (10-day, 70-hour course, $3,200 per person)***
    - Entry-level participants receive their OSHA 10, OSHA Confined Space, and RRP Lead Renovator certifications (week 1) and Weatherization Installer certification (week 2). The first three are fundamental to all construction fields. The course provides fundamental weatherization knowledge, basic safety, and employability skills development, such as conflict resolution, resume writing, and interviewing.[41]

2. ***Weatherization Crew Lead (4-day, 28-hour, $1,595 per person)***
    - Current weatherization professionals with at least 6 months or 1,000 hours of weatherization installer experience are trained in leadership and advanced weatherization skills.

OSHA training is required to work on contracts with the City of Boston. Mass Save also requires Crew Leads on all job sites, which has created a demand for this profession.

> ***Highlight***
>
> GJA is also holding a train-the-trainer class for current weatherization professionals who are interested in teaching. They are hoping that more than one trainer will be multilingual to improve language access.

Currently, GJA informally connects bootcamp graduates to contractors. Many graduates have been hired by HomeWorks Energy, B. Alpha Construction, Athena Building Performance, and Wollaston Construction. GJA is working with employer partners through ICF to formalize agreements that include a 3-month, paid, full-time internship.

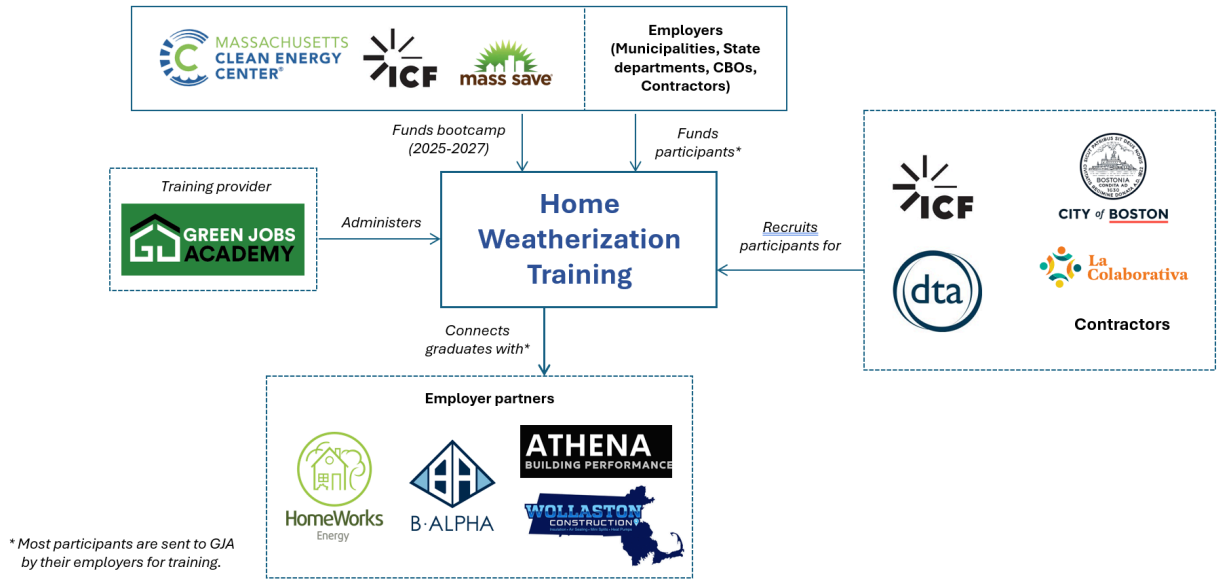
From 2025-2027, GJA will run the bootcamp on a monthly basis. They will offer both the 2-week and 1-day refresher training to 4 groups of about 11 students. The MassCEC Climate-Critical Workforce Training, Equipment, and Infrastructure Grants covers up to $770,000 for tuition, transportation, stipends ($500/week), food, and childcare, with an extra $51,000 for equipment. They also receive funding from MassSave workforce development funds ($60,000) and ICF, a third party vendor that has helped with outreach to underserved communities in Worcester, Springfield, New Bedford, Lawrence, and Roxbury. Aside from paying a portion of their salary,

[41] Students can also take any of these four classes individually.

ICF also sets up participants with contractors and continues training them after they've been hired by a contractor (in a 3-month paid internship). GJA will also provide comprehensive services, such as childcare, transportation, and a stipend.

Career Pathways

Partnership diagram



Contact:

Rich DeYoung, Program Manager, rdeyoung@smoc.org

13. NORTHEAST ENERGY EFFICIENCY PARTNERSHIPS (NEEP)

Boston, MA

Experiential Learning	Paid Training	Stackable Credentials	Employer Partnerships	Employability Skills	Comprehensive Services
No	No	✓	✓	NA	NA

About the program

NEEP and its partners developed the Building Performance Institute (BPI) residential Total Building Performance (TBP) Certificate to qualify people for completing deep energy retrofits on residential properties. The certificate is online, so it can be earned by individuals anywhere. It is a convenient way for workers in the energy-efficiency field to advance. Certificate holders are qualified to manage and coordinate all aspects of a retrofit project. Any home performance contractor can take the self-paced, online course and then take the exam. There is a $250 fee to take the exam. BPI is accredited by the American National Standards Institute (ANSI), an approved developer of American National Standards.

BPI also offers Building Science Principles certificate, which is a more elementary certificate for people entering the building energy efficiency trades. To earn the certificate, participants purchase a web-based ($109) or printed ($129) Reference Guide for studying and then take a 100-question exam which requires a 70% correct completion. The materials cover the building envelope, heating, A/C, insulation, mechanical ventilation, lighting, appliances and related aspects of residential systems and how they affect the comfort, health and safety of occupants of the property. It also covers next steps such as adding solar or geothermal energy sources.

B. Clean Energy

1. Apex Clean Energy Institute

Boston, MA

Experiential Learning	Paid Training	Stackable Credentials	Employer Partnerships	Employability Skills	Comprehensive Services
✓	No	✓	✓	✓	NA

10-15
Cohort size

80%
Graduation rate

75%
Job placement rate

About the program

The Apex Clean Energy Institute (Apex) provides training for residents of underrepresented communities for jobs in solar energy. The program was launched in 2022 through a partnership between Community Work Services (CWS), Apex Technical School, and Power52's Clean Energy Access Institute, all of which are affiliated with the Fedcap Group, a non-profit focused on improving the economies of underserved communities.[42] The training program was initially designed by Power52 Clean Energy Access Institute and Apex Technical School using Power52's ECademy, a NABCEP Accredited Training Company (NATC) (also see The Sustainability Hub for ECademy), which was bought by the FedCap Group.[43] The curriculum was then revised by CW Consulting Group, LLC and re-accredited in April 2023. Apex has the only clean energy training lab in the City of Boston.[44]

The program offers two specializations: solar PV installation and electric utility monitoring (not offered in Boston at this time). In Boston, once participants complete the first 6-week CORE classes, Apex starts another cohort. By 2024, the program had run 5 cohorts. While all aspects of a PV installation are considered electrical work and must be done by a properly permitted and licensed electrician in Massachusetts, the State otherwise does not have licensing requirements for clean energy sector workers that are not installing PVs, so nationally recognized stackable credentials are important for entry-level employment. Upon program completion, participants have industry-recognized certifications, including the North American Board of Certified Energy Practitioners (NABCEP) PV associate certification and OSHA-30.

[42] Walsh 2022

[43] Wallace 2024

[44] Caplitz 2024

The program targets participants from the Massachusetts Access to Recovery (ATR) program, reentering citizens from the Suffolk County House of Correction, and individuals who are transitioning off of public assistance (DTA). About a third of their cohorts are reentering citizens and 95% of participants come from Roxbury, Dorchester, Mattapan, Hyde Park, and East Boston. 75% of their first solar training cohort secured jobs averaging $54,000 per year. Three top graduates of the 2022-2023 class were hired by NextAmp, with one graduate being part of two within the application pool of 142 who were selected for the company's executive training program, a rotational program through 11 internal departments to create the next generation of executives. The NextAmp training was at various NextAmp facilities beginning at their Boston headquarters and finishing at their site design facility in Lawrence.

In Fall 2024, Apex will partner with the Massachusetts Department of Correction (MADOC) and the Suffolk County House of Correction (SCHOC) to pilot the classroom learning section of the program while the 5 participants are still in correctional facilities before continuing the hands-on training with CWS.

Separately, CWS also has a robust partnership with National Grid. CWS provides short-term, bootcamp-style training for prospective employees in entry-level roles. Due to the rigor of the solar PV training program and their successful rapport, National Grid has taken Apex graduates into their short-term training program and offered them employment opportunities after program completion.

Initially, Apex faced challenges in matching graduates with employers due to a lack of connections. Nexamp, a major community solar company in Boston, hired several graduates, but after opening a second headquarters in Chicago, their staffing focus shifted. Gregg Caplitz from CWS stated that Apex has been looking to work with smaller solar businesses in the city. Overall, the program has evolved to training skills for the clean energy industry, rather than just focusing on solar, reflected in the new connection with Northeast Clean Energy Council (NCEC) which will help to identify employment opportunities as well as partnership opportunities with local unions.

Apex program costs between $12,000-15,000 per student, covering certification and wraparound service costs. The program receives funding from the MA Executive Office of Economic Development (previously Massachusetts Executive Office of Housing and Economic Development), Commonwealth Corporation, and National Grid Foundation. Part of a $200,000 grant to CWS from the Re-Entry Workforce Development Demonstration Grants program, sponsored by the Massachusetts Governor Maura Healey and Lieutenant Governor Kim Driscoll, is used to fund the program.[45] Other financial partners include Santander Bank Foundation.

Program structure

At the start of 2024, the 450-hour program was restructured into two sections:

[45] Walsh 2023

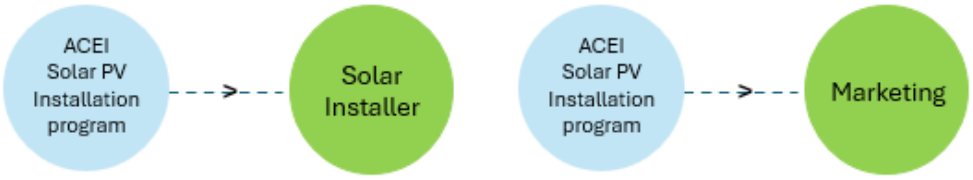
1. CORE (6 weeks). Participants learn fundamental skills such as construction math, power tools, hand tools, blueprint reading, etc. Trainers have worked in the construction and building trades and are certified as NCCER instructors. CWS also brings in current subject matter experts and employees from companies and industries where they aim to place successful candidates.
2. Specialization (4 weeks). Participants focus on electrical fundamentals (1 week) and solar PV system design. Participants take the NABCEP PV Associate Exam.

The no-cost program provides participants with theoretical knowledge and practical skills in renewable energy along with basic digital skills and financial literacy. Participants are paid based on the different grant requirements. A significant component of the program is the hands-on lab training for each program, including safety, fall protection, construction, operating power tools, pipe bending, and racking assembly. They also found that having instructors who teach both the material and how to take the certification exams significantly improved participants' ability to pass.

Each participant has a case manager who meets with them several times a month. CWS provides 12 months of wraparound services to graduates, such as job placement assistance, job readiness training (JRT), resume and electronic application assistance, mock interviews with HR professionals, and coaching to redevelop certain habits and body language, such as eye contact and mirroring. A big part of its effectiveness is that instructors teaching core classes have the same life experiences as the participants. Students are also welcome to return to CWS to sharpen their skills for both job and employability skills training, even those who wish to pursue a different career.[46]

Graduates are awarded six college credits for classroom learning, which can be used towards certificate or degree programs at other colleges and universities. Previously, these credits were awarded through FedCap Group's partner Paul Smith's College, but they are now planned to be awarded by a community college in Boston.[47]

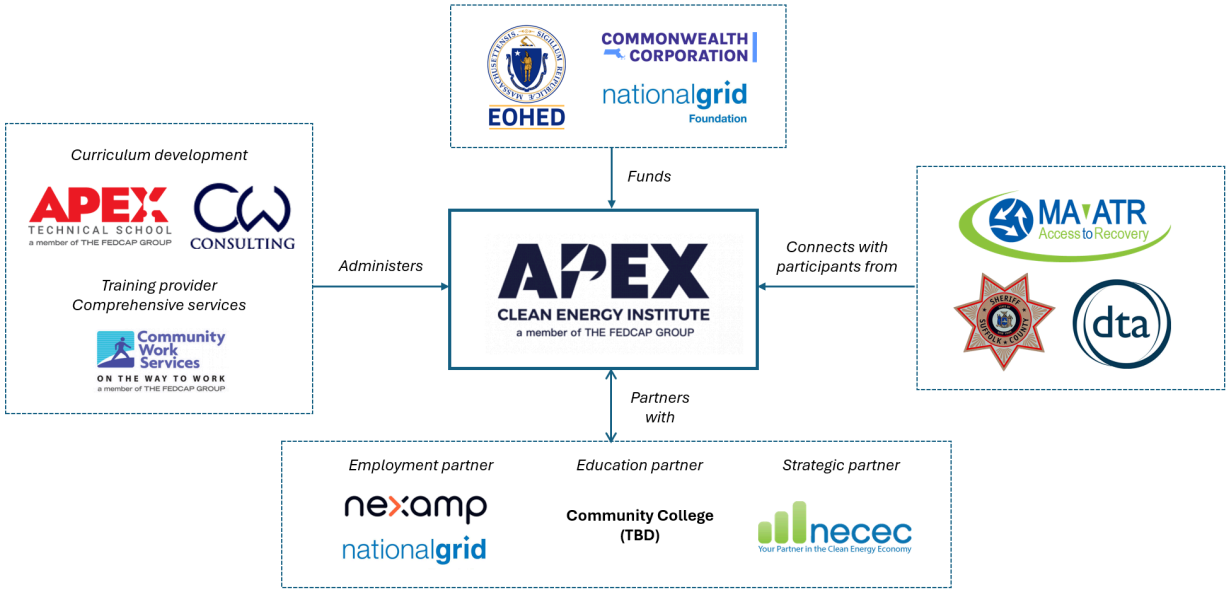
Career pathways:



[46] Caplitz 2024

[47] Walsh 2022

Program Partners



Contacts

Rosane Batista (rbatista@CWSne.org)

Gregg Caplitz, Business Engagement Manager, gcaplitz@cwsne.org

2. SOLAR HELPING IGNITE NEIGHBORHOOD ECONOMIES (SHINE)

Boston, MA

Experiential Learning	Paid Training	Stackable Credentials	Employer Partnerships	Employability Skills	Comprehensive Services
✓	✓	✓	✓	No	✓

20	NA	NA
Cohort size	Graduation rate	Job placement rate

About the Program

Solar Helping Ignite Neighborhood Economies (SHINE), is a coalition led by an international conservation organization RARE, a non-profit community action organization Action for Boston Community Development (ABCD), and other community organizations. The initiative is funded by the Equity Workforce Training, Equipment, and Infrastructure and EmPower Grants from the MassCEC and the U.S. Department of Energy's Community Power Accelerator Prize. SHINE seeks to bring the benefits of solar to environmental justice communities in order to reduce poverty and greenhouse gas emissions. SHINE accomplishes both goals by increasing ownership of community solar assets by local community serving organizations, expanding savings opportunities for low-income households through community solar, and by recruiting, training, and placing residents of these communities in jobs in the solar industry.

The program runs two cohorts of twenty trainees per year with plans to scale to three cohorts. Staff are recruiting in Boston's disadvantaged communities using online advertising as well as referrals from community partners. Potential participants are interviewed and may be required to take the TABE test or an equivalent adult math and English assessment.

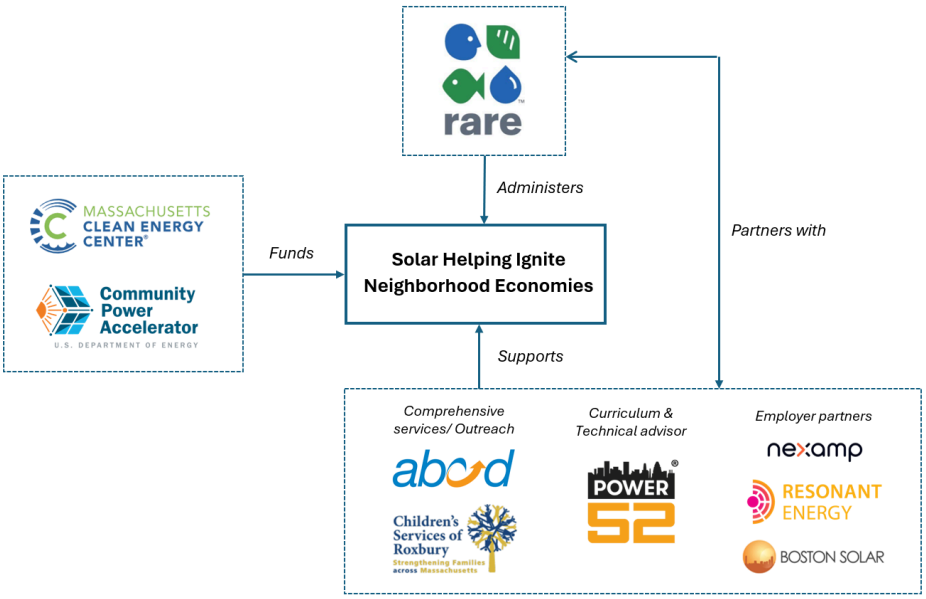
The program will leverage RARE's relationship with solar developers such as Resonant Energy and Nexamp, as well as other employer partners. All solar partners have agreed to interview program graduates for openings in solar installation roles that work in concert with electricians. Additionally, RARE and Resonant Energy are developing a menu of options for engineering, procurement and construction firms that will offer inducements or work guarantees in exchange for a commitment to hire certain quantities of SHINE graduates.

