



## New Horizons Foundation Annual Meeting

Procore Corporate Headquarters and Hilton Santa Barbara Beachfront Resort  
Santa Barbara, CA | September 26-27, 2023

### Meeting Report

#### Tuesday, September 26, 2023

**1. Welcome – Guy Gast, NHF Chair (virtual attendance)**

Chair Gast called the meeting to order at 1:00 p.m. Pacific time and welcomed attendees. **A list of meeting attendees is attached as Exhibit A.**

**2. Procore Leadership**

Michelle Turner, Procore Senior Manager of Product Marketing, introduced Rajitha Chaparala, VP of Product, Data & AI at Procore (virtual attendance) who discussed Procore’s developing product work of applying AI enhanced technology to a host of construction processes contained in Procore’s software portfolio. She mentioned Microsoft’s developing “Co-pilot” chatbot as an example of generative AI where AI models can generate new content like images or answers to text inquiries based on data used to train them.

**3. Inflation Reduction Act Impact on Section 179D – Stan Kolbe, SMACNA Executive Director of Government and Political Affairs (virtual attendance)**

Mr. Kolbe discussed the background of section 179D and the impact of the Inflation Reduction Act. The Act contains provisions that extend existing tax credits for efficient construction and retrofits, wind, and solar projects. It would also allow project owners to receive a direct payment for their investments instead of a tax credit. **Mr. Kolbe’s outline and papers on the topic provided to meeting attendees can be found in the attached as Exhibit B.**

**4. SMACNA Update – Aaron Hilger, SMACNA CEO**

Mr. Hilger reported on the focus of SMACNA’s Strategic Plan Update and related association initiatives. He also discussed the continuing positive relationship with SMART, new SMACNA staff hires and assignments, a major project to revamp the association membership and financial management system, the geometric increase of participation in the Associate Member Program, and the 2023 SMACNA Convention in Phoenix.

**5. Update on 2023 NHF Projects and Product Delivery – Tom Soles, NHF Executive Director**

Mr. Soles updated attendees on the status of 2023 NHF projects identified below. Items a. and b. were published in the first and second quarters of this year. Projects identified as c. d. and e. are in progress and scheduled for first phase or final completion by year end. The last project, a VDC Time Study with the University of Washington is set to launch the second week of October.

- a. Managing Supply Chain Disruption
- b. A Comparative Analysis of Continuous Improvement Approaches Among Trade Contractors
- c. Targeting KPI and KPM Resources to Advance HVAC & Sheet Metal Contractor Initiatives
- d. Customer Focused Podcasts – Large Project Collaboration, Partnerships, The Value of Collaboration, IPD Delivery
- e. Workforce Development
- f. VDC Time Study

Mr. Soles discussed this year’s Customer Focused Podcasts (four of seven completed) and the six podcasts completed last year featuring SMACNA contractors discussing select NHF projects. He asked attendees if and how this foundation method of product delivery could be improved. Recommendations and suggestions included breaking the 50–60-minute podcasts into two sessions, and having the facilitator provide a quick take-away summary as both a conclusion part of the podcast and a promotional standalone piece for marketing purposes. Other comments related to NHF and communication of its work included developing a communications strategy for NHF, repeat effect messages, and applying infographics to select key issues in the 2022 Futures Study Update.

A discussion on the Workforce Development project was tabled until the Wednesday morning meeting when Clark Ellis will report on the project work to date.

## **6. Adjournment**

Having no further business to conduct, Chair Gast called for and received a motion to adjourn the meeting at 4:50 p.m. Pacific.

## **Wednesday, September 27**

### **1. Welcome – Angie Simon, NHF Vice Chair**

Vice Chair Simon greeted attendees and called the reconvened meeting to order at 8:00 a.m. Pacific.

### **2. Review/Approve Report of 2022 Annual Meeting**

Vice Chair Simon referred attendees to this meeting report in the workbooks and asked if there were any questions, corrections, or requests for clarifications. Hearing none, a motion was made, seconded, and approved to accept the report as presented.

### **3. New Project Proposals**

Mr. Soles discussed two new project proposals and referred attendees to these items in the meeting workbooks.

a. Safety Helmet Rating Project

This proposal was presented to NHF and the Gentile and ELECTRI foundations by Virginia Technical University (VT). Virginia Tech has extensive experience developing methodologies that evaluate protective headgear under real-world loading conditions and disseminating complex test results through overall ratings representative of expected injury incidence rates ([www.vt.edu/helmet](http://www.vt.edu/helmet)). The overarching framework for this work is the STAR Evaluation System, and VT has implemented this system for various helmet types, including bicycle, football, and hockey helmets. The STAR Evaluation System relies on two fundamental principles. First, helmets that lower head kinematics resulting from impact reduce injury risk; and second, real-world exposure data is used to weight testing conditions when summarizing overall performance. Overall, STAR integrates injury risk with exposure weightings to estimate injury incidence rates for a given helmet. The ANSI Standard on workplace protective headgear is ANSI/ISEA Z89.1-2014.

Meeting attendees questioned whether the Foundation was the appropriate entity to pursue this research and suggested that the iTi/SMOHIT evaluate its participation in this research. Mr. Soles will discuss this with iTi/NEMI/SMOHIT Executive Director, Dan McCallum.

b. Career Path Mapping Proposal

This proposal from Maxim Inc. was presented to NHF by SMACNA's Contractor Operations Committee. Ms. Julie Muller, Chapter Executive for the Western Washington Chapter, commented that this same topic was presented to her chapter as an educational program conducted by Stephanie McShane, and was highly rated. The discussions about the proposal concluded with a suggestion that SMACNA consider presenting this topic as part of its Chapter Education Program and not as a new NHF project.

**4. Workforce Development Project Presentation – Clark Ellis, Continuum Advisory Group**

Mr. Ellis presented a comprehensive slide-deck on Continuum's extensive research to date investigating 28 workforce development organizations. It was suggested that product deliverables include identifying separately what SMACNA chapters, member contractors and JATCs can do to address workforce development issues in their areas. **Mr. Ellis's presentation is attached as Exhibit C.**

**5. Administrative Updates – Tom Soles, NHF Executive Director**

Mr. Soles referred attendees to the following documents in the meeting workbooks noting that the 2022 Audit Report identified no deficiencies or concerns. It was also reported that total NHF investment returns through August 2023 were 7.95%.

- a. Audited Statement of Financial Position 2022 & 2021
- b. NHF Income & Expense Report (through August 2023)
- c. NHF Investment Manager Report and Update

**6. Next Meeting**

Vice Chair Simon requested recommendations for a location of the 2024 NHF Annual Meeting, and hearing none, she suggested Milwaukee, and more specifically a meeting at Milwaukee Tools Headquarters. Milwaukee Tools is a SMACNA Premier Partner. Staff will discuss with Milwaukee Tool.

**7. Adjournment**

Having no more business to conduct, Vice Chair Simon called for and received a motion and second, to adjourn at approximately 11:00 a.m. Pacific.

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**To: Tom Soles**  
**From: Stan Kolbe**  
**Subject: 179D Discussion**  
**Date: September 22, 2023**

## **Energy Efficient Commercial Buildings Deduction (179D)**

**Overview:** These newly enacted changes to Sec. 179D provide additional opportunities for taxpayers, **including as much as \$5.36 per square foot** (sq. ft.) in immediate deductions to encourage the construction of energy-efficient commercial buildings and multifamily buildings that are at least four stories tall.

In addition, certain provisions under the revised Sec. 179D expand the opportunity for energy efficient retrofits of older buildings to become eligible for the deduction, by reducing applicable requirements.

**Tax-exempt organizations** are also provided an incentive to make their facilities more energy efficient under the new provisions.

However, taxpayers must also be aware of added complexity under the new rules, including the requirement to meet certain prevailing wage and apprenticeship standards to achieve the maximum deduction.

The Energy-Efficient Commercial Buildings Tax Deduction originally **effective on January 1, 2023** (Treasury Rules Fall 2023) is a significant financial incentive geared towards:

- Building owners (commercial or multifamily)
- Tenants making improvements.
- Architects, engineers, and other designers of government buildings

- **Pre IRA –**

The permanent deduction allowed a first-year deduction of up to \$1.88 per square foot that would otherwise be depreciated over 27.5 (residential) or 39 years (commercial). 179D applied to commercial buildings at any height and residential rental buildings that are four stories or more above grade.

**IRA creates NEW Incentives and Rules:**

- Modifies formula for computing the maximum amount of the energy efficient commercial buildings deduction.
- Increases the deduction amount if new wage and apprenticeship requirements are met.
- Modifies the energy efficiency standard,
- Eliminates the partial deduction for property that does not meet the certification standard,
- Provides an alternate deduction for energy efficient building retrofit property.
- Applies for taxable years beginning after 2022.

**This deduction is a significant financial incentive geared towards:**

- Building owners (commercial or multifamily) REITs
- Tenants making improvements.



- Architects, engineers, design-build contractors and other designers of buildings owned by: Government entities.
- *Not-for-profit organizations - Churches and other religious organizations*
- *Native American Tribal organizations - Private schools and universities*

**Previously only available for commercial building owners and designers of buildings owned by government entities.**

The 179D originated to encourage taxpayers to make buildings more energy efficient by installing Energy Efficient Commercial Building Property (“EECBP”) when constructing a new, or improving and existing, commercial or government owned building.