Program structure

The training program launched in June 2024. ABCD is employing the widely recognized Power 52 curriculum, which provides 450 hours of NCCER certified curriculum, including 100 hours of hands-on lab experience. The course covers the basic concepts of solar photovoltaic (PV)

systems and their components and how to size, design, install, and decommission them. Participants are given a $1,500 stipend. Graduates will earn the NCCER construction credentials, OSHA-30 safety certification and will be able to sit for the North American Board of Certified Energy Practitioners (NABCEP) PV Entry Level Exam, which is paid for by SHINE. Rob Wallace, who has expanded the program from Baltimore to Chicago and Boston, is the technical advisor to the ABCD program (see The Sustainability Hub). Participants will have access to a case manager for one year after graduation.

Program Partners



Contacts

SHINE Team, shine@rare.org

C. Transportation Electrification

1. MASSHIRE AUTOMOTIVE TECHNOLOGY, CARPENTRY, HVAC TECHNICIAN

Boston, MA

Experiential Learning	Paid Training	Stackable Credentials	Employer Partnerships	Employability Skills	Comprehensive Services
✓	✓	✓	✓	✓	NA

Automotive Technology

15-20	No%	X%
Cohort size	Graduation rate	Job placement rate

Carpentry

12-13	X%	X%
Cohort size	Graduation rate	Job placement rate

HVAC

15-17	90%	81%
Cohort size	Graduation rate	Job placement rate

About the program

MassHire offers three no-cost workforce training programs for unemployed, and underemployed individuals. Their Automotive Technology and Carpentry programs have graduated 6 cohorts each since they started in Fall 2021. The HVAC program started more recently in 2023, with the fourth cohort starting in January 2025. The programs are funded by the Workforce Competitiveness Trust Fund from Commonwealth Corporation. The Automotive Technology and Carpentry programs are also part of the ARPA-funded Career Technical

Initiative (CTI) that leverages the state's existing vocational training resources to improve opportunities for upskilling adult learners.[48]

Jewish Vocational Services (JVS), MassHire's parent organization, does an eligibility screening for each application, including an applicant's GED/HiSET, an interest in a career in the field, time commitment, reading and math, a driver's license for the automotive program, and their transportation options to get to trainings. The programs have seen more female participants over the years, although it has been challenging to do outreach to specific groups as the applications are on a first come, first serve basis.

MassHire is currently developing two additional programs in EV and an HVAC program with a heat pump concentration. The HVAC program with a heat pump concentration will begin its pilot at the end of March 2025. Participants will start with job readiness training (JRT) with JVS, which includes communication, teamwork, and growth mindset. Training will be held at Franklin Cummings Institute of Technology (BFIT)

Program structure

1. **Automotive Technology** (4 months, 15 hours/week of evening classes)

   The Automotive Technology program has cohorts of 15-20 participants taught by one instructor from Madison Park Vocational Technical High School. Participants receive hands-on training by repairing cars they own, or those owned by faculty and other community members. Their curriculum is aligned with the National Automotive Education Foundation (NATEF) standards. Training is held at Madison Park. Graduates typically earn $16-20 as an automotive technician. McGovern Automotive Group has employed several graduates.

2. **Carpentry** (4 months, 15 hours/week of evening classes)

   The Carpentry program has cohorts of 12-13 participants taught by two instructors at Madison Park. During training, participants work on three projects to develop fundamental carpentry skills, such as a step stool, a jewelry box, and a shed. Their curriculum is aligned with the Carpentry Vocational Technical Education (CVTE) framework and participants gain on-the-job experience with union carpenters in Millbury, MA on Saturdays. Some graduates have continued to join union apprenticeships after this program. One has continued to work at an entertainment production company building scenery. Graduates typically earn $16-22/hr as woodworkers, carpenters, and floor installers.

3. **HVAC** (6 months, evening classes)

   The HVAC program has cohorts of 15-17 participants. Participants receive hands-on training in repairing ducts and air-conditioning units at BFIT. They earn 18 college credits and 600 credit hours towards a Massachusetts Refrigeration and Technician license, which can be followed by 2,000 hours of apprenticeship. Graduates typically earn $30/hr as an HVAC

[48] Commonwealth Corporation. 2024. Career Technical Initiative 2024 ARPA Funding Report.

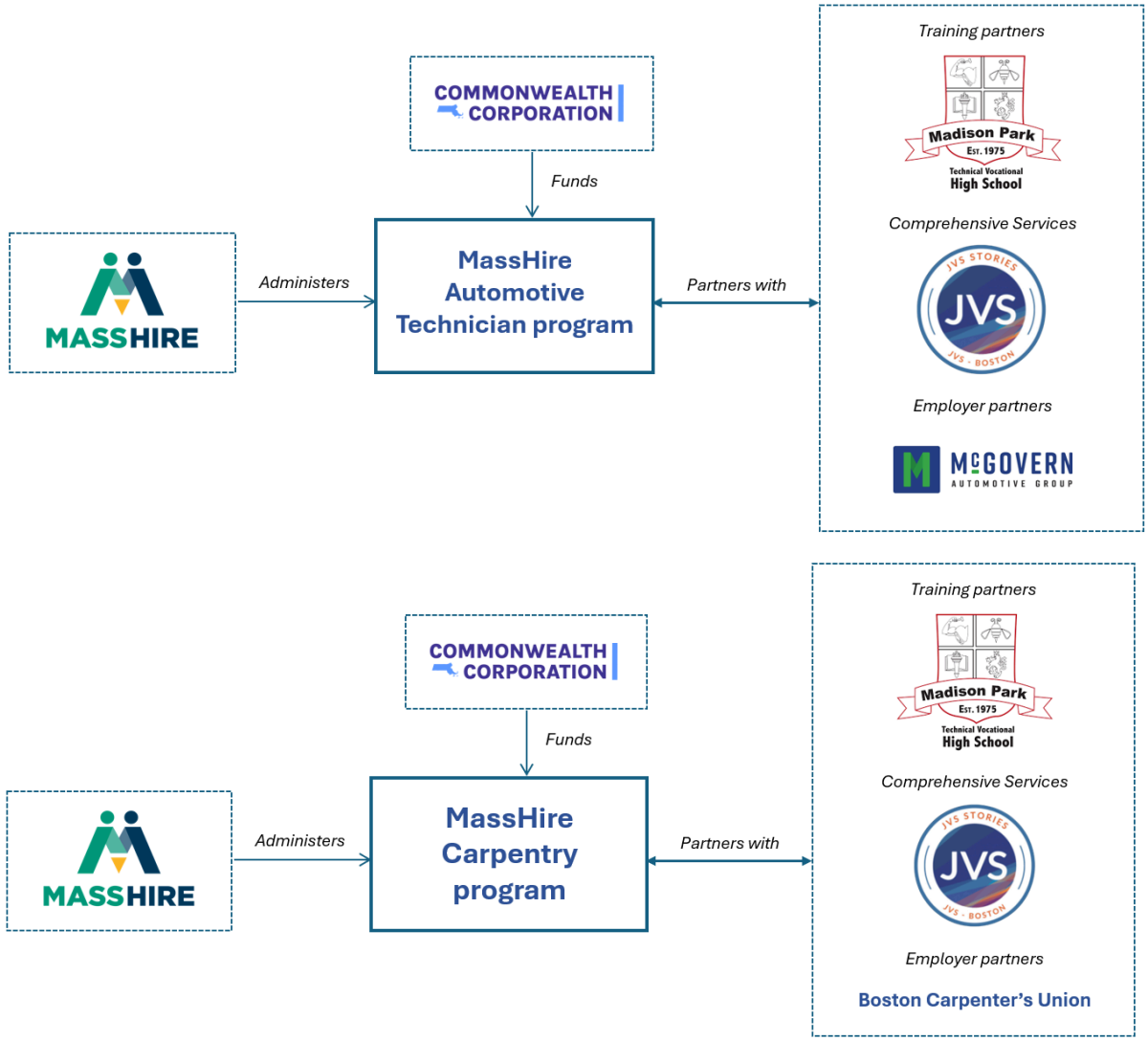
technician. Two graduates have been employed by Delta Airlines at the Boston Logan airport and one graduate by Sheraton Hotels & Resorts. The program is continuing to cultivate partnerships with the airport, other hotel chains, and supermarkets. Only certain types of HVAC jobs require licenses,[49] but having a license could support entry into a high-demand industry, lead to higher salaries, more job opportunities in the commercial and industrial sectors, or to open an HVAC business.[50]

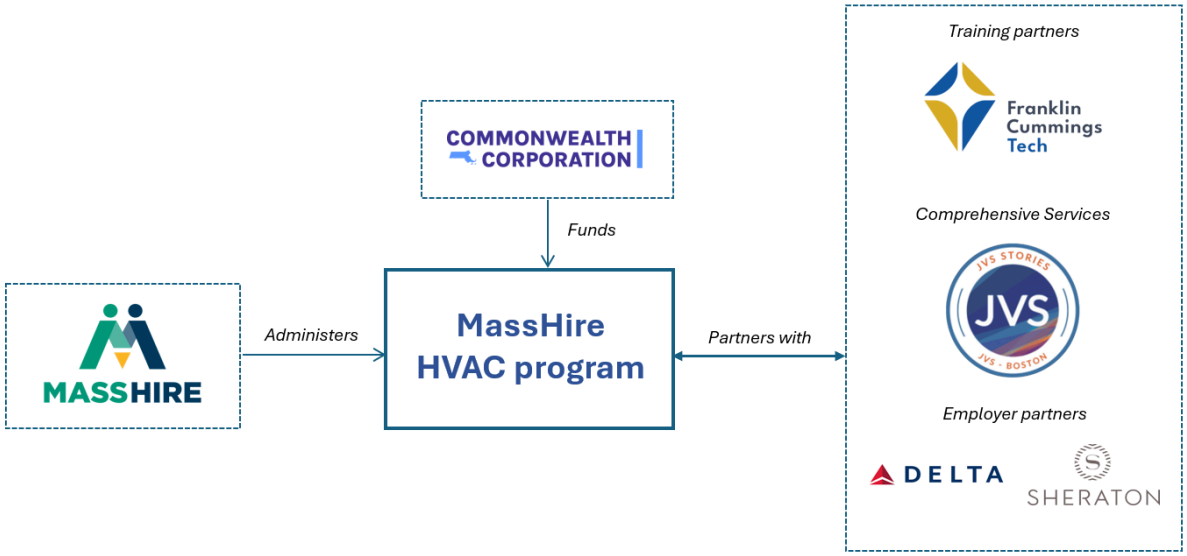
Participants can get referrals to third party organizations for housing, transportation, and food assistance. As the program works with a large migrant population, those who do not test well in reading or math are also referred to ESL or math courses through Boston Public School (BPS). To help participants find employment, JVS provides JRT, such as interview practice and resume reviews. JVS follows participants for at least 90 days after graduation, but it also often depends on the participant's willingness to remain connected with the program.

[49] This includes Refrigeration Technician License, EPA Section 608 Certification, Oil Burner Technician Certificate, and Sheet Metal Workers License. For more information.

[50] HVAC License Massachusetts: How to Become an HVAC Contractor in Massachusetts. n.d. Service Titan. https://www.servicetitan.com/licensing/hvac/massachusetts

Program partners





Contact:

Elyse Forbush, Senior Director of Business Development
Tracy Clarke, Career Navigator
Jessica Russell, Career Navigator – Upskilling Specialist

D. Coastal Resilience & Nature-Based Solutions

1. NATIONAL GREEN INFRASTRUCTURE CERTIFICATION PROGRAM (NGICP)

Boston, MA

Experiential Learning	Paid Training	Stackable Credentials	Employer Partnerships	Employability Skills	Comprehensive Services
✓	✓	✓	✓	✓	No

10-18	85%	30%
Cohort size	Graduation rate	Job placement rate

About the program

In 2020, Codman Square Neighborhood Development Corporation (CSNDC) began offering the nationally recognized Envirocert National Green Infrastructure Certification Program (NGICP) certification through their Green Infrastructure (GI) Certification Program to create new career pathways for reentering citizens and others with employment barriers. A $50,000 grant from the Kresge Foundation allowed two staffers to complete the "train the trainer" certification with Envirocert and recruit its first round of trainees.

A report by Jobs for the Future, funded by the Kresge Foundation, found that while career advancements or lateral movements are clear for broader GI jobs (i.e., arboriculture), it is less so for direct installation, maintenance, and inspection (IMI) of the green infrastructure (GI). In addition to their technical and employability skills, most advancement relies on an individual's leadership and business skills as they often lead to supervision, management, or business ownership. While the GI training providers and employers are working to articulate relevant skills and competencies for each occupation, nationally-recognized certifications like NGICP serve as stackable credentials that can support long-term career progression from entry-level positions.[51]

This is CSNDC's first foray into workforce training. It was created in 1981 to address the widespread urban decay in the Codman Square area. CSNDC has been instrumental in the commercial district's revival by delivering secure, sustainable, and affordable housing and

[51] Jobs for the Future. 2017. Exploring the Green Infrastructure Workforce.

commercial developments to improve the financial and economic well-being of the community. CSNDC, with funding from the Barr Foundation, established an “eco-innovation” district that integrates green stormwater management, weatherization of housing, solar development and urban farming. Envirocert certification was added to support initiatives in the eco-innovation district.

The program can be taught in several ways. CSNDC offers it over the course of a month through a hybrid model with 6 two-hour online class sessions offered two nights per week and 2 eight-hour in-person sessions on Saturdays.

CSNDC relies on grant funding to pay staff and provide stipends for participants. Other support comes from fees from contracted training services ranging between $7,000-$10,000 per cohort. The goal is to offer four cohorts per year with about 15 participants in each.

During its first two years of operation the program trained 36 residents in 4 cohorts, but only about 20% of graduates gained or retained jobs in the field. In 2023, with support from the Liberty Mutual Foundation, CSNDC assessed the program to identify the gaps and barriers, develop partnerships, identify funding sources, and certify new staff as trainers in order to develop a more robust program. New strategies introduced included partnering with other workforce development programs to incorporate the certification into other longer programs (such as PowerCorpsBOS, see page 4), providing stipends to residents, and partnering with career support agencies. During this time CSNDC also developed a strong relationship with the City of Boston’s Office of Green Infrastructure.

Since then, CSNDC has been hired by the City of Boston to deliver Envirocert to two cohorts of people they have recruited. The first cohort of 9 were people employed who were upgrading their skills, including more CSNDC staff, City of Boston staff working in the Office of Green Infrastructure and PowerCorpsBOS, and employees of Parterre Landscaping Company. The second cohort is currently underway and includes 19 people including staff from TNT Gutter Pros, residents recruited by CSNDC, City of Boston staff, and others. The City also contracted with CSNDC to deliver the training to a cohort of 26 PowerCorps members.

CSNDC recently was included as a trainer in the City of Boston's nearly $10M proposal to the 2023 Inflation Reduction Act Climate Ready Workforce for Coastal and Great Lakes States, Tribes and Territories Initiative. CSNDC will be a part of the City’s efforts to train 645 workers and place 484 workers over four years in jobs helping to build Boston’s coastal and climate resilience.[52]

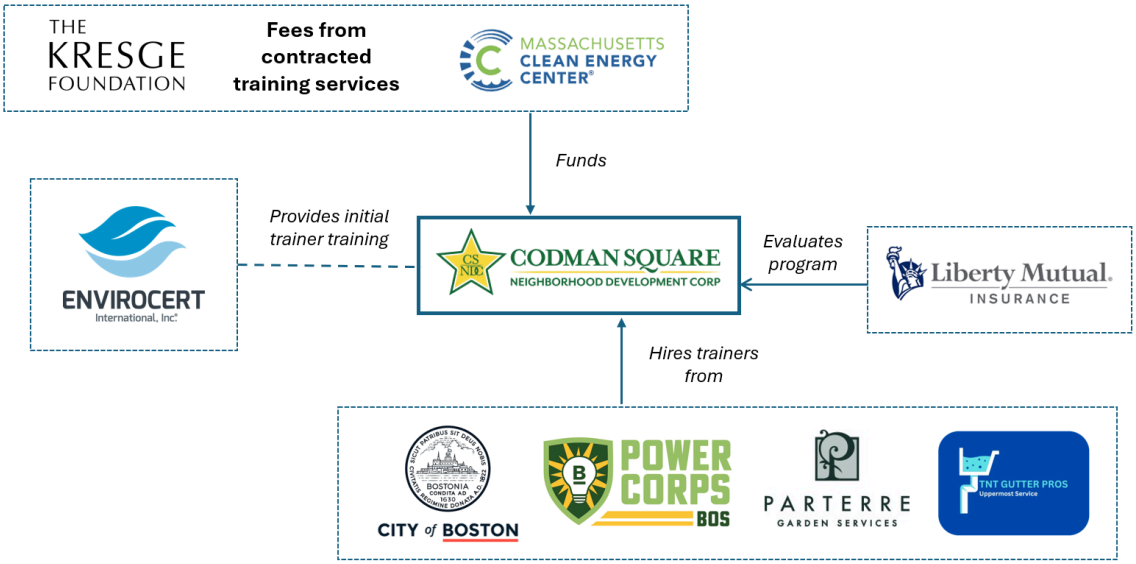
Additionally, CSNDC implemented one of its own cohorts, with seven people completing it. Two graduates from this cohort have already secured GI jobs and the others are scheduling their tests and applying for jobs. Past graduates have secured employment within various landscape and construction companies such as Recover Green Roofs. Additionally, several graduates of the

[52] Readjusted the project to the actual amount awarded.