- Taxpayer who owns or leases a commercial building to deduct the cost or a portion of the costs to install EECBP.

In addition, if the EECBP is installed in a government owned building, **the 179D deduction can be allocated to the person(s) primarily responsible for designing the EECBP.**

EECBP must be part of at least 1 of 3 systems:

- Interior lighting systems.
- **HVAC**, and hot water systems
- Building Envelope

**The following types of projects qualify for this deduction:**

- Newly ground up constructed buildings
- Additions to existing buildings
- Renovations in / retrofits of existing buildings
- HVAC Systems, interior lighting systems, or building envelope (roof, floors, walls, etc.)
- upgrades to existing buildings

### **Section 179D Calculation:**

The 179D deduction can now be up to \$5 a square foot depending on how the building system qualifies. Previously, the maximum deduction was \$1.88 per square foot.

**To qualify for this maximum amount**, companies must meet new prevailing wage and apprenticeship requirements.

- This expanded and increased deduction is for 10 years.

### **Section 179D Calculation**

- The base deduction is a sliding scale of \$0.50 per square foot for energy savings of 25% and up to \$1.00 per square foot for energy savings of 50% or greater.
- The bonus deduction is a sliding scale of \$2.50 per square foot for energy savings of 25% and up to \$5.00 per square foot for energy savings of 50% or greater.
- **Previously, only the base deduction of \$0.63 and \$1.88 per square foot were available.**

- With IRA, there is now a three-year cap on privately owned buildings that allows the deduction to be claimed on the same buildings as long as three taxable years have passed. (4 years if government owned). Previously was 1X per life of the building.
- For technical requirements, the applicable ASHRAE standard is now in effect from four years prior to completion on the construction (previously two years prior to start of construction).
  - Previously Fully Qualifying Property had a 50% savings requirement. Partially Qualifying Property: 10% -Envelope
  - 15% -HVAC and HW
  - 25% -Lighting
  - IRA brought the savings requirement down to 25%; with a sliding scale from 25-50% to reach the full \$5 per square foot.

\*\* This means that every % of cost reduction will have impact on deduction available.

### **How to recover tax benefits you missed? The Three-Year Rule...**

What if you were entitled to Section 179D deductions for energy-efficient improvements placed in service in a previous year, but you neglected to claim them at the time? Is it possible to recover the tax benefits you missed? Possibly.

### **Can I retroactively claim the 179D deduction? How far back?**

**Yes, you can retroactively claim the tax deduction for as far back as 2006** if you're a building owner. In order to do so, you'll have to file an accounting method change. Other entities retroactively claiming will have to file an amended tax return.

That said, you should claim the 179D deduction in the same tax year as to when the project is placed in service.

**There are two ways to claim missed Section 179D deductions.**

- **One is to report** them on an amended return for the tax year in question and seek a refund of the tax savings. The deadline for filing an amended return is usually three years from the filing date, so this is not an option for older projects.
- The **second** method is to file Form 3115, *Application for Change in Accounting Method*, and claim “catch-up” deductions in the current tax year. This method avoids the statute of limitations for amended returns, so conceivably you could use it to claim missed deductions going back to 2006.
- **A special provision for performance-based** qualification methodology will be enacted for retrofitting commercial buildings.
- **Commercial buildings will be able to be certified and claimed once every three years if privately owned and once every four years** if government owned and allocated to the designer.

**Very Important** - To claim the deduction, a taxpayer generally hires a third-party “qualified individual” (i.e., Professional Engineer) to energy modeling using IRS-approved software and issue a certification report, which is required.

- Verification needed that the energy consumptions has been reduced X% compared with minimum industry standard.
- The qualified individual then prepares a Certificate of Compliance to support 179D deduction.
- Surge expected in “qualified individuals” that offer certification services.
- The requirement to use an energy simulation model has now been removed.

**Example:**

An eligible 250k SF building, a \$470k deduction at the old 2022 rate now potentially increase to a \$1.25M deduction.

**Alternative deduction for retrofits**

Under prior law, the retrofitting of many older buildings was not eligible for the Sec. 179D deduction because the 50% energy savings threshold could not be met. The new law provides two amendments that make it easier for these retrofits to be eligible for a Sec. 179D deduction.

- **First, the sliding scale** discussed above under Sec. 179D(b)(2) provides a benefit for older properties that could only achieve the lower threshold of 25% or more in energy savings.
- **Second,** Sec. 179D(f) adds a new alternative deduction for retrofits that is elective on a **building-by-building basis**. Under this alternative, the level of energy usage, rather than the level of energy cost, is used to determine the extent the building is more energy efficient. To make this computation, the building's specific level of energy usage intensity (EUI) before the retrofit is measured against the building's EUI after the retrofit to determine a percentage reduction in annual energy usage. The same sliding scale described above is used to determine the amount of incentive allowed. The amount of this incentive is limited to the cost of the energy efficient property placed in service. **Using the building's own energy usage as a baseline helps taxpayers with older buildings that cannot meet the contemporary one-size-fits-all ASHRAE Standard 90.1 to qualify for a deduction.**
- **An alternative** requires a "qualified retrofit plan" that specifies the modifications to the building that are expected to reduce the building's EUI by 25% or more. **No governmental agency is required to review or approve the plan, although it must be certified by a professional (e.g., an architect or engineer).** Under this alternative, the Sec. 179D deduction is not taken when the property is placed in service but rather is

allowed one year later, upon the completion of a “final certification” establishing the percentage reduction in annual energy usage.

***Bottom Line Expectation:***

The new expanded 179D tax deduction will likely spur building owners to now make retrofits they previously deemed too costly, and subject to IRS scrutiny.

**Update**

**The IRS has issued Form 7205, a new form that will be required in order to claim the Section 179D deduction for property placed in service before January 1, 2023.**

- The instructions for the form can be found here - <https://www.irs.gov/pub/irs-pdf/i7205.pdf> and copy of the form can be found here - <https://www.irs.gov/pub/irs-pdf/f7205.pdf>. IRS will appreciate any feedback on the form.

**Second, the IRS released its 2<sup>nd</sup> Quarter update** to the 2022-2023 Priority Guidance Plan (PGP). This document lays out a number of guidance projects.

the IRS and Treasury hope to work on throughout the year (July 1 - June 30). You may recall that this year’s iteration of the PGP updates the Section 179D language.

and places it within the context of the Inflation Reduction Act: “Guidance under provisions of **Part 3 of Subtitle D of the Inflation Reduction Act addressing clean.**

**energy and energy efficiency incentives for individuals, including regulations under §179D to clarify the definition of designer and other issues.”**

**We anticipate additional guidance with respect to implementation of the IRA’s Section 179D provisions specifically will likely be released.**

## Stan's Talking Points Memo - SMACNA IRA Tax Incentive Overview –

Re: 9-2023

### What's in the new law?

Countless provisions will extend existing tax credits for efficient construction and retrofits, wind, and solar projects. It would also allow project owners to receive a direct payment for their investments instead of a tax credit.

- **A direct pay and tax credit transfer option** would provide greater financial flexibility, increased corporate cash flow, to reduce business financing needs.
- The legislation **extends and creates new tax credits for various efficiency / IAQ retrofits**, including wind, solar and transmission.
- **It expands the investment tax credit (ITC) and Production Tax Incentive (PTC)** program to include combined heat and power CHP), energy storage technology, biogas property, microgrid controllers, dynamic glass, and linear generators, according to the summary.
- **Tax credits would be created or extended for additional technologies and energy sources including nuclear energy**, hydrogen energy, biofuels plants and technology that captures carbon from fossil fuel power plants.

### Other highlights include:

- *Davis-Bacon Act and Registered Apprenticeships, Youth Apprenticeships, and Pre-Apprenticeships Standards, prevailing wages on private work Included.*
- **Provides special funding and program support for apprenticeship programs, pre-apprenticeship programs** that matriculate to registered apprenticeship programs, and youth apprenticeship programs.
- **Decarbonization of buildings and facilities reduction financing / leverage fund**, with a share going to disadvantaged urban areas and communities.
- **Grants for high-capacity transmission lines and for upgrading interstate interconnections** and improves grid transmission siting.
- Department of Energy and the Federal Energy Regulatory Commission, advance efficient and **expeditious permitting**.
- **Efficiency tax credits and decarbonization program incentives**, with Davis-Bacon and Registered Apprentices for facilities in the utility, commercial, industrial, residential, and public sectors.
- **SMACNA has long advocated for inclusion and passage of the following efficiency incentive priorities** as part of reconciliation or other identified legislative vehicles at the earliest opportunity: **They have all passed Congress and are now law!**