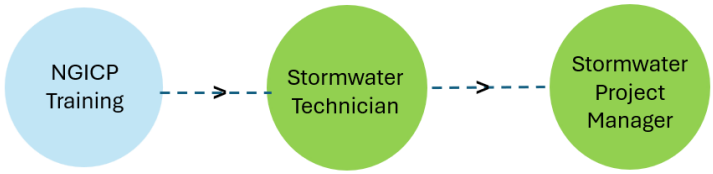
program have formed a Green Infrastructure Co-op and were recently awarded a contract with the City of Boston to maintain all the Green Infrastructure sites for the Parks Department.

Separately, CSNDC also received a MassCEC Equity Workforce and Capacity Grant to work with employer partners and explore career pathways in the high-performance building retrofit sector for reentering citizens, with a particular focus on accommodating those with criminal records (CORI).[53]

Program partners



Career ladders



Contact

Liya Mindaye, Case Worker, liya@csndc.com

[53] Equity Workforce and Capacity Grant, n.d.

2. X-Cel Conservation Corps

Boston, MA

Experiential Learning	Paid Training	Stackable Credentials	Employer Partnerships	Employability Skills	Comprehensive Services
✓	✓	✓	✓	✓	NA

8-10	~100%*	81%
Cohort size	Graduation rate	Job placement rate

*The vetting process happens from the start of the program (the first phone call, the online application, the in-person interview, and showing up for the first week of class). About 50% self-select out or are removed by X-Cel. 100% of those who complete the program, obtain their MA Grade 3 Municipal Wastewater Operator license. Those who obtain that license are considered graduates.

About the program

X-Cel Education is a non-profit organization founded by two adult educators to help adult residents of underserved communities in Greater Boston earn their high school diplomas. In September 2018, X-Cel Education created the X-Cel Conservation Corps (XCC), a 10-week, no-cost training program for careers in water and wastewater management and conservation for unemployed and underemployed young adults ages 18-40, to address a workforce shortage in this high-demand industry.[54]

Initially, program participants were struggling to secure wastewater operator licenses and job placements due to the online format of the class. Subsequently, XCC co-founder and Executive Director Don Sands and other staff members first earned the certifications necessary for teaching the program. They then developed their own curriculum and admitted the first in-person cohort in winter 2020. Using the current training model, the program has 48 graduates, 39 of whom have been placed in wastewater management jobs in 14 companies across Massachusetts, with 95% located outside Boston. All graduates placed in full-time wastewater operator jobs in 2023 started at $24-27/hr with benefits.

Program funding

Delivering the program to 8-10 students a year costs about $210,000. Most program funding is from Boston's Office of Workforce Development (OWD) Neighborhoods Jobs Trust Grant (around $100,000), the Liberty Mutual Foundation (almost $100,000), and the State Street Foundation (general operating funds).

[54] https://corpsnetwork.org/organizations/x-cel-education/

Program structure:

The 10-week program has two components: (1) paid conservation work and (2) prep classes for the Massachusetts Grade 3 municipal wastewater operator license, which is required for wastewater operators.[55]

***Pre-program*:**

- Driving classes: One of the main challenges for graduates in securing employment has been obtaining driver's licenses. XCC has provided driving lessons or paid for participants to attend driving school. Since Spring 2024, this component has been moved to the period between recruitment and the program's start, so participants are close to getting a license by the time their cohort begins. For participants without vehicles, XCC offers the option to delay half of their stipend. By the end of the program, they receive $1,500 in a lump sum that XCC matches to purchase a car.[56] This funding comes from Woodard & Curran Foundation's Giving While Living Regional Grant ($10,000 in 2023).[57]

Phase 1: 10 weeks, offered 3 times/year (Spring - March, Summer - June, Fall - September)

- Paid conservation work (Thursdays, 8 hours): Participants are assigned to a crew to work on water conservation projects with local environmental organizations to learn skills used in wastewater management and develop employability skills. They gain on-the-job experience on specific skills needed for drinking water and wastewater treatment and develop workforce-readiness skills.[58] The skills are: benthic macroinvertebrate collection and identification, habitat assessment, trail and brook clearing, construction of stormwater filtration socks, and building and installation of rain barrels, green infrastructure, invasive species identification and removal, and water quality testing, including e Coli and pH testing.[59],

  Each cohort also tours a traditional, full-size wastewater plant to meet other operators and experience the plant. They rotate between the East Wastewater Treatment Facility (City of Fitchburg), the Westborough Wastewater Treatment Plant (Veolia), and the Rockland Wastewater Treatment Plant (Veolia).[60]

- **Classroom learning (Fridays**, **9am-1pm)**: Participants take classes at the Willie Pearl Clark Community Center in Roxbury. The classroom focus is preparing for the MA Grade 3 Municipal Wastewater Operator's License exam. Participants also receive weekly instruction videos on Google Classroom with the class recording, 4 sets of practice questions to review their skills, and weekly tests on the class materials. Participants are required to score a

[55] https://corpsnetwork.org/organizations/x-cel-education/

[56] Sands 2024

[57] https://www.woodardcurranfoundation.org/xcel

[58] https://www.x-celeducation.org/cons-corps-components

[59] https://www.x-celeducation.org/history

[60] Sands 2024

minimum of 80% on tests, rather than just passing, to ensure that they have mastery over the content. Tutoring is available after class.[61]

In the first 4 weeks, participants can take make-up tests (same material, different version) and receive tutoring support to adjust their study habits. If participants don't attend the extra support sessions or take the make-up tests, they typically drop out or are removed from the paid track.[62]

Participants who pass the final practice exam are signed up for the MA Grade Three Municipal Wastewater Operator's License exam.

Participants receive a weekly stipend (max. $300/week); the first half is paid out after completing the conservation work and the other half is paid after passing the weekly test with at least an 80%. Meeting twice a week allows flexibility for participants who are working.

Phase 2:

- XCC helps participants find jobs in wastewater management or conservation with private companies or municipalities at municipal wastewater treatment plants or industrial pretreatment wastewater facilities.[63]

XCC partners with North and South Rivers Watershed Association to introduce corps members to kayaking. For most participants, this new activity pushes them outside their comfort zone and allows them to explore local waterways maintained by effective wastewater treatment. (Photo credit: XCC)

Highlights

The wastewater operator license (at least Grade 3) and work experience from their paid internships provide them with the necessary qualifications for full-time employees in the

[61] Sands 2024

[62] Sands 2024

[63] https://www.x-celeducation.org/cons-corps-components ; https://www.x-celeducation.org/history

wastewater management field (no college degree required) with family-supporting wages and career advancement opportunities.[64]

Although municipal wastewater plants do not hire participants with court involvement, industrial wastewater plants and factories do.[65] X-Cel Education hires its graduates across all their programs as staff members, with over 80% of staff being graduates. XCC graduates with Grades 5 and 6 licenses who performed well in class and are interested in teaching are hired as in-house instructors. Graduates who are fully employed are also welcome to teach additional classes. Sands emphasized the importance of having instructors and staff who are people of color and share the same life experiences as participants. Additionally, the program provides case management support with referrals to other organizations services, including SNAP benefits, housing, court-involved support services, and mental health counseling.

XCC stays connected with most graduates through direct outreach and biannual alumni barbecues, which provide networking opportunities and help in finding better-paying positions. XCC also supports graduates who want to change jobs within the wastewater industry with resume and job search assistance.

XCC is continually improving the program. Since Summer 2022, responding to participants' interest in obtaining Grade 5 licenses before employment, XCC offers optional Grade 5 certification prep classes once a week for 3-4 weeks (unpaid) after program completion. Grade 5 licenses are required for those working in industrial plants, making this especially beneficial for those with CORIs or court involvement. Nearly all graduates have passed the Grade 5 exam.

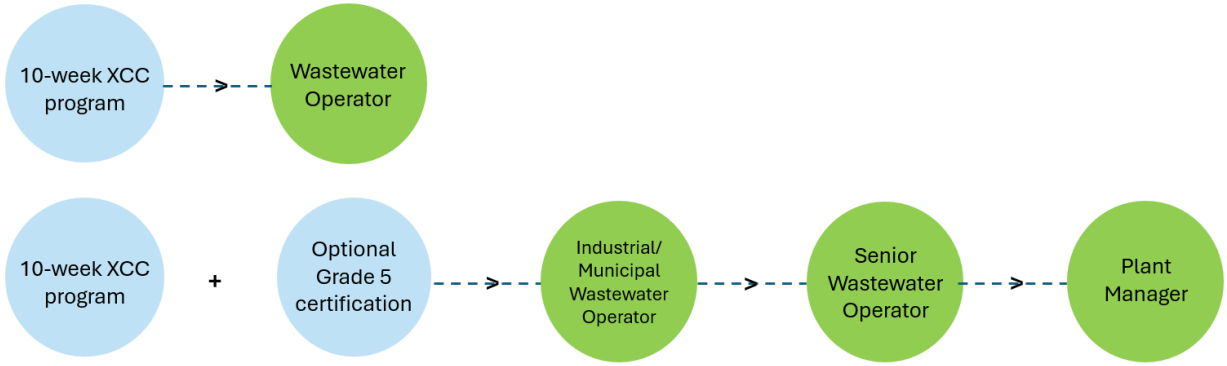
XCC also focuses on helping participants obtain higher wastewater and drinking water licenses to secure pay raises and advance their careers. They are forming an advisory board with industry partners to further solidify these efforts. XCC is also working with the Massachusetts Executive Office of Labor and Workforce Development to develop a one-year pilot program in Fall River called XCC Massachusetts. The pilot will bring the program to different gateway cities in Massachusetts, beginning in Fall River.[66]

[64] https://www.x-celeducation.org/cons-corps-components

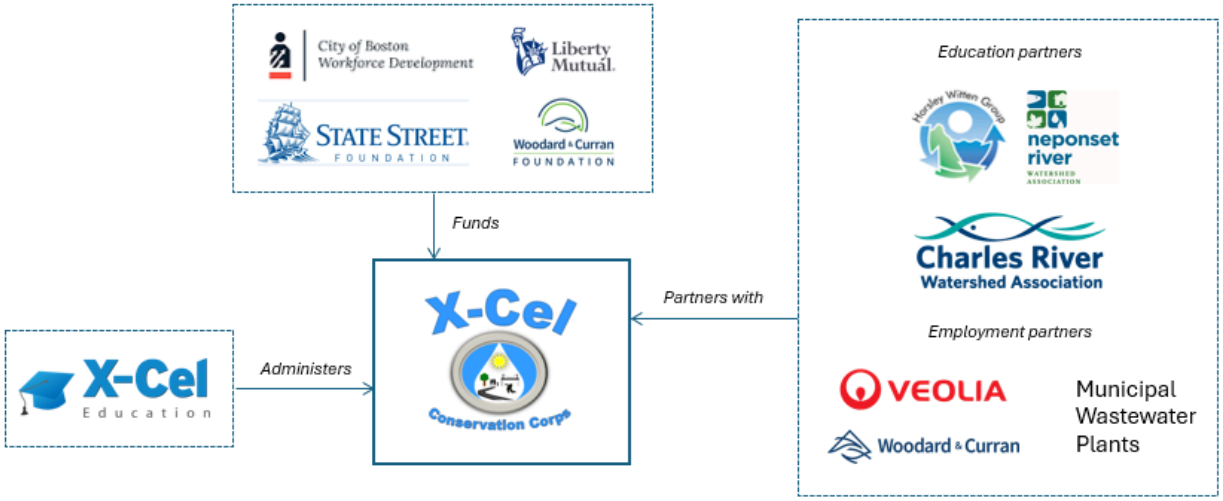
[65] Every plant in Massachusetts that produces wastewater needs wastewater operators in every shift.

[66] Sands 2024

Career ladders:



Partnership diagram:



Contacts

Don Sands, Co-founder and Executive Director, dsands@x-celeducation.org

Notes: salary increases can be from additional certifications, experience, or switching jobs.

2. Schools, Community Colleges, and Universities

This section features high schools, vocational technical schools, community colleges, and universities with green workforce training and career awareness programs.

1. ROXBURY COMMUNITY COLLEGE BUILDING MANAGEMENT SYSTEM TECHNOLOGY

Experiential Learning	Paid Training	Stackable Credentials	Employer Partnerships	Employability Skills	Comprehensive Services
✓	No	✓	✓	No	NA

1,214 (2019) / 1,583 (2023)
Total enrollment*

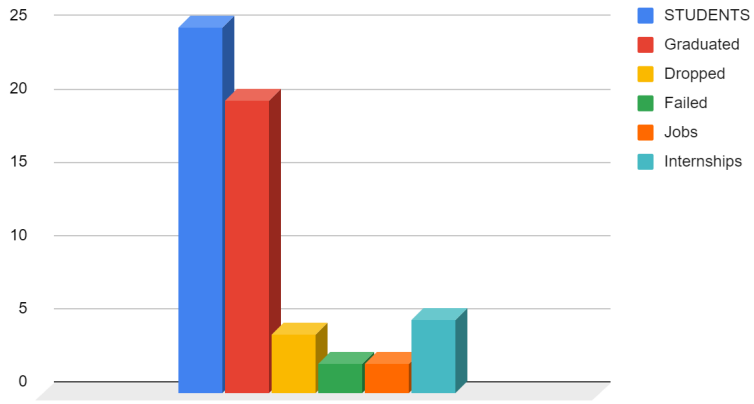
14% (2019) / 32%
Graduation rate**

NA%
Job placement rate***

*Taken from NCES [2022] for the entire institution, not specific programs

**Taken from NCES [2019] for the entire institution, not specific programs and the U.S. Department of Education's College Score Card
***Not available for most community colleges

Building Fundamentals Outcomes FY24



About the program

Roxbury Community College (RCC), located in Boston's Roxbury neighborhood, serves a diverse student body, with 45% of students coming from Roxbury, Dorchester, Hyde Park, and Mattapan. About 80% of students identify as Black, Hispanic, or two or more races; more than 50% reside in Boston; and 83% receive Pell Grants. In 2022, RCC received a $1.25M grant and a Predominantly Black Institution (PBI) designation from the federal Department of Education, making it the only PBI in the state.

In addition to the A.S. in Engineering program with a concentration in Smart Building Technology (SBT), RCC also offers shorter programs in smart building technology and energy efficiency through their Center for Smart Building Technology (C4SBT). In 2020, RCC launched the C4SBT to address the shortage of skilled workers needed to maintain smart buildings at peak efficiency. Initially, the C4SBT aimed to enhance the skills of existing workers. However, this goal did not align with the broader vision of fostering diversity in the green workforce or with the center's mission: “to prepare the highly skilled workforce needed to implement sustainable, high-performance, and energy-efficient smart building practices required to achieve Boston's 2050 carbon-neutral goal with a sense of urgency and environmental equity.”

Recent organizational changes have seen the oversight of C4SBT transition to the Dean of Workforce and Business Development. This shift has resulted in a significant increase in grant funding, facilitating the expansion of open enrollment classes and enhanced engagement with high school students. Notably, grant revenue surged from $50,000 to $2.5 million, indicative of the center's growing impact within the community.

In 2022, C4SBT opened a $700,000 lab funded by the U.S. Department of Energy’s Better Buildings Workforce Accelerator. The 450-hour Building Automation Systems (BAS) Certificate program at RCC was developed by the Association of Control Professionals (ACP) with support from the Siemens Foundation and the National Science Foundation (NSF).

RCC was awarded two major grants to enhance its programs in the green job sector. A $1,150,503 grant from the Healey-Driscoll Administration's Green Jobs Expansion Grant supported a pilot High School Expansion Program. This initiative laid the groundwork for offering Building Automation Systems courses at three additional Boston Public Schools starting in fall 2024. Through this program, high school seniors will receive hands-on BAS training with basic building controls, desktop kits, and career exploration opportunities, paving the way for RCC's new 450-hour program and paid internships. Graduates can secure employment as Building Automation Technicians, with starting salaries ranging from $60,000 to $80,000 per year.

RCC also received a $1,300,000 Green Jobs Work Readiness Grant (2024) to develop new curricula and to train 150 students to earn industry certifications. These credentials include Building Analyst-Technician, Building Analyst-Professional, Infiltration & Duct Leakage Technician, Multifamily Building Analyst, and Crew Leader. The college will implement a hybrid instructional model, combining on-campus sessions with online courses in collaboration with EverBlue.