- **179D:** Temporarily expand the 179D permanent deduction **for ten years**, lifting the lifetime limit for a three-year cap, including for tax exempt entities. Provide a base deduction ranging from \$.50 to \$1.00 per sq. ft, with a bonus deduction of \$2.50 up to \$5.00 per sq. ft, when meeting prevailing wage and apprenticeship requirements added to address the skilled worker shortage in construction.
- **25C:** Extended 25C tax credit for **ten years**, eliminate the lifetime cap for the annual cap, and expand the value of the credit to 30% up to at least \$1,200 without limitation on energy property type, in addition to providing the same level of credit for investments for insulation as part of the building envelope.
- **45L:** Extend the 45L credit for ten years for single-family and manufactured homes to \$2,500 when meeting relevant Energy Star program requirements, or \$5,000 for those homes meeting the zero-ready home certification. Also provide a similar tiering for multi-family housing, based on Energy Star and zero ready home, with a base credit of \$500 or \$1,000, and a bonus credit of \$2,500 or \$5,000 when meeting prevailing wage requirements.
- **Hope for Homes:** \$12.5 billion in rebates for energy efficient residential technologies, including \$6.25 billion for HOMES rebates (**Fall 2023**) to homeowners for whole-house energy retrofit projects.
- **Home Retrofits and Workforce Training** - \$9 billion homeowner rebate program for whole-home retrofits includes funding for training and education for contractors.
- **Climate Bank:** \$12 billion for 2 years for competitive grants to charitable or public funded non-depository financial services non-profits that invest in projects singly or with other investors to provide capital (including leveraging private capital) for quick deployment of efficiency upgrades, low and zero-emission products, technologies, and services.
- **Efficiency Financing:** Also provide an additional \$8 billion for 2 years for competitive grants to charitable or public funded non-depository financial services non-profits that invest in projects singly or with other investors, to provide capital (including leveraging private capital) for the rapid deployment of low and zero-emission products, technologies, and services, specifically targeting financial and technical assistance in low-income and disadvantaged communities.
- **Critical Facility Modernization:** At least \$500 million in formula grants to states to provide financing and technical assistance for projects that improve energy efficiency and increase resiliency of critical public buildings, including but not limited to schools, local government buildings, and medical facilities.
- **Energy Codes:** \$1 billion to help states and localities adopt and implement strong building energy codes; one-third for jurisdictions adopting the latest model codes and two-thirds for those adopting codes to require zero-net-energy buildings.



- **GSA Energy Efficiency:** \$3.25 billion over five years for the purchase of goods, services, and systems to improve energy efficiency within the relevant GSA footprint.
- **DOE Loan Program:** \$40 billion in new DOE Loan Program guarantee authority, and \$3.6 billion for the cost of guarantees.
- **Section 48 ITC Combined Heat and Power ITC:** The base rate for the ITC top rate ITC technologies, is 6% with a bonus rate of 30% (5 times the base rate) and amends sec. 48 to include more technologies eligible for a 6% base credit, making CHP eligible for the bonus 30% rate.
- **ITC Prevailing Wage / Apprenticeship Requirements:** To earn the bonus rate for the ITC and PTC **taxpayers must meet two labor requirements:** prevailing wages and employment of apprentices. Taxpayers are not required to meet these requirements for small projects under 1 MW. The base amount for the PTC or ITC is multiplied by 5 for facilities meeting the labor standards requirements like those spelled out in the PTC. Additional penalties are imposed for intentional disregard of these requirements.
- **A \$6.25 billion home electrification program** would provide rebates to homeowners who replace fossil-fuel-fired appliances with new electric appliances. For example, homeowners could swap out a fossil fuel furnace for an electric heat pump, or they could ditch a gas stove for an induction cooktop.
- **Another \$6.25 billion home energy efficiency program** would also dole out additional rebates to homeowners who make energy efficiency retrofits, such as by adding insulation or installing solar panels. The related workforce program would also provide funding to train contractors to do this type of retrofitting.
- **A \$500 million critical facility modernization program** would provide a record amount of money that schools, or municipal buildings could dip into to reduce their energy use.

#### **Energy Efficiency Upgrades with Decarbonization Program Funds/Tax Cuts**

- A **\$1 billion energy code reform grant program** at the Department of Energy would help states and municipalities adopt the latest or better building codes, as well as **zero-energy building codes**.
- **Federal Buildings – funds and financing for upgraded filtration and ventilation systems** helps to protect the public and workers from COVID-19 and other public health threats hazards now and in preparation and defense against future pandemics.
- **Inflation Reduction Act - Over a decade the Act would achieve significant energy and economic benefits, including avoiding 341 MMT of carbon emissions, securing \$53.3 billion in energy cost savings, and creating 520,128 new jobs. 40 percent reduction in carbon!**

- 179D energy-efficiency credits for commercial retrofits. [Section 179D deduction](#).
- **It currently allows a building owner to take a \$1.80 per-square-foot deduction for energy-efficient building components meeting a 50 percent energy savings reduction or more on a covered retrofit.**
- The deduction recently was **made permanent this Congress**, but the Wyden amendment replaces the current deduction with a sliding scale that takes effect when a taxpayer makes an efficiency improvement of at least 25% over a baseline set in ASHRAE standard 90.1.

**The incentive would rise as efficiency rises as SMACNA long endorsed and advocated.**

**Special Tax Focus – SMACNA’s Draft Views on the IRS Tax Credit Direct Pay and Transfer proposed rules. The Inflation Reduction Act of 2022 (IRA), Public Law 117-169, not only introduced a range of new and enhanced clean energy-related tax credits, but also created **two new ways for taxpayers and tax-exempt entities to monetize these credits.****

- First, under Section 6417, tax-exempt and government entities (and for certain credits, taxable entities as well) can elect to receive tax credits as a fully refundable payment.
- Second, under Section 6418, non-tax-exempt taxpayers can elect to transfer all or a portion of tax credits to unrelated parties for cash.

#### **SMACNA Early Look / Final Draft Views**

- **SMACNA fully supports the IRA, including but not limited to the Direct Pay Provision (Section 6417) and Transferability Provision (Section 6418).**
  - Before the IRA, it was not possible to monetize federal tax credits generated by renewable energy projects outside of tax equity financing structures. The intent behind the transferability and direct pay provisions is that they will allow for new investors to enter the market. This will allow for more stakeholders to use the credits to finance a greater variety of facilities more quickly and more affordably.
- **SMACNA supports an expansive definition of “applicable entity,” including both private non-profit entities and public entities, including: school districts, public utility districts, and special purpose entities established by governments (such as joint action agencies, economic development corporations, and joint powers authorities).**
- **SMACNA supports clear and transparent standards to ensure a robust market for clean energy tax credits.**
- **SMACNA endorses that the applicable tax credit and any eligible bonus credit amounts (e.g., for prevailing wage and apprenticeship, domestic content, energy communities, and low-income communities) are eligible for direct payment.**
- **SMACNA argues that the final rule should make clear that there will be no waiver for labor standards, including prevailing wage and apprenticeship standards.**
  - “Bonus credit amounts” should only be available if the transferor complies with the applicable labor standards, and failing to comply with labor standards should result in “recapture” of “bonus credit amounts”.
- **SMACNA supports the proposed rule’s authorization of “broker arrangements” because this will expand the market for clean energy tax credits.**

# Workforce Development for the 21<sup>st</sup> Century

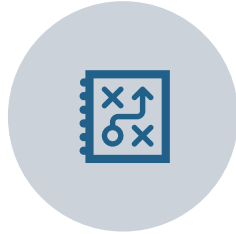
Developed for the New  
Horizons Foundation

September 27, 2023

The logo for Continuum Advisory Group is centered within a large white circle. It features the word "CONTINUUM" in a bold, blue, sans-serif font. To the right of "CONTINUUM" is a dark grey right-pointing triangle. Below "CONTINUUM" and the triangle, the words "Advisory Group" are written in a smaller, grey, sans-serif font.

**CONTINUUM** ▶  
Advisory Group

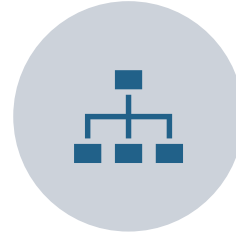
# This Document is Organized into the Following Sections



PROJECT OBJECTIVES



WHAT DO WORKERS WANT AND NEED IN THEIR CAREERS?



HOW TO DETERMINE THE EFFECTIVENESS OF WORKFORCE DEVELOPMENT PROGRAMS



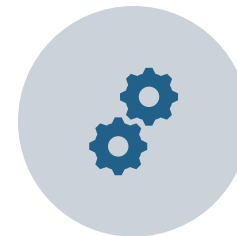
EXAMPLES WE THINK SHOULD BE HIGHLIGHTED



COMPLETE LIST OF EXAMPLES WE HAVE FOUND SO FAR



THIS PROJECT'S NEXT STEPS



CONSIDERATIONS FOR THE NEW HORIZONS FOUNDATION TO CONTINUE SUPPORTING WORKFORCE DEVELOPMENT

# Workforce Development Research Project Objectives



Identify and validate a set of 5-7 distinct Workforce Development practices that can be adopted by various entities in the Sheet Metal, Construction, and other relevant industries, to improve the participation, diversity, and productivity of the workforce.



Document these practices in video, audio, and other visual and written media.



Curate the content and create educational experiences for stakeholders in the industry.

# What do Workers Want and Need in their Careers?

**CONTINUUM**   
Advisory Group

## What's different about today's young members of the workforce?

- ▶ Interest in Diversity, Equity, and Inclusion (DEI) and Environmental, Social, and Governance (ESG) when weighing career opportunities.
- ▶ There are significantly fewer Gen Z members than Millennials, but more than Gen X.
- ▶ They are the most diverse generation in US history with more than 49% “non-white.”
- ▶ Employees currently rate mental health support as important at a higher rate than in past studies.
- ▶ A lower proportion of Gen Z believes they are fairly compensated (69%) than Gen X or Millennials.
- ▶ Gen Z are 32% more likely than Millennials to leave a job, and twice as likely as Gen X.
- ▶ Flexibility in work times, venues, and rules is valued by prospective workers.