Program structure:

C4SBT's fully-equipped lab houses a wide array of building automation devices, air handling units, transparent ductwork, and heat pumps. Recognized as a center of excellence by the ACP and the NSF Building Efficiency for a Sustainable Tomorrow (BEST) Center, the program offers students immersive, hands-on training aligned with national training standards.

The Center offers multiple pathway programs in Smart Building Technology, preparing students for diverse careers.

- In the fall of 2023, C4SBT introduced its inaugural open enrollment class for the 100-hour **Building Fundamentals** program, covering topics such as energy efficiency and building performance optimization. Fall programs will offer the Building Fundamentals Program in two distinct tracks: residential and commercial, offering pathways into Energy Auditing Building Analyst or BAS. Students can earn various credentials, including Building Performance Institute (BPI) Building Science Principles certification, OSHA-10 certification, Building Operator Certification® (BOC), US Green Building Council – Green Professional (GPRO).[67]

  Initially, the program enrolled 25 students, and 20 students successfully completed the program. Additionally, an additional 43 individuals were trained through grant-funded programs. RCC anticipates 150 students for training during FY '25.

- In Fall 2024, RCC launched the 450-hour (11 months) **Introduction to Building Automation Systems** (BAS) certificate program with a modular format to help reentering citizens gain essential certifications in building science, such as the ACP. This curriculum provides an in-depth exploration of building automation systems, encompassing both hardware and

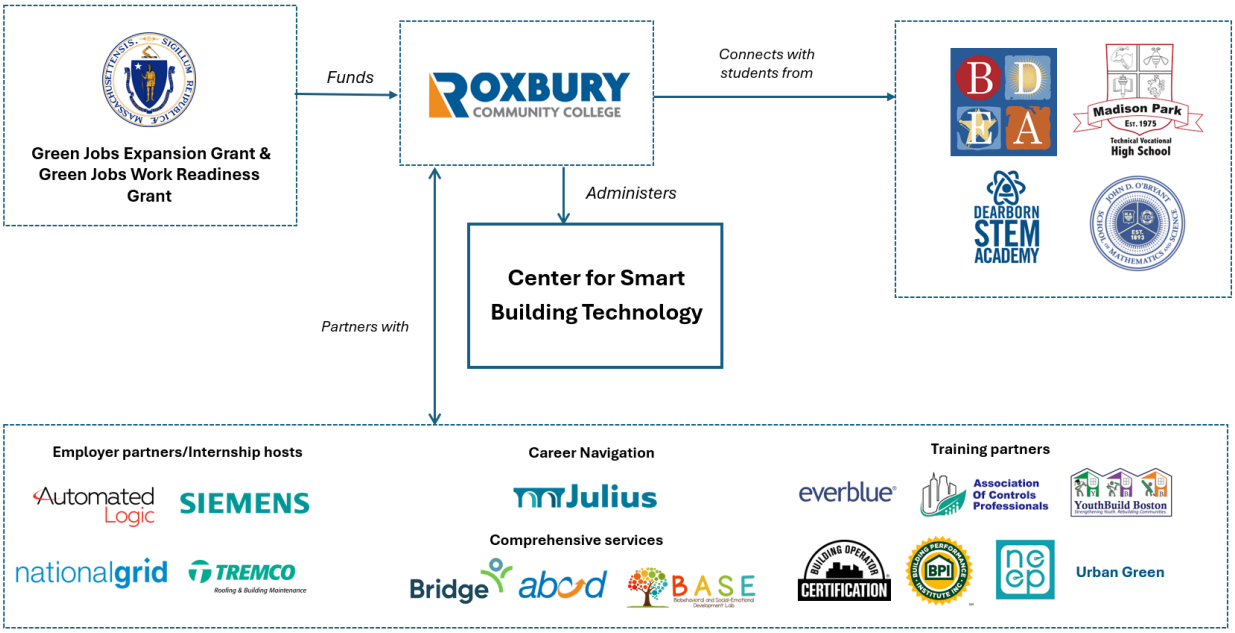
[67] The GPRO certification is also available through its own program.

software components crucial for maximizing energy efficiency in contemporary building automation.[68]

Designed to provide students with vital hands-on skills, the BAS program also features evening classes and financial assistance to make it accessible and flexible. Graduates are prepared for BAS Technician roles with a growing employer network, with opportunities for paid internships that may transition into full-time employment. Additionally, this program sets the groundwork for a forthcoming terminal BAS associate degree. Students can earn the BAS Fundamentals and Associate Commissioning Professional (ACP) certificates.

- The **Energy Auditing Building Analyst** program (4 weeks) prepares students to become certified home energy auditors through hands-on learning and online BPI training. Students can earn the BPI Building Science Principles (BSP), Building Analyst Technician (BA-T), and the Building Analyst Professional (BA-P) certifications in this program.

Program Partners



Contacts

Kat James, Assistant Director Center For Smart Building Technology, kjames1@rcc.mass.edu

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https://www.rcc.mass.edu/explore/news-updates/advancing-energy-justice-through-SMART-building-technology.html

2. BUNKER HILL COMMUNITY COLLEGE

Boston, MA

8,545	19%	NA%
Total enrollment*	Graduation rate**	Job placement rate***

*Taken from NCES [2022] for the entire institution, not specific programs

**Taken from NCES [2019] for the entire institution, not specific programs
***Not available for most community colleges

About the community college

Bunker Hill Community College (BHCC), the largest community college in Massachusetts, serves over 16,000 students annually across two main campuses in Charlestown and Chelsea, plus several instructional centers in Greater Boston. BHCC offers flexible learning with day, evening, and online courses. It offers more than 100 academic programs, including associate degrees, certificates, and transfer pathways to four-year universities. Students that use the A2B Link have a guaranteed transfer of 60 credits.

BHCC offers non-credit courses, corporate and entrepreneurship training through the Division of Workforce and Economic Development. BHCC is also part of Boston's Tuition-Free Community College and works with Ed2Go to provide affordable, non-credit, self-paced courses online.

Program structure:

The following BHCC programs prepare students for the green workforce:

Environmental Science **(A.S. *in Environmental Science*)**

- A two-year program prepares students in the geosciences. After completing the program, students can transfer to a four-year university for a B.S. in Environmental Science or a B.A. in Environmental Studies.

Electric Power Utility Technology (EPUT) Program **(A.S. *in Electric Power Utility Technology and Certificate in Natural Gas Technology*)**

- The two-year EPUT program was created with Eversource, Local 369, Utility Workers Union of America, and Local 12004 United SteelWorkers Union, combining classroom learning and hands-on experience. As a selective program, EPUT has prerequisite classes (Foundations of Algebra and Writing Skills II) and requires students to attend a program information session. During the break, students with a grade of C or higher can participate in a 10-12-week paid internship ($13-14/h) with Eversource while completing a for-credit internship course. During the internship, students must pass Eversource's Skills Aptitude Test, maintain safety

skills (following OSHA 1910 and 1926), physical and mechanical testing, and random drug and alcohol screening tests (mandated by Eversource). Eversource also offers a $600 tuition assistance for students per semester. The program qualifies graduates for a career as a laborer with electric and gas utilities ($30/h with overtime).[69] The program has a 98% job placement success rate.[70]

***Marine Technician Program* (Marine Systems Technician Certificate)**

- The 10-week, 100-hour, Marine Technician program was created in partnership with Mass Marine Trades Association, Mercury Marine University, and local employer Boston Boat Works, targeted to those with a high school diploma/equivalent or those with 1-3 years of mechanical experience. The ABYC Fundamentals of Marine Service and Technology is a mix of classroom and hands-on instruction on the basics of marine service and technology. The program covers: marine shop safety and practice, electrical systems and installation, internal combustion theory, drive systems, inboard and outboard engine maintenance, marine plumbing/HVAC, fiberglass basics, customer service, and more. Students also receive career counseling, mentorship, tutoring, hands-on training, and job placement assistance. Funding from the Office of Workforce Development has made the program tuition free for those who will work in the marine industry and those qualified for the Good Jobs Challenge or Rapid Recovery & Reemployment (R3).[71]

Public Water System Operator Program

- Introduction to Becoming a Public Water System Operator is a virtual, 5-week course (3.5h/week, total 17.5h) where students learn about the responsibilities of public water systems and public water system operators, basic math & chemistry, state and federal drinking water regulations, basic water treatment processes; water sampling requirements and techniques; overview of distribution system components (e.g. pipes, valves, pumps, tanks and water meters); cross connection control and water operator safety. They take the Grade 1 Treatment and Distribution Water Operator Examinations and the Very Small System (VSS) Water Operator Examination. Most students are already in the field and these certifications are necessary for upward mobility to become licensed water operators.[72] Water operator certification exam costs are covered by the program from 2024.

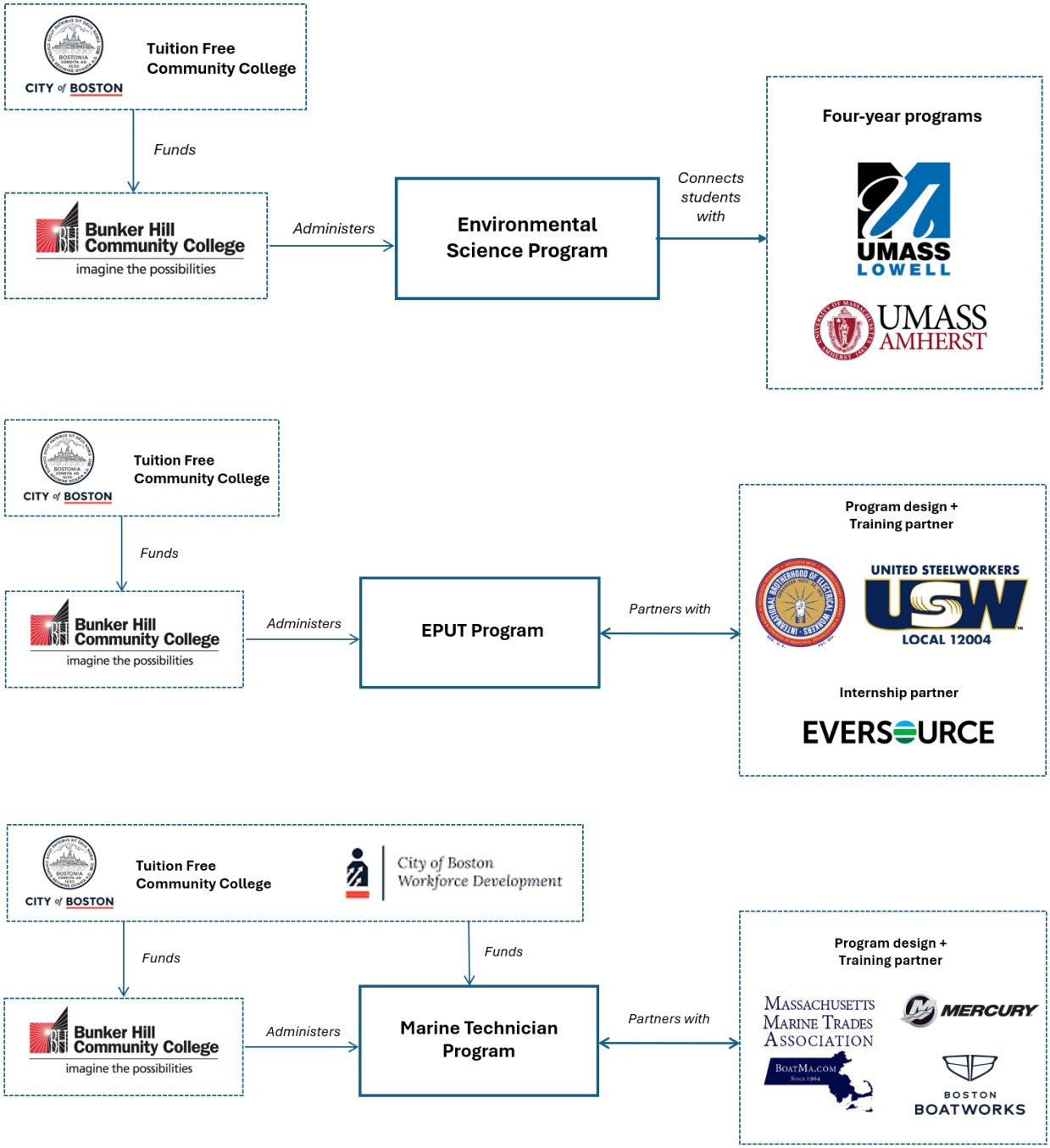
[69] https://www.bhcc.edu/eput/; https://catalog.bhcc.edu/preview_program.php?poid=1046

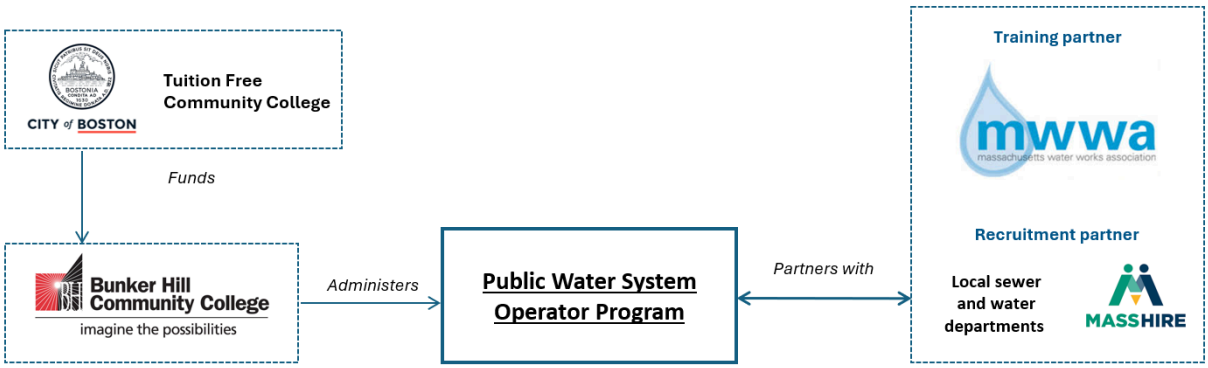
[70] https://www.bhcc.edu/news/2021/january/eversource-now-accepting-applications-for-highly-successful-career-training-program.html

[71] https://bhcc.edu/workforce/career/marinetechnicianprogram/

[72] https://www.bhcc.edu/workforce/grantsandfinancialassistance/publicwatersystemoperator/

Program partners





Contacts

- Environmental Science: Kim Frashure, Ph.D., Director of Environmental Science, kmfrashu@bhcc.edu
- Marine Technician Program: Jacqueline N. Saba, Maritime Trades Coordinator, jacqueline.saba@bhcc.edu
- Clean Water Tech Program: Ellis Lauren, lauren.ellis@bhcc.edu

3. MASSBAY COMMUNITY COLLEGE

Ashland, MA

Experiential Learning	Paid Training	Stackable Credentials	Employer Partnerships	Employability Skills	Comprehensive Services
✓	✓	✓	✓	No	NA

3,497	19%	NA%
Total enrollment*	Graduation rate**	Job placement rate***

*Taken from NCES [2022] for the entire institution, not specific programs
**Taken from NCES [2019] for the entire institution, not specific programs
***Not available for most community colleges

About the Program

Founded in 1961, MassBay Community College (MassBay) serves 6,000 full-time and part-time students in the Greater Boston and Metrowest region through their three campuses in Wellesley Hills, Framingham, and Ashland.[73] MassBay is a participating college in Boston's Tuition Free Community College (TFCC), offering over 70 degree and certificate programs that direct students to a four-year degree or direct employment. Through MassTransfer, students are guaranteed admission, credit transfer, and a discount for a four-year degree in any Massachusetts public university.

In 2001, MassBay opened the Automotive Technology Academy in Ashland, preparing students with the technical competence and professionalism needed to become dealership technicians. The program is certified by Master Automotive Service Technology Accreditation[74] in all eight performance areas: brakes, climate control, electrical/electronics, engine repair, emissions and energy performance, hybrid and electric car technology, steering and suspension, and transmissions.[75]

To be admitted, students must meet the course requirements in English reading and writing and math. Some have to take extra developmental classes. A valid driver's license is required due to the need for a vehicle for the cooperative education component and the nature of the

[73] https://www.massbay.edu/

[74] This is the highest level of achievement given by the Automotive Service of Excellence (ASE) Education Foundation (previously known as National Automotive Technicians Education Foundation).

[75] https://massbayedunew.s3.amazonaws.com/viewbook/viewbook-automotive.pdf

day-to-day job requirements at an auto dealership. Dealerships require drug testing (not including marijuana) and a review of their driving record.

MassBay has five Associate Degree (AS) programs in automotive technology and a certificate program in automotive technology. They partnered with BMW, General Motors, Jeep/Chrysler, and Toyota/Lexus to provide specialized curriculum in four of their AS programs. There are about 20 students in each degree program, totaling to 100 graduates each year.[76] Almost all graduates have job placement upon graduation due to their cooperative education model, earning a starting salary of about $55,000 annually and over $80,000 after their first three years.

To support their students, MassBay offers access to an on-campus counselor, as well as frozen meals to help address food insecurity. David Protano, Dean of Automotive Technology, anticipates that the TFCC will alleviate some financial concerns for students and lead to higher graduation rates. Some dealerships also help students purchase their own set of tools.