## What does the current generation of workers want in the job itself?

- ▶ Training and development opportunities are highly valued.
- ▶ Multiple options in terms of specific jobs and roles are important.
- ▶ Technology integration into work is important. Gen Z are the first generation of “Digital Natives” who have had tech in their lives from the beginning.
- ▶ Information about the job and training to be delivered as needed and in “bite-sized” bits that can be absorbed quickly. Clear concise visuals are important.
- ▶ Mentors who can help them get integrated quickly as they start their job and others who may be able to help them to choose areas of focus or visualize their next steps.

## What are some characteristics unique to the next generation of workers?

- ▶ Social skills that leaders may consider “basic” will need development.
- ▶ Physical skills and experience are generally lower than prior generations. Few Gen Z workers have spent time doing physical labor around their homes and yards or playing outdoors as children.
- ▶ Gen Z workers place a higher value on psychological safety on the job than prior generations.
- ▶ Generally, they are more focused on maintaining a balance between personal and career development and priorities – more motivated by time off than overtime, for example.
- ▶ They expect to have a voice in workplace decisions.

# How to Evaluate the Effectiveness of Workforce Development Programs

## It Takes A Village



# Research Contacts

Industry	Organization	Skills
Construction	TradesFutures	Multiple Trades
	Sheet Metal Union – Florida	Sheet Metal
	Peoria Educational Region For Employment and Career Training	Carpenters, Brick Layers, Electricians, Iron Workers
	Brothers Keepers	Carpentry
	BOOTS (Bridging Outstanding Opportunities with Tradeswomen Skills)	Carpentry
	Career Connection Program	Carpentry
	YouthBuild	Construction and Leadership
	Electrical Training Alliance of Jacksonville	Commercial / Industrial Electrical Technology / Voice-Data-Video Technology
	Northeast Builder’s Association	HVAC, Sheet Metal, Plumbing, Carpentry
	United Association	Pipe Fitters
	Construction Industry Training Council	The majority of construction trades
	Atlanta North Georgia Building Trade Council (ANGBTC)	The majority of construction trades
	National Center for Construction Education and Research	The majority of construction trades

# Research Contacts

Industry	Organization	Skills
Manufacturing	Society of Manufacturing Engineers (SME)	Welding, Robotics, Machining and Fabrication, or Industrial Maintenance
	Florida Advanced Technological Education Center	Any Aspect of Manufacturing including the Trades
	Manufacturing Academy	Math for Manufacturing, Blueprint Reading, Lean Manufacturing, Effective Communication, Resume Writing, Interviewing and Job Application Assistance
	Manufacturer's Research Center	Any Aspect of Manufacturing including the Trades – Video Competiton
Aviation	Aviation Joint Apprenticeship	10+ occupations in Aviation
Health	HCAC	Medical Assistant, Sterile Processing, Pharmacy Technician, Behavioral Health Technician, Substance Use Disorder Professional

# Research Contacts

Industry	Organization	Skills
Workforce Development	SkillsUSA	10+ occupational areas. Construction includes Architectural Drafting, Building Maintenance, Cabinetmaking, Carpentry, Electrical Construction Wiring, Heating, Ventilation and Heating, Masonry, Plumbing, Sheet Metal, Welding Fabrication
	Champaign County Workforce Regional Planning Commission (CCRPC) – Workforce Development	All business in Champaign, employers from multiple industries are engaged to develop curriculum
	AIR/CompTIA Apprenticeship for Technology	Cybersecurity Support Technician, Data Analyst, Network Support Specialist, Technology Project Coordinator
	CareerWise of Colorado	Business Operations, Financial Services, Advanced Manufacturing, Information Technology

# It Takes a Village – Build Relationships with Multiple Influencers

All of the workforce development organizations (WDOs)\* researched believe it is imperative to develop relationships with a wide variety of influencers well before potential apprenticeship applicants graduate from high school. In many cases, continued support is required to ensure program completion.

WDOs: this includes organizations that create curriculums (SkillsUSA, SME, TradesFutures) for others, (e.g., Unions) to use, Unions themselves, and Trades Associations offering or working with an apprentice program.

## Strong Influencers

- ▶ Schools
  - Teachers
  - Counselors
  - Curriculum Developers
- ▶ Partners
  - Retail
  - Service
- ▶ Parents
- ▶ Employers

## Strong Influences On...

- ▶ Middle School
- ▶ High School
- ▶ Apprentices

# Typical Issues in Providing Student Access to Trade Skills/Jobs

## Middle School Student Needs

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- ▶ Middle schoolers can only name 9 jobs.
- ▶ Trades are not one of the jobs kids think of as a job.
- ▶ Middle school children do not choose careers at this age. However, they do decide what they don't want to do.