MassBay draws students from comprehensive and vocational high schools. Since 2023, MassBay has worked with Framingham High School (FHS) on a free, 3-week automotive technology summer boot camp for about 50 rising junior and senior students to raise career awareness in the automotive industry. This program is part of a FHS and Youth Connections (previously MassHire) partnership to promote education and career exploration in STEM, particularly for underrepresented high school students. The program gives students a $1,500 stipend and successful graduates are eligible to intern with McGovern Automotive Group.[77] So far, 4 high school students have enrolled in the degree program in Automotive Technology program. They are looking to expand this to other high schools.

Program structure

MassBay offers five tracks for the Associate Degree (AS) in Automotive Technology and a certificate in automotive technology:

AS in Automotive Technology (2 years, 73/74 credits)

- AS in Automotive Technology: BMW
- AS in Automotive Technology: Chrysler
- AS in Automotive Technology: General Motors
- AS in Automotive Technology: Toyota/Lexus
- AS in Automotive Technology: All-brand program

  Students study a specialized curriculum by one of the car manufacturers or the generic program and complete a paid, cooperative education requirement by working at a dealership. The all-brand program gives MassBay the flexibility to add EV training to the

[76] Approximately 10% of each cohort are certificate students.

[77] MassBay Community College 2024; Wayman 2023

curriculum. Classroom components (lectures and lab instruction) are taught by ASE Master-certified faculty at the Automotive Technology Center in Ashland.

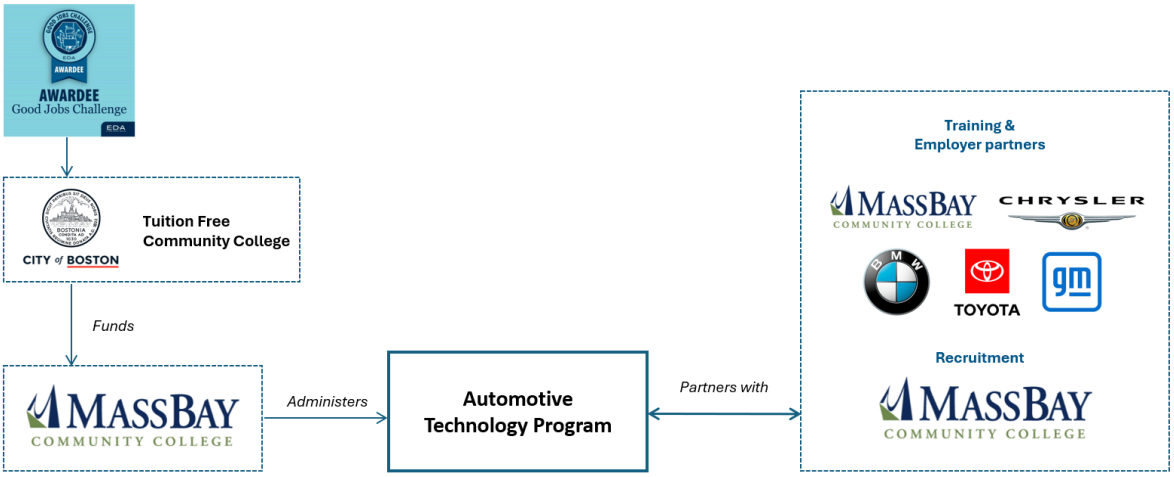
Graduates will have an AS in Automotive Service Technology with a concentration in one of the car manufacturers and are certified as a mechanic by the manufacturer. Upon passing the ASE certification exam, they are ready for full-time employment. The classroom components and the cooperative education meet the requirements for two years of work experience, so many students are ASE-certified before graduation. Even with the specialized curriculum, graduates have the flexibility to work for any car manufacturer, independent shops, or do fleet repair for municipalities or the MBTA.

Certificate in Automotive Technology (2 years, 52 credits)

- The Toyota Technical Education Network program prepares students to become automotive technicians at a Toyota/Lexus dealership. Unlike the AS degree, students do not have to take general education classes.

An AS degree is particularly helpful for those who want to go into management or open their own businesses, while the certificate is widely used for people looking for a career change.

Program Partners



Contacts

David Protano, Dean of Automotive Technology, dprotano@massbay.edu

4. MADISON PARK TECHNICAL VOCATIONAL HIGH SCHOOL ***

Boston, MA

Experiential Learning	Paid Training	Stackable Credentials	Employer Partnerships	Employability Skills	Comprehensive Services
✓	No	No	✓	✓	No

45,742	78.1%	NA
Total enrollment*	Graduation rate*	Job placement rate**

*Taken from MassDOE [2023] for the entire institution, not specific programs
**Not available for most high schools

About the program

Madison Park Tech is the only vocational-technical school in the Boston Public School system. It offers several programs that can prepare students for green careers. Two green-adjacent programs under Massachusetts Chapter 74 are Electricity and Heating, Ventilation, Air-conditioning, and Refrigeration (HVAC). Other programs have the potential for greening, including automotive technology, carpentry, facilities management, and plumbing.

In 2019, the Career Champions Network, comprising more than 40 community, business, and labor leaders, formed to support Madison Park in developing quality curriculum in key sectors of the Boston economy. Network members are helping the 20 programs at the school develop engaged advisory boards and to expand co-op opportunities for students.

In 2022, members of this group approached Madison Park leadership with the idea of the school creating a Clean Energy Taskforce to examine the potential of enhancing existing programs by adding skills needed in clean energy occupations identified by MassCEC. The taskforce was created and includes representation from the City of Boston, community groups, the Private Industry Council (PIC), MassCEC, and universities (including Northeastern). Four Madison Park teachers are leading the taskforce.

Using a list of 34 occupations identified by MassCEC as essential to achieving the Commonwealth's climate goals, the Clean Energy Taskforce determined that skills of 10 of existing programs could be integrated into existing Madison Park programs. A goal is to offer industry-recognized certifications to the curriculum where relevant. Initially, the taskforce identified 9 programs in which to integrate green skills.

The ten programs are: Automotive Technology, Carpentry, Electrical, Facilities Management, HVAC, Information Support Services and Networking, Metal Fabrication, Plumbing,

Programming and Web Development, Marketing. As a result of a Madison Park student in the marketing program doing a co-op at Northeastern, this program has been added as the tenth program.[78] The taskforce has initiated a Career Exploration Initiative that has students participating in field trips to clean energy employers. Other programming includes co-ops, career days, and guest speakers.

An example of how the Clean Energy Taskforce is integrating green aspects into existing programs is adding electric vehicle repair and vehicle charging maintenance to the automotive technology program. The school is in the process of procuring a $500,000 grant from MassCEC to purchase specialized equipment for electric vehicle repair.

Other program enhancements are in process, particularly in the building trades. Madison Park is partnering with Roxbury Community College so students can have access to the Building Operator Certification (BOC) certificate that prepares building operators and facilities staff to improve the energy efficiency and operational effectiveness of buildings. In addition, the Madison Park teacher leading the initiative has earned Fundamentals of Energy Efficient Building Operations (FEEBO) certification from the Building Performance Institute (also offered at Roxbury Community College) and can offer it to students in the related programs.

Eligible students at Madison Park can participate in a Cooperative Education (Co-op) program. Co-op provides supervised workplace employment and learning experiences for high school seniors.[79] Cooperative partners include some union locals with joint registered apprenticeship programs, including the International Union of Painters and Allied Trades District Council 35 (DC35), International Brotherhood of Electrical Workers (IBEW) Local 103, Pile Drivers Local 56 (North Atlantic States Regional Council of Carpenters), Ironworkers Local 7, Sheet Metal Workers Local 17.[80] Students completing co-op placements in partnership with union locals may be more likely to apply and be accepted into full apprenticeship programs.

One program of note is the Achieve Green program at Madison Park High School, a pre-apprenticeship partnership between DC35, the Painters and Glaziers Employers Association of New England and the City of Boston, allows students at Boston's Madison Park Technical Vocational High School to learn air sealing and glazing work, completing the first apprenticeship a year before they graduate. Students complete classroom and jobsite training in Boston, and can go on to complete the apprenticeship. About 25 students a year enter the program. Partners including IUPAT, teachers unions, and Climate Jobs National Resource

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[78] This position was funded by the City of Boston in connection with Northeastern's contract with the city.

[79] *Cooperative Education.* Madison Park Technical Vocational High School. https://madisonpark.bostonpublicschools.org/career-programs/cooperative-education-co-op/

[80] *Building and Property Maintenance*. Madison Park Technical Vocational High School.; *Electricity*. Madison Park Technical Vocational High School.; *Metal Fabrication & Joining Technologies*. Madison Park Technical Vocational High School.

Center recently won a Department of Energy Career Skills Training Grant to further develop the program curriculum to attract and retain students. Apprenticeship directors frequently reported recruiting from vocational technical high schools, including Madison Park.

Program Partners

NA

5. FRANKLIN CUMMINGS INSTITUTE OF TECHNOLOGY

Boston, MA

Priority climate areas: Building Decarbonization, Clean Energy, Transportation Electrification

Experiential Learning	Paid Training	Stackable Credentials	Employer Partnerships	Employability Skills	Comprehensive Services
✓	No	✓	✓	✓	No

513	44%	NA
Total enrollment*	Graduation rate**	Job placement rate***

*Taken from NCES [2022] for the entire institution, not specific programs
**Taken from NCES [2016] for the entire institution, not specific programs
***Not available for most community colleges

About the Program

The Franklin Cummings Institute of Technology (BFIT) began in 1908 as the Benjamin Franklin Institute of Technology with a donation in Benjamin Franklin's will. The Institute changed its name to the Benjamin Franklin Cummings Institute of Technology after receiving a $12.5 million gift from the Cummings Foundation in February 2022 to expand programs that create technical career pathways for students underrepresented in post-secondary education. The Institute will be moving to a new modern campus in Nubian Square in fall, 2025. The $47 million new building will include state-of-the art equipment for all programs.

In August 2022, the City of Boston received a $23 million Good Jobs Challenge Grant from the federal Economic Development Administration to create a regional workforce training system to prepare historically excluded residents of color access to high-quality jobs in clean energy, healthcare, and child care. The goal is to connect residents to more than 4,500 jobs.

With $1.5 million from this grant, BFIT launched the Center for Energy Efficiency and the Trades. The grant provides $1.5 million over 3 years for developing programs, hiring an executive director and faculty (one in renewable energy technology and one in EV technology). The grant requires that 918 students be placed in clean energy jobs by 2025. Typically about 150 students a year enroll in the HVAC-R certificate program. Partnerships with Bunker Hill Community College and the Asian American Citizens Association provide a pool of potential students.

Students receive full tuition scholarships ($18,306 annually) from the grant. Most students are eligible for PELL grants and other scholarships when the grant runs out. Others will have their

tuition paid by MassReconnect, a state program that offers free tuition for residents 25 or older who don't have a college degree to complete an associate degree or certificate at any of the state's 15 public community colleges. The program uses a "last dollar" model, meaning that it is applied after the student receives all other assistance for which they qualify.

Through this and other grants, BFIT is building green components into existing programs. An electric vehicle component is now part of the automobile mechanic program. Students in the Engineering Technology associate degree program can add a concentration in building energy management, or wind energy, solar energy, and energy storage. A management component was added to the environmental systems and sustainability program. Other additions include a power engineering focus in the electrical engineering program and a home system upgrade component. Students in the electrician program can add home system upgrading as a specialization. Finally, the HVAC&R technology certificate can become the first year of the building energy management concentration in the Engineering Technology associate degree.

BFIT received funding from the City of Boston's Neighborhood Jobs Trust (NJT) in 2021 and 2023. The $104,520 received in 2021 provided reduced tuition for 14 Boston residents for their 9-month HVAC&R Technology certificate program.[81] In 2022, Franklin Cummings Tech also received grant funding from the MassCEC Offshore Wind Works (OSWW) program to work with VinciVR to use virtual reality (VR) technology for simulations of offshore wind construction and installation jobs, as well as complex drive turbines.[82]

Program structure

Many programs are organized so that students can earn certificates along the pathway to an associate degree. Some courses are offered during evening hours so working students with certificates can earn their associate degrees. Likewise, all credits earned in the associate degree can be applied to bachelor's degree programs. The Engineering Technology program offers stackable certificates and an associate degree that articulates to the bachelor's degree in electrical engineering. Partnership with other institutions allow students to advance. These partnerships include UMass Lowell for Environmental Engineering; Northeastern's College of Professional Studies for mechatronics, manufacturing automation, computer technology, and biotechnology. These 2-to-4 year partnerships were created in the last two years.

The following are majors and concentrations with a focus on green professions:

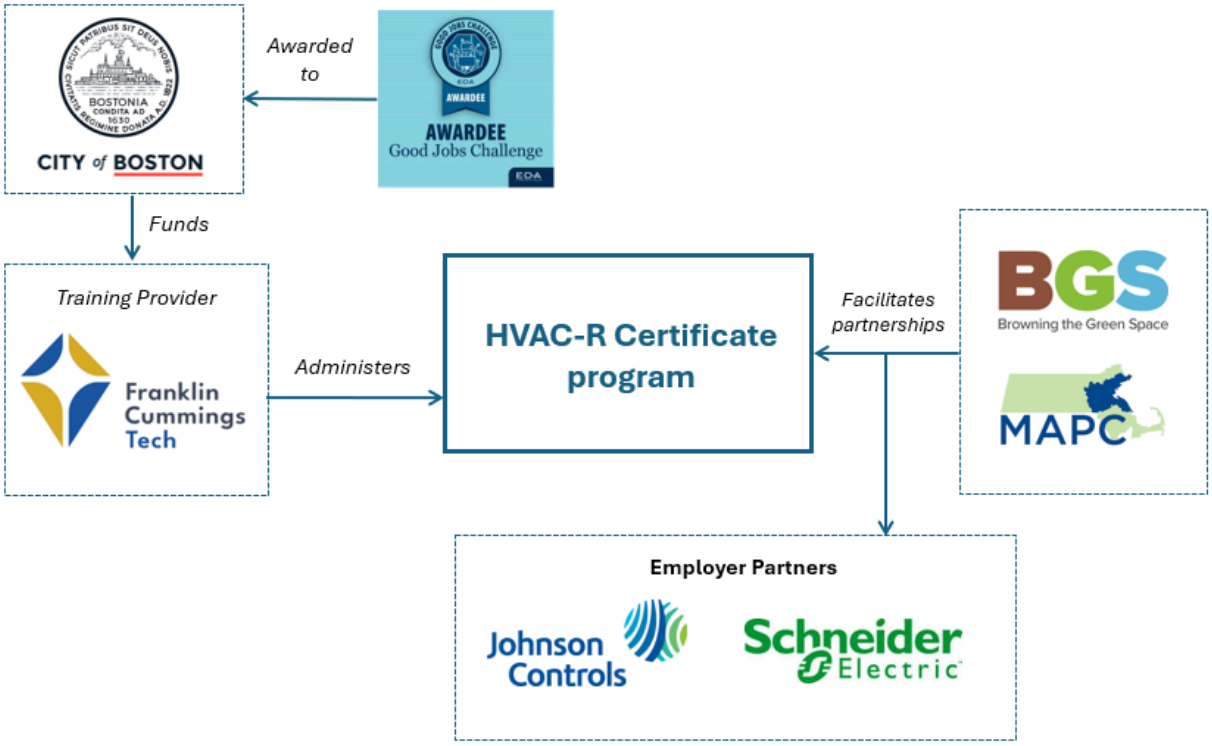
- Automotive Tech Certificate, Assoc. Degree (with or without EV Tech concentration)
- HVAC-R Technology Certificate (optional Building Energy Management Concentration)
- Engineering Technology, Assoc. Degree (optional Renewable Energy Technology Concentration)
- Practical Electricity Certificate (12 months)

[81] BFIT Awarded Funds to Support Boston HVAC&R Students, 2021; Hughes 2024

[82] "College Wins Grant to Promote Offshore Wind Energy Careers" 2022

Employer partners are essential to the program. Browning the Green Space helps in making employer connections. The MAPC also helps in developing employer partnerships in green tech sectors. Key partners include Schneider Electric and Johnson Controls for the HVAC-R program, both of which serve on the Industry Advisory Board. Once enough employers are on board, the goal is to develop a summer co-op program that will be available to all students.

Program Partners



Contacts

Natalie Patalano, npatalano@franklincummings.edu

6. BOSTON GREEN ACADEMY HORACE MANN CHARTER SCHOOL*

Boston, MA

Priority climate areas: Resilience & Nature

Experiential Learning	Paid Training	Stackable Credentials	Employer Partnerships	Employability Skills	Comprehensive Services
✓	No	No	✓	✓	No

426	89%	NA
Total enrollment*	Graduation rate*	Job placement rate**

*Taken from MassDOE [2023] for the entire institution, not specific programs
**Not available for most high schools

Boston Green Academy (BGA) is a 6th-12th grade Horace Mann charter school in the Boston Public School system that focuses on environmental science and technology. The school has 500 students who are chosen through a blind lottery based on available seats. The student body is 93% Black or brown and 80% are low income. BGA is the only Boston public school that offers the Chapter 74 Environmental Science Career and Technical Education (CTE) program, which emphasizes both career and college.[83] Although the curriculum for all students emphasizes the environment, only about ¼ of students are in the more rigorous CTE program.

Several indicators document BGA's success. The graduation and college attendance rates have improved considerably since BGA took over the school in 2011. For example, 86.1% graduated in 2022, compared to 70.8% in 2012. This is high compared to Boston, with a graduation rate of 81% in 2022, compared to 65.9% in 2012. The Massachusetts state average is still higher, with a graduation rate of 90.1% in 2022 and 84.7% in 2012. Attendance at a 4-year college after graduation has also increased since BGA took over, from 31.5% in 2012 to 45.3% in 2022.[84] In 2019, BGA was recognized as a U.S. Green Ribbon School by the federal Department of Education for its performance-enhancing sustainability practices. In 2023, BGA was a finalist for the most improved school in the Boston systems and is in the running for the award again for 2024.

[83] This refers to Massachusetts General Law Chapter 74, which defines standards for vocational technical education. Chapter 74 programs also meet federal Carl Perkins Act requirements for career and technical education and offer high-quality college and career pathways.

[84] *Plans of High School Graduates (2011-12)*. DOE.

Program structure

BGA uses a project-based experiential curriculum in all grades, moving from exposure to experience and then engagement. Through the “green line” program (a reference to one of Boston’s public transit lines), students engage in learning experiences and community service projects at places such as Boston Nature Center, Urban Ecology, and Thompson Island Outward Bound. The students operate a hydroponic container farm, which is a shipping container used to grow greens. Students plant the seeds, transfer plants to the watering system, care for the plants as they grow and sell the produce. Eleventh graders organize a green action expo for which all students in grades 9-12 produce projects. The cross-curricular exhibitions engage students in conducting research, writing, and public speaking. Recent expos have been held at Boston University and Greentown Labs. Seniors do a six-week internship with employer partners. Several Boston city departments, and other local institutions engage with the school as well.

Website:

https://www.bostongreenacademy.org/historyandvision

7. UMASS BOSTON SUMMER PROGRAM IN URBAN PLANNING*

Boston, MA

Priority climate areas: Multiple

Experiential Learning	Paid Training	Stackable Credentials	Employer Partnerships	Employability Skills	Comprehensive Services
✓	✓	No	✓	No	NA

15-27	NA	NA
Total enrollment*	Graduation rate	Job placement rate

*1st cohort: 15 ; 2nd cohort: 27

About the program

The University of Massachusetts (UMass) Boston Summer Program in Urban Planning introduces high school students to urban planning, focusing on resilience and climate change. It was created in 2021 through a collaboration between the Boston Planning and Development Agency (BPDA) and the Department of Urban Planning and Community Development (UPCD) at UMass Boston. The program was designed to introduce youth of color to public service careers in urban planning, design, and development through experiential learning. The pilot was launched in 2022 with 15 students from Madison Park Vocational and Technical High School, Dearborn STEM Academy, TechBoston Academy, and Blue Hills Regional Vocational High School. Due to the positive responses from the pilot cohort, the program expanded in 2023 to two cohorts with 9 continuing students and 18 new students from the same schools and the Boston Community Leadership Academy (BCLA)/McCormack School.

The program received $58,592 and $100,000 from BPDA in 2022 and 2023 respectively.[85]

Program structure

Program highlight

The 2022 cohort culminated in a public presentation of the Cool Roxbury: Lower Roxbury's Extreme Heat Challenges and Solutions Report to eighty residents, institutional leaders, and elected officials. After the presentation, the students were invited by Boston City Council

[85] BPDA 2022; UMass Boston Office of Communications 2023

President, Ed Flynn to share their findings and recommendations at City Hall. Subsequently, they also presented at an agency-wide staff meeting with 150 BPDA planners and at the American Planning Association's (APA) Housing and Community Development national webinar. In October 2022, they were awarded the 2022 Best Student Project Award by the Massachusetts Chapter of the APA, being the first and only high school students to have received the award.

The four-week program (Monday-Friday, 9 am to 2 pm) includes classroom and field-based learning opportunities offered by graduate planning students and faculty. The foundational course introduces students to community planning for urban resiliency that supports their month-long community-based research project. Students explore urban planning topics including the environmental, economic, and social impacts of climate change in Boston. They also collect and analyze environmental planning data. Over six field trips, they acquire technical skills in research, interviewing, reading, comparing maps, evaluating designs, selecting strategies for climate action, and developing climate policies – all of which contribute to their final projects.

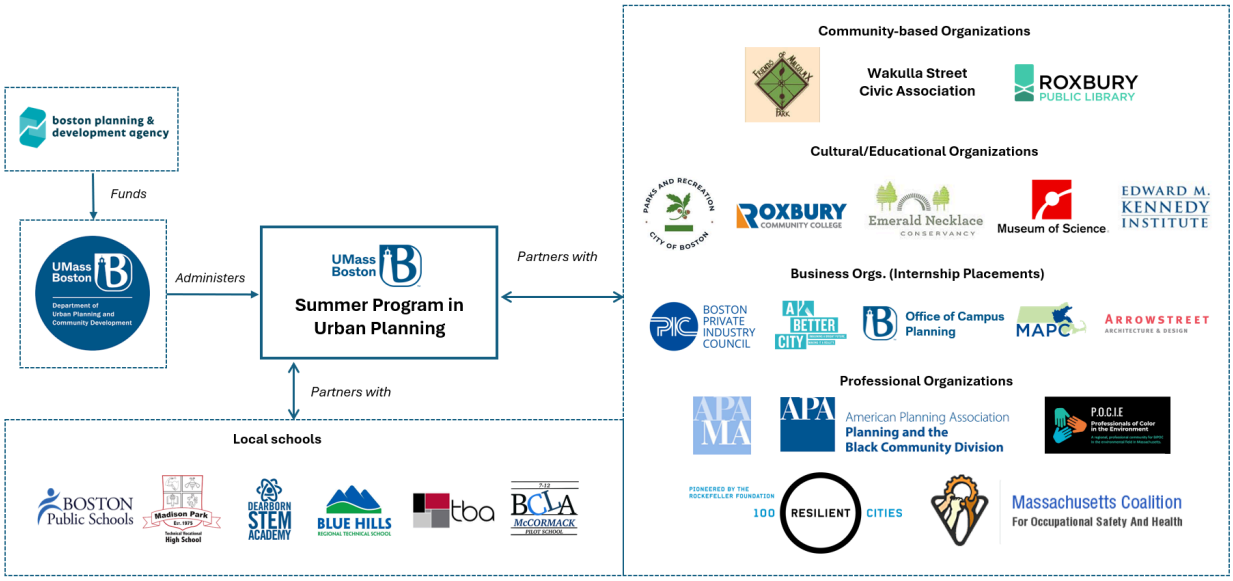
In 2023, the new cohort built on the extreme heat research of the first cohort, while the continuing students learned about the basics of urban design and planning implementation. The continuing students worked with Roxbury Community College (RCC) and the City of Boston Parks Department to redesign a RCC parking lot into a pocket park that helps to reduce the urban heat island effect in the neighborhood. By shifting the "exposure" experience to an "immersion" experience, the students developed and mastered key planning concepts, methods, and skills. The immersive program was followed by a one-month full-time internship at one of Boston's leading public, private, and non-profit planning organizations. Students worked 37.5h/week at $15/hr. The program also provided no-cost access to a 3-credit university course about Boston's contemporary urban planning history. In the Spring of 2024, seven summer program participants enrolled in UPCD 375L Introduction to Urban and Regional Planning taught by Professor Ken Reardon at UMB. As part of this course, the students undertook an analysis of the development potential of UMB's Calf Pasture Pumping Station and its surrounding 8 acres.

Summer school students also had the opportunity to participate in an after-school enrichment program that organized a mix of professional development and recreational activities. Among these activities were lectures on the role universities play in the urban economy, the current state of resiliency planning in Boston, and the contribution public transportation can make to enhancing community resilience. Students were also introduced to 3D printing in UMB's Maker's Space Laboratory through two "hands-on" laboratory sessions. Finally, students participated in an afternoon of bowling and the premier of a new documentary on sea-level rise in Boston. Upon completion, students receive a certificate of completion, two letters of recommendation, and two planning-related books.

According to UMass Boston's UPCD report on the program, one of the unique aspects of the summer program is how much of the learning happens in small 4-6 person groups facilitated by the graduate urban planning students, who develop close relationships with students. The graduate students provide critical guidance for learning activities and are also responsible for supporting students by encouraging their attendance and participation and identifying unique talents and insights that each student can bring to the project.

Moreover, the various program partners were instrumental in curating a diverse and effective curriculum with multimedia learning materials, guest speakers, field trips to their headquarters, public speaking workshops, and attending and actively participating in the programming.[86]

Program Partners



Contact:

Dr. Sowmya Balachandran, Sowmya.Balachandran@umb.edu

[86] UMass Boston UPCD SSL 2023

8. INNOVATION CAREER PATHWAYS*

Boston, MA

Priority climate areas: Multiple

Experiential Learning	Paid Training	Stackable Credentials	Employer Partnerships	Employability Skills	Comprehensive Services
✓	No	✓	✓	✓	No

About the program

The Massachusetts Department of Elementary and Secondary Education (DESE) oversees public K-12 education throughout the state.[87] Within the DESE, the Office of College, Career and Technical Education (OCCTE) has been responsible for leading the Massachusetts High Quality College and Career Pathways (HQCCP) initiative since its launch in 2017 by the Baker Administration. HQCCP's goal is to expand access to high-quality career pathways for Commonwealth residents through Early College (EC) and Innovation Pathways (IP).

While EC started in 2017 to provide high school students the opportunity to complete college-level coursework and explore a range of career pathways, IP was introduced in 2020 to provide high school students coursework and experience in "specific high-demand industry," such as information technology, engineering, healthcare, life sciences and advanced manufacturing.[88] As of 2023, 4 schools in the City of Boston are participating in IP: Brighton High School, Burke High School, Dearborn STEM Academy, and Excel High School.[89] For SY2023-2024, DESE expanded IP to include the clean energy industry as a high-demand industry in 6 pilot schools. Boston schools are yet to participate in this pathway.[90]

Students must complete 100 hours of out-of-classroom activity through an internship or a capstone class that develops knowledge and skills in STEM fields. In addition to developing knowledge and skills in a student's chosen field, IP's high-quality career immersion experience requirement is designed to build strong partnerships with employers.

To receive formal designation, local education agencies (LEAs) and higher education institutions may apply to the DESE.[91] The applicant is required to demonstrate alignment with the 5 guiding principles, which are shared with the EC pathways:

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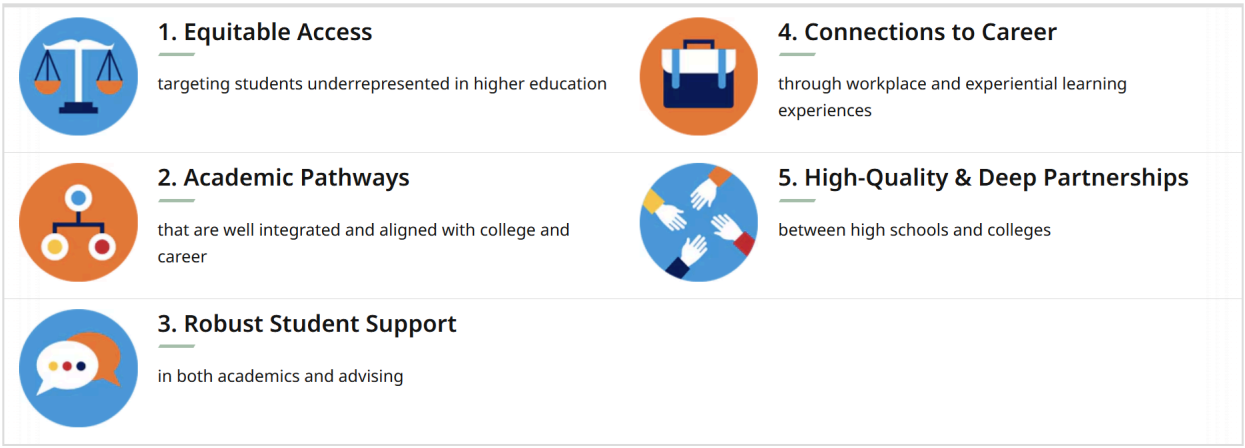
[87] *Overview of the Department of Elementary and Secondary Education.* Mass.gov.

[88] https://www.doe.mass.edu/ccte/pathways/early-college/designation-criteria.pdf

[89] https://www.doe.mass.edu/ccte/pathways/innovation-pathways/designees.xlsx

[90] https://www.doe.mass.edu/ccte/pathways/innovation-pathways/priority-industry-sectors.pdf

[91] https://www.doe.mass.edu/ccte/pathways/innovation-pathways/default.html



Source: Creating College & Career Pathways. Mass.gov.

9. CLEAN ENERGY INNOVATION CAREER PATHWAY* ***

Massachusetts (not currently offered in Boston)

About the program

The Clean Energy Innovation Career Pathway builds career awareness among high school students across Massachusetts. Students receive course work and experiential learning opportunities in priority industries in the clean energy sector. The program has partnerships with employers to expose students to career opportunities and help develop relevant knowledge and skills for their chosen field of study.[92]

The program is a partnership between MassCEC and the Department of Elementary and Secondary Education (DESE). DESE determines the requirements for the Innovation Career Pathway model and designation process for schools, with MassCEC as a strategic partner in developing the Clean Energy Innovation Career Pathway curriculum. Industry partners and MassHires are also engaged in the program design, partnership, and implementation. The program is funded by Governor Healey and Lieutenant Governor Driscoll's FY24 budget of $47 million for Early College and Innovation Career Pathways and the DESE (for planning and implementation funds).[93]

Interested schools must apply to DESE for planning and designation but schools and communities can also apply for additional funds through MassCEC's Equity Workforce programs as long as the program needs and objectives are consistent with the goals and terms of the funding opportunity.[94]

In 2023-2024, the DESE is piloting the program in six public high schools across the state (none in Boston).[95] The first cohort of students will enroll by the start of the 2025-2026 school year. Following the pilot, implementation tool kits and best practices will be shared with other high schools.[96]

Program structure

The program follows the structure of DOE's Innovation Career Pathways. Schools typically integrate the modular curriculum into other courses that are part of the pathway. Additionally, students must complete 100 hours of out-of-classroom activity through an internship or a capstone class that develops knowledge and skills in the clean energy industry. MassCEC

[92] Innovation Career Pathways, n.d.

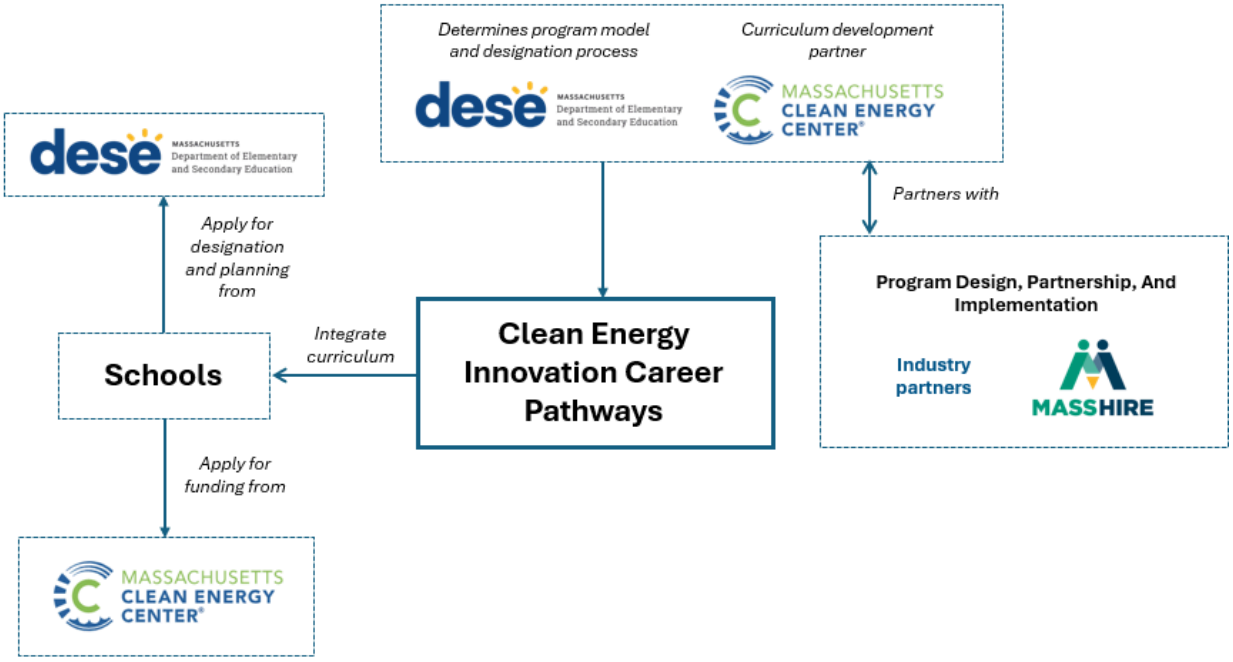
[93] Fennimore 2023

[94] Applebaum 2024

[95] https://www.mass.gov/news/healey-driscoll-administration-awards-new-innovation-career-pathways-to-36-high-schools

[96] Applebaum 2024

anticipates internship placements will be a component of some programs to provide work-based learning by Summer 2025 or the 2026-2027 school year.



Contacts

Jennifer Applebaum, Managing Director of Workforce Development, japplebaum@masscec.com

Chicago Public Schools Partnership

The Chicago Public Schools (CPS) provide high school students with multiple pathways into skilled trades professions. In 2005, the Chicago Board of Education and union signatories to the City of Chicago's pre-existing Multi-Project Labor Agreement signed an addendum that established the following:

- A craft-by-craft goal that 25% of all "apprentices, interns, or other construction related work opportunities" each year will be filled by graduates of the Chicago Public Schools;
- Signatory unions commitments to holding quarterly entrance exams at CPS high schools for open apprenticeship programs;
- Union-led teacher training programs that train CPS teachers on how to educate students about careers in the building trades and workforce pathways available to them through CPS;
- Union commitments to hosting regular CPS student visits to apprenticeship training facilities;
- Requirement that all Joint Apprenticeship Training Committees report annually to the CPS Education to Careers Office the number of CPS graduates who applied for, were accepted into, and graduated from their respective apprenticeship programs, alongside overall the numbers for each category.

In conjunction with CPS's Education to Careers program focus on construction careers, CPS partners with the City College of Chicago to run Chicago Builds, a 2-year state registered pre-apprenticeship program for CPS high school juniors and seniors.[97] Chicago Builds draws first-year program participants from high schools throughout the city to a central training facility for a rotation through four consecutive 10-week training programs in the Electrical, Carpentry, HVAC, and Welding trades. In the second year of the program, participants chose a construction pathway to specialize in and prepare for the apprenticeship entrance exam.

[97] Chicago Public Schools. Chicago Builds. https://www.cps.edu/academics/work-based-learning/chicago-builds/

3. Supporting Organizations

Within the non-union workforce training ecosystem, these supporting organizations convene training providers and employers, administer grants, and help develop training, among other roles.

1. BROWNING THE GREEN SPACE

Boston, MA

About the program

Browning the Green Space (BGS) is a coalition of leaders and organizations mostly in the New England region working to increase Black and Brown participation and leadership in clean energy occupations. Since September 2020, BGS has been linking participants in green education and training programs with employer mentorship, internships, and apprenticeships. At least 60 youth have been matched with internship hosts and attended workshops for career and professional development.[98] BGS also provides DEI training to employers.

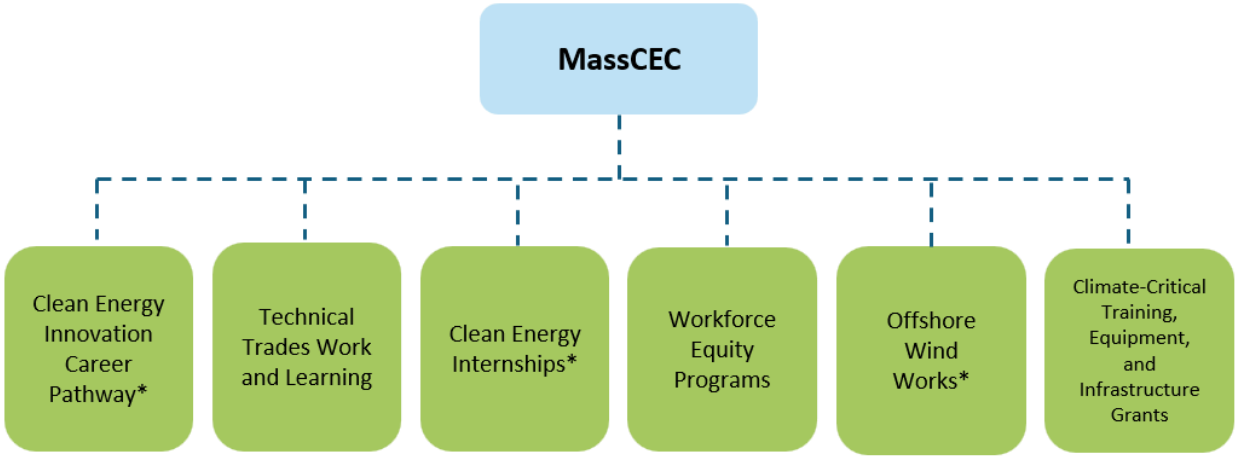
[98] Harrington 2024

2. MASSCEC

About the organization

MassCEC is the state's quasi-public agency that works to increase clean energy adoption and climate technology innovation to meet the Commonwealth's climate goals. Through administering grants and programs, as well as fostering partnerships, MassCEC advances the state's clean energy economy, while supporting an equitable distribution of the health and economic benefits of clean energy. Since 2022, MassCEC has awarded $22 million in Equity Funding to over 65 organizations and will award another $12.5M by the end of the 2023-2024 fiscal year.

The following are MassCEC-funded programs featured in this report:



**These programs are focused on building career awareness; job placement is not necessarily a target outcome of internship placements.*

3. MASSCEC TECHNICAL TRADES WORK AND LEARNING

About the program

Since 2022, the MassCEC Technical Trades Work and Learning program has been placing students and recent graduates from vocational high schools in jobs. The program was expanded in 2023 to include After Dark programs and CTI program participants in paid climate-critical and clean energy internships. By connecting young adults with technical backgrounds to potential employers, the program supports students' job-readiness, provides mentorship opportunities, and diversifies the talent pipeline for the state's clean energy companies.

The program is funded by MassCEC's annual budget, which is allocated by the MassCEC board of directors based on budget availability and demand estimates.[99] Host employers can select up to 3 interns and are reimbursed up to the subsidy rate ($8,640 per intern) upon internship completion. The minimum wage that employers can seek reimbursement for is $18/hr, and many employers offer higher wages (average $20.30/hr).[100] They are only allowed to hire the same intern once through this program.[101]

After students submit applications on the MassCEC website and online database, employers must select interns before MassCEC can officially reserve the funding.[102] Co-op coordinators in schools also assist employers with recruitment. Of the 27 employers that have participated across the state, 4 are in Boston.[103]

MassCEC recruits clean energy employers through direct outreach, career fairs, and connecting with Career Technical Schools.[104] The MassCEC funding is available for any Massachusetts-based clean energy company that can provide a meaningful work-based learning experience related to the company's core line of work that does not include only administrative tasks (more info in their FAQ).[105] Participating employers are not allowed to ask interns to sign non-compete agreements.[106]

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[99] Applebaum 2024

[100] Vaisanen 2024

[101] "Technical Trades Work And Learning Program For Employers (Formerly Called Vocational Internship Program)," n.d.

[102] MassCECa 2023; MassCECb 2023

[103] Schuler and Vaisanen 2024

[104] Schuler and Vaisanen 2024

[105] Vaisanen 2024

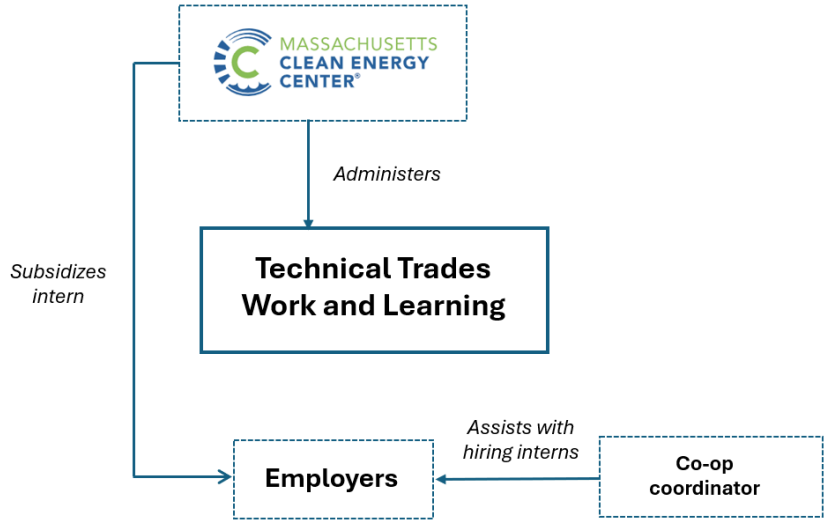
[106] "Technical Trades Work And Learning Program For Employers (Formerly Called Vocational Internship Program)," n.d.

Program structure:

The program runs for an academic year. Participants receive paid training at a minimum wage of $18/hr and receive on-the-job training at a clean energy organization.[107]

Program Partners

Vocational School partners include 36 high schools across the state, including Madison Park Technical Vocational High School in Boston. The full list of partners can be found on the website. Employer partners include 36 companies in sectors, including solar, fuel cell, energy efficiency, HVAC, geothermal, hydro, and green building. The full list of employers can be found on the website.



Contacts

Jennifer Applebaum, Managing Director of Workforce Development, japplebaum@masscec.com

[107] Ibid.

4. MASSCEC CLEAN ENERGY INTERNSHIP PROGRAM*

About the program

Launched in 2011, the MassCEC Clean Energy Internship Program connects college or university students and recent graduates of training programs in Massachusetts to verified clean energy companies across the state. The program was created to create a stronger, more diverse, and equitable talent pipeline in the state's clean energy industries.[108]

As the state's clean energy technology-focused quasi-public agency, MassCEC's goal is to increase the adoption of clean energy to meet the Commonwealth's climate goals, which includes creating the necessary workforce and creating partnerships between the public and private sectors. Since 2011, the program has received over $24 million from the MassCEC annual budget and has worked with more than 600 unique companies across the state that offered part and full-time positions to interns upon completion. In FY 2023, 623 individuals were matched with employers across the state.

Program structure

The program runs spring, summer, and fall sessions. MassCEC requires employers to pay interns at least minimum wage (approx. $15.50/hr). Starting Fall 2024, MassCEC will reimburse up to $18/hr as it serves a broader range of workers and learners. The average wage for FY23 is $20.30/hr.

Employers can host up to 3 interns if 1 of 3 interns attends a community college and 2 interns if neither attends a community college. They can re-hire interns in a different calendar year and non-subsequent sessions (e.g., Spring 2021 and Fall 2021). Employers are reimbursed up to the subsidy rate ($4,320/intern in the fall or spring sessions and $8,640/intern in the summer session) upon internship completion.[109]

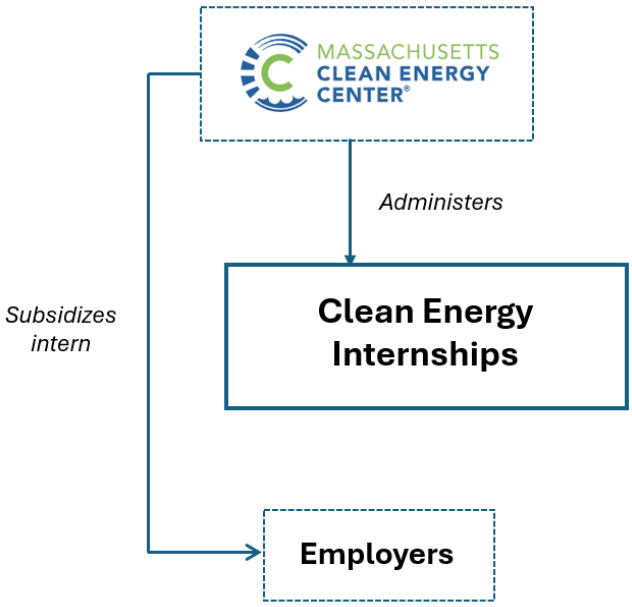
Program Partners

Program partners include about 70 universities and colleges across the state. The full list of partners can be found on the website.

So far, the program has partnered with 638 unique companies in various sectors, including solar, smart grid, alternative transportation, energy efficiency, and green building companies. 92 companies are Boston-based. The full list of employers can be found on their website. In FY23 67% of participating employers were located in the Boston area.

[108] "Clean Energy Internship Program For Employers," n.d.

[109] Ibid.



Contacts

Jennifer Applebaum, Managing Director of Workforce Development, japplebaum@masscec.com

5. MASSCEC WORKFORCE EQUITY PROGRAMS

About the program

The MassCEC Workforce Equity Program was created through Massachusetts climate legislation, An Act Creating a Next Generation Roadmap for Massachusetts Climate Policy (March 2021) and re-defined by An Act Driving Clean Energy and Offshore Wind (August 2022). Every year MassCEC allocates more than $12 million to support workforce training and business development for underrepresented groups.[110]

The Workforce Equity Program has 3 kinds of grants. Programs that are featured in this inventory are listed below each grant:.

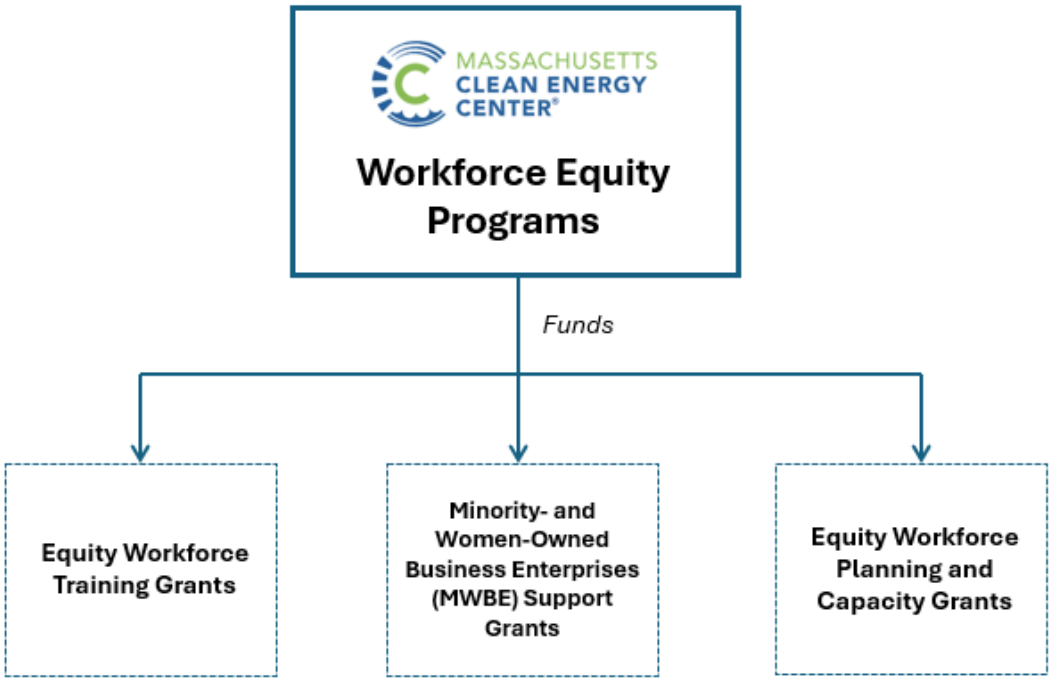
Equity Workforce Training Grants	**Minority- and Women-Owned Business Enterprises (MWBE) Support Grants**	**Equity Workforce Planning and Capacity Grants**
For organizations that plan, develop, and deliver training programs in climate-critical occupations and business fields that serve EJ communities, tribes, and underrepresented populations in the clean energy sector.	Supports the creation, entry, and/or expansion of MWBEs into fields that are critical to achieving the Commonwealth's climate goal of net zero by 2050. This includes certification-assistance, mentoring, networking, pipelines to procurements, and access to capital (up to 3 years).	Applicants to the first two grants that are not at the implementation stage can apply for planning and capacity grants.
• All In Energy • Building Electrification Training (BlocPower) • Franklin Cummings Institute of Technology (BFIT) • Bridges to Green Jobs (LISC)		• All In Energy • Building Electrification • Bridges to Green jobs (LISC) • Codman Square Neighborhood Development Corporation • Madison Park Technical Vocational High School

[110] "Workforce Equity Programs," n.d.

• Solar Helping Ignite Neighborhood Economies (Rare)		• Roxbury Community College
• Career Pathway Training: $1,200,000 • Career Awareness: $600,000 • Equipment & Infrastructure: $750,000	• Training, Certification, and Support Services: $1,000,000 • Access to Capital: $150,000	• Planning: $50,000 • Capacity: $150,000 • Additional Support Services: $150,00 • Professional Development: $250,000

Program structure

The Equity Workforce Training and MWBE Support grants are awarded on an annual basis, while the Equity Workforce Planning and Capacity Grants are awarded on a rolling basis. MassCEC also provides applicants with pre-application webinars and office hours.



Contacts

Jennifer Applebaum, Managing Director of Workforce Development, japplebaum@masscec.com

6. MassCEC OFFSHORE WIND WORKS (OSWW)*

About the program

The MassCEC Offshore Wind Works (OSWW) program aims to expand the Commonwealth's capacity to develop a workforce that can plan, manufacture, deploy, operate, and maintain offshore wind farms through providing OSWW Grants and cultivating a Community of Practice (CoP).

There are three primary focus areas of the OSWW program:

1. **Planning, analysis, and engagement**: advancing technical projects and stakeholder engagement on marine wildlife, fisheries, habitat, metocean, and transmission
2. **Sector development**: expanding manufacturing, suppliers, services, and infrastructure, and growing a well-trained and highly-skilled workforce
3. **Research and innovation**: support and collaboration for offshore energy research and technology innovation.[111]

Between 2017 and 2024, MassCEC awarded 7 rounds of grant funding through the OSWW Grant ($14.7 million as of May 2024) to 26 unique Massachusetts institutions (51 total awards), labor unions, non-profit organization, and businesses to support offshore wind workforce training programs and projects.[112] In 2020, MassCEC piloted the CoP for Massachusetts Offshore Wind Workforce Training and Development to create a "cohesive and comprehensive ecosystem" of all previous offshore wind grantees and potential partners, share information and resources, and develop pathways into the offshore wind industry.[113] The quarterly meetings hosted by CoP members have guest speakers, panel discussions, grantee presentations, and networking. Recently, they invited organized labor, including electricians and pile drivers, to discuss their experiences in the offshore wind industry.[114]

Program Structure

The OSWW grant accepts a wide range of applicants, including non-profit CBOs, government entities, schools, higher education institutions, unions, and private workforce training providers or private companies that work with the aforementioned categories.[115] They encourage applicants to partner with other organizations in the offshore wind sector. Grants are available under 3 different tracks:

[111] Solicitation: Offshore Wind Works: 2023.2 Offshore Wind Workforce Grants

[112] Farnsworth and Belknap 2024

[113] Offshore Wind Works Grants And Community Of Practice, n.d.

[114] Farnsworth and Belknap 2024

[115] Offshore Wind Works Grants And Community Of Practice, n.d.

Track 1: Workforce Development Programming (Over $2 million total, up to $300,000/grantee)

- Track 1 funds traditional workforce development programs, access for opportunity for priority groups, and workforce studies. MassCEC's research and portfolio assessment, as well as input from industry partners and the CoP inform the priority focuses on Track 1 each year. In 2023, the priority focuses included skilled trades, career technical education (CTE), secondary and higher education, and worker safety. In previous years, they have also funded programs that improved training partnerships between labor and industry partners and access to opportunity in priority groups.

Track 2: Workforce Infrastructure (Over $5 million total, up to $2 million/grantee)

- OSWW received $5 million to fund workforce training equipment and infrastructure.[116] As infrastructure has always been a focus for MassCEC, after ARPA funds are exhausted, MassCEC will provide up to $1 million per grantee.

Track 3: Worker Training for Offshore Wind Port Terminals (up to $1 million/grantee)

- This grant is in collaboration with Vineyard Wind. They have identified a need in port workforce training in the offshore wind industry, like cranes and Self-Propelled Modular Transporters (SPMT) training.

In the last year, MassCEC has shifted the award structure into two rounds to reach more grantees. ARPA and Vineyard Wind have provided supplemental funding to expand MassCEC programming. MassCEC Due to the slowdown in the offshore wind industry, OSWW has shifted its focus to outreach and early education programs in middle schools, vocational schools, and high schools. However, offshore wind still remains a big part of the state's future renewable energy mix, and training programs will likely gear up in a few years. [117]

Recent grantees include:

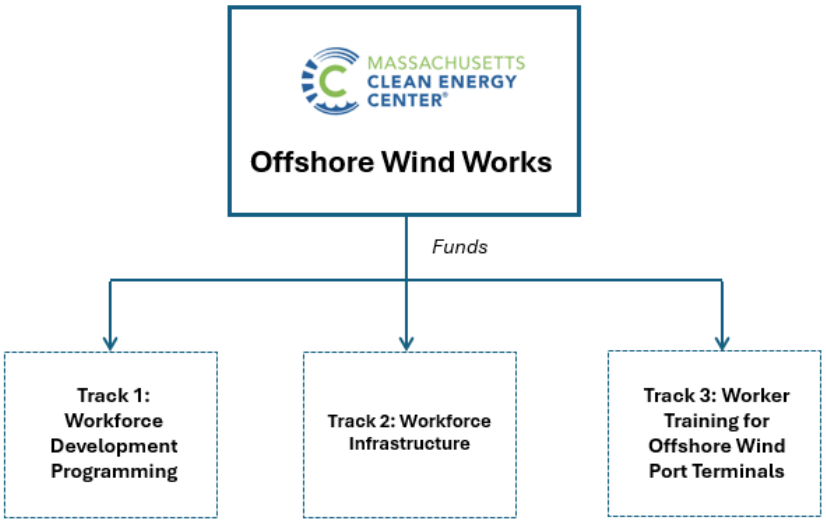
- FC Tech
- Building Pathways

[116] The other $5 million of the ARPA funding was given to the MassCEC Clean Energy Workforce program.

[117] Farnsworth and Belknap 2024

Highlight

An important part of the offshore wind workforce is the certifications. Workers are recertified every 2 years. Many of the typical skilled trades, like electricians and construction, require additional training and certifications to be able to work on offshore wind sites or ports. Therefore, OSWW has been funding additional training for union workers. The Global Wind Organization training is an industry standard safety and technical training, but they often require specialized training facilities that union facilities do not have. However, MassCEC has made efforts to keep the training local. Recently, they collaborated with Massachusetts Maritime Academy and the National Offshore Wind Institute at Bristol Community College for helicopter underwater escape training (HUET) training, as workers have needed to be transferred on helicopters due to the swells slowing down projects.



Contacts

Lauren Farnsworth, Senior Program Manager, lfarnsworth@masscec.com
Jeremy Belknap, Program Coordinator, jbelknap@masscec.com

7. MASSCEC CLIMATE-CRITICAL TRAINING, EQUIPMENT, AND INFRASTRUCTURE GRANTS

About the program

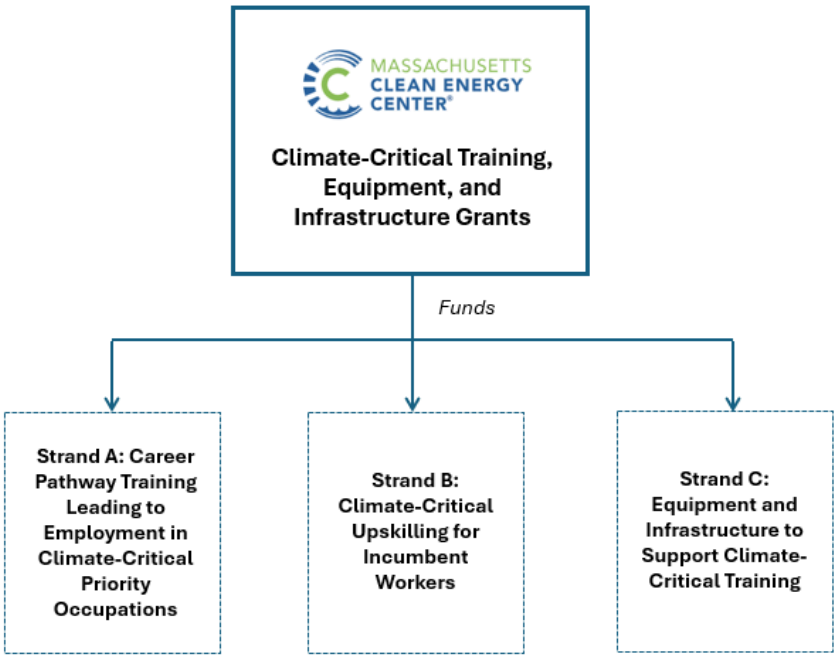
The Climate-Critical Workforce Training, Equipment, and Infrastructure Grants provide up to $800,000 in direct funding and technical assistance to organizations that can develop and scale career pathways and upskilling for Massachusetts residents in climate-critical priority occupations. The funding is available for one to two years in three different categories:

- Strand A: Career Pathway Training Leading to Employment in Climate-Critical Priority Occupations
- Strand B: Climate-Critical Upskilling for Incumbent Workers
- Strand C: Equipment and Infrastructure to Support Climate-Critical Training

MassCEC emphasizes the importance of high employer engagement and leveraging existing workforce development systems for successful training programs. While single applicants are eligible, they strongly encourage partnerships with Lead Applicants coming from CBOs, Community Colleges, Colleges, Universities, Comprehensive and Vocational High Schools, For-Profit Entities, Workforce Development Organizations, and MassHire Workforce Investment Boards and Career Centers.

For Strand C, private organizations must provide a 1:1 financial match, while public organizations must provide a 25% project cost-share. Applicants are also allowed to apply for different strands as long as each grant application is used for different outcomes.

The Green Jobs Academy received this grant for 2025-2027.


MASSACHUSETTS CLEAN ENERGY CENTER
Climate-Critical Training, Equipment, and Infrastructure Grants
Funds
Strand A: Career Pathway Training Leading to Employment in Climate-Critical Priority Occupations
Strand B: Climate-Critical Upskilling for Incumbent Workers
Strand C: Equipment and Infrastructure to Support Climate-Critical Training

PART B.

Locally Offered Certificates By Sector

Appendix B.

Certification	Program Administrator	Training Program name
609 MVAC certification	Franklin Cummings Tech (BFIT)	HVAC&R Technology (Building Energy Management Concentration)
Associate Commissioning Professional (ACP)	Roxbury Community College	Building Automation Systems (BAS)
Automotive Service Excellence (ASE) Certification	Franklin Cummings Tech (BFIT)	AS in Automotive Technology (with EV Technology Concentration)
	MassBay Community College	AS in Automotive Technology
Building Operator Certification (BOC) Fundamentals of Energy Efficient Building Operations[118]	Roxbury Community College	Building Fundamentals
Building Operator Certification (BOC) Fundamentals of Energy Efficient Building Operations	PowerCorpsBOS	PCB Building Operating Systems
	Cape Light Compact, Eversource MA, National Grid, Energize CT and RI Energy	Building Operator Certification (BOC) Training Level 1
	Roxbury Community College	Building Fundamentals
Building Automation Systems (BAS) Fundamentals	Roxbury Community College	Building Automation Systems (BAS)
BPI Building Science Principles	Roxbury Community College	Energy Auditing Building Analyst
BPI Building Analyst Technician	Roxbury Community College	Energy Auditing Building Analyst
BPI Building Analyst Professional	Roxbury Community College	Energy Auditing Building Analyst
Certificate in Natural Gas Technology	Bunker Hill Community College	Electric Power Utility Technology Program

[118] The BOC Fundamentals of Energy Efficient Building Operations certification must be paired with one year of experience for an individual to be eligible for BOC's Level I training.

EPA 608 Universal Technician certification	Franklin Cummings Tech (BFIT)	HVAC&R Technology (Building Energy Management Concentration)
Fundamentals Certificate	Cape Light Compact, Eversource MA, National Grid, Energize CT and RI Energy	Building Operator Certification (BOC) Training Fundamentals
Fundamentals in Energy Efficient Building Operations (FEEBO)	PowerCorpsBOS	PCB Building Operating Systems
MA Grade I Treatment and Distribution Water Operator License	Bunker Hill Community College	Public Water System Operator
MA Grade III Municipal Wastewater Operator's License	X-Cel Education	X-Cel Conservation Corps (XCC)
MA State Pre-Apprenticeship certification	YouthBuild Boston	Pre-apprenticeship program
	Asian American Civic Association	Weatherization
	Building Pathways	Building Trades Pre-Apprenticeship Program
Marine Systems Technician Certificate	Bunker Hill Community College	Marine Technician
NORA bronze oil certification	Franklin Cummings Tech (BFIT)	HVAC&R Technology (Building Energy Management Concentration)
National Green Infrastructure Certification Program (NGICP)	Codman Square Neighborhood Development Corporation (CSNDC)	National Green Infrastructure Certification Program (NGICP)
	PowerCorpsBOS	PCB Urban Greening PCB Urban Forestry PCB Building Operating Systems
North American Board of Certified Energy Practitioners (NABCEP) PV Associate	RARE and Action for Boston Community Development (ABCD)	SHINE
	CWS (The Fedcap Group)	Apex Clean Energy Institute

Preventative Maintenance Technician certification	Franklin Cummings Tech (BFIT)	HVAC&R Technology (Building Energy Management Concentration)
R-410A high pressure refrigerant certification	Franklin Cummings Tech (BFIT)	HVAC&R Technology (Building Energy Management Concentration)
USGBC Green Professional (GPRO)	Roxbury Community College	Building Fundamentals
Very Small System (VSS) Water Operator License	Bunker Hill Community College	Public Water System Operator
Building Automation Systems (BAS) Fundamentals	Roxbury Community College	Building Automation Systems (BAS)
Weatherization Installer certification	Green Jobs Academy	Home Weatherization Installer Boot Camp
RRP Lead Renovator certifications (week 1)	Green Jobs Academy	Home Weatherization Installer Boot Camp
USGBC Green Professional - Operations and Maintenance (GPRO O&M)	PowerCorpsBOS	PCB Building Operating Systems

Locally Offered Certificates - Supporting Skills*

Certification/Degrees	Program Administrator	Training Program
CPR/First Aid/AED	PowerCorpsBOS	PCB Urban Greening
	PowerCorpsBOS	PCB Urban Forestry
	PowerCorpsBOS	PCB Building Operating Systems
	YouthBuild Boston	Pre-apprenticeship program
OSHA Confined Space	Green Jobs Academy	Home Weatherization Installer Boot Camp
OSHA-10	PCB Urban Greening	PowerCorpsBOS
	PCB Urban Forestry	PowerCorpsBOS
	PCB Building Operating Systems	PowerCorpsBOS
	Boston Civilian Climate Corps	Browning the Green Space
	Building Energy Efficient Maintenance Skills (BEEMS)	Asian American Civic Association
	Weatherization	Asian American Civic Association
	Building Trades Exploration	YouthBuild Boston
	Pre-apprenticeship program	YouthBuild Boston

	Home Weatherization Installer Boot Camp	Green Jobs Academy
	Building Automation Systems (BAS)	Roxbury Community College
	Electric Power Utility Technology Program	Bunker Hill Community College
	HVAC&R Technology (Building Energy Management Concentration)	Franklin Cummings Tech (BFIT)
	Apex Clean Energy Institute	CWS (The Fedcap Group)
OSHA-30	SHINE	RARE and Action for Boston Community Development (ABCD)
	Apex Clean Energy Institute	CWS (The Fedcap Group)
OSHA Hazwoper	Building Pathways	Building Trades Pre-Apprenticeship Program

* These certifications are used across all four priority climate sectors, especially for trade-adjacent work.

PART C.

Industry-Recognized Certifications

Appendix B.

GND Priority Area	Certification Name	Certification Description
Building Decarbonization	LEED Accredited Professional (LEED AP)	Proficiency in sustainable building design and construction.
Building Decarbonization	Building Performance Institute (BPI) Certifications	Various certifications related to Clean Energy and building performance, such as energy auditors and HVAC specialists.
Building Decarbonization	North American Technician Excellence (NATE)	Validates knowledge and skills in installing, maintaining, and servicing HVAC systems.
Building Decarbonization	High-Performance Building Operations Professional (HPBOP)	Certification for building technicians, engineers, and operators supporting high-performance commercial buildings focusing on energy conservation and health.
Building Decarbonization	Building Operator Certification (BOC)	Focuses on improving energy-efficient building operations, including HVAC system optimization and water conservation.
Building Decarbonization	USGBC Green Professional (GPRO)	Provides training in sustainable building construction, operations, and maintenance.
Building Decarbonization	NCCER Certification	Covers basic safety, rigging, and communication skills essential for construction management and technology fields.
Building Decarbonization	RESNET HERS Rater Accreditation	Focuses on assessing the energy performance of homes.
Building Decarbonization	FEEBO (Building Operator Certification)	Introductory course in energy efficiency for building operations and maintenance in commercial buildings.
Clean Energy	Certified Energy Manager (CEM)	Expertise in energy management, auditing, and efficiency improvements.
Clean Energy	Certified Renewable Energy Professional (REP)	Focus on renewable energy technologies such as solar, wind, biomass, and geothermal systems.
Clean Energy	Certified Energy Auditor (CEA)	Involves energy auditing and Clean Energy assessments.
Clean Energy	Certified Sustainable Development Professional (CSDP)	Covers sustainable development practices, Clean Energy, and environmental conservation.
Clean Energy	Certified Carbon Auditing Professional (CAP)	Focuses on carbon management strategies, including greenhouse gas emissions reduction and carbon footprint analysis.

Clean Energy	Certified Demand-Side Management Professional (CDSM)	Covers demand-side management strategies and Clean Energy initiatives.
Clean Energy	Certified Energy Procurement Professional (CEP)	Focus on energy procurement strategies and optimizing energy purchasing decisions.
Clean Energy	IGSHPA Accredited Installer Certification	Trains individuals to install geothermal heat pump systems.
Clean Energy	Certified Vertical Closed Loop Driller (CVCLD)	Specialized certification for geothermal drillers, validating expertise in constructing loop wells for ground source heat pump systems.
Clean Energy	NABCEP Certifications	Validates expertise in solar energy system design, installation, and maintenance.
Resilience and Nature	Envirocert Certifications	Related to environmental management, stormwater compliance, and sustainable water management.
Resilience and Nature	Chesapeake Bay Landscape Professional (CBLP)	Emphasizes sustainable landscaping and conservation landscaping with native plants.
Resilience and Nature	National Association of Landscape Professionals (NALP)	Covers hardscape and plant installation, landscape maintenance, and irrigation.
Resilience and Nature	International Society of Arboriculture (ISA) Certifications	Validates knowledge and skills in tree care and urban forestry.
Resilience and Nature	NEIWPCC Wastewater Operator Certifications	Administers certifications for wastewater plant operators and environmental compliance inspectors in Massachusetts.
Transportation	Electric Vehicle Infrastructure Training Program (EVITP)	Provides training for the installation of EVSE equipment, focusing on customer relations and customer satisfaction within the electric vehicle industry.