## High School Student Needs

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- ▶ Many High schoolers are ignorant of the Trades. Many schools have removed shop-type classes, eliminating exposure to trade skills.
- ▶ Dropouts need assistance with continuing education and finding job opportunities.
- ▶ High school students are still barraged with the message they must get a college degree in order to succeed.
- ▶ The cost of a 4-year degree has increased 70% over the past 20 years and continues to rise.
- ▶ Parents don't believe that Trades offer lucrative jobs and exciting career paths.
- ▶ Help in thinking about a career path, not just a job.
- ▶ Financial assistance and Transportation assistance may be needed.
- ▶ Soft skill training: leadership, interview skills, resume writing.



## Exposing Middle Schoolers to the Trades

### To Generate Awareness Among Middle Schoolers

- ▶ **SME** runs summer camps for middle schoolers introducing them to manufacturing and the Trades. They also participate in 8<sup>th</sup> grade school orientations.
- ▶ **Peoria Educational Region for Employment and Career Training** provides grade schools with fun quizzes so children can self-identify their likelihood to enjoy skills required for Trade jobs.
- ▶ **Manufacturers Resource Center in PA** has 8<sup>th</sup> grade middle school students compete in a statewide competition each spring to produce the best video about the benefits and opportunities of working in manufacturing as a career. Students compete regionally before competing on a statewide level. A national panel of judges selects the winners.
- ▶ **SkillsUSA** built an Avatar video game for kids. The objective is to dress and outfit your Avatar for working in a particular trade. SkillsUSA is also working on an interactive virtual reality video of worksites.

# Assisting Schools in Teaching Trade Skills

- ▶ Given the virtual elimination of high school shop classes in the past decade, many WDOs are working with High Schools to develop curriculums in support of the Trades.
- ▶ In general, contacts indicate Careers in Technical Education (CTE) certified schools are more receptive to adopting Trade-based curriculums.

*"We go into high schools and build out manufacturing and engineering programs by providing curriculums from equipment to professional development." – SME*

- Some curriculums are designed to simply generate interest in the Trades.
  - Several prepare students for an apprenticeship.
  - Others allow high school students to finish the 1<sup>st</sup> year of apprenticeship classes and begin their actual apprenticeship program in 2<sup>nd</sup> year courses with 2<sup>nd</sup> year pay.
- ▶ Several workforce development organizations have developed support materials for teachers.
    - SkillsUSA and SME developed support materials for teaching instructors how to teach Trade skills.
  - ▶ Contractors and WDOs achieve great success when giving in-depth tours of exciting worksites to High School personnel.
    - Teachers are better able to relate to and understand their student's interest in Trade careers.
    - *"Tours demonstrate the math and technology skills required for the Trades which creates a great impression among teachers." – SME*
  - ▶ Workforce Development personnel attend teacher conferences to build networks and stay apprised of education trends.

# WDOs Work to Persuade Parents of Trade Career Benefits

- ▶ The majority of trade organizations contacted stressed that parents are a very important influencer in a child's continuing education and career choices.
- ▶ Parents still believe their children must have some sort of degree to succeed in the workforce.
  - Nearly 100% of all organizations we spoke with offer apprenticeship graduates' certification that is recognized at the state or national level by employers and/or future educational schools (e.g., college credits).
  - FLATE has developed a program that earns students an Associate Degree while simultaneously completing high school. This program wasn't developed to appease parents, but it has become a successful message with them.
- ▶ It is essential to communicate to parents and future apprentices the financial benefits of Trade careers.
  - No debt from college.
  - Apprentices earn while they are going through the apprenticeship program.
  - Compare average salaries between Trades' careers and those of college graduates. For example, the Electrical Training Alliance in Jacksonville keeps this information updated on the front page of its website.
    - The average salary for college grads in their first year in the workforce is \$50-52k, while Electricians average \$64-82k.
- ▶ One organization positions the apprenticeship program as offering scholarships even though it is free.
  - *"Parents want bragging rights. Every parent is proud to say their kid got a scholarship."* – ANGBTC
- ▶ Provide a venue for parents to "see" the Trades in action – either in a showroom or at a worksite in the community, or parent's night at camp. (SME)

# Business Partners Provide Financial Support

- ▶ Several organizations have established relationships with retail and service organizations to fund apprentice needs:
  - Child Support for parents (contacts point out both male and female)
  - Food
  - Work Clothes
  - Books required in the apprenticeship programs
  - Laptops (HCAC – medical program)
- ▶ SME provides \$1 million in scholarships annually to students pursuing continued education.
- ▶ Students from low-income neighborhoods, where some families rely solely on public transportation, don't have a way to get a driver's license.
  - In some cases, personnel working in the apprenticeship programs will use their own cars to teach students how to drive.
  - ANGBTC partners with a 3<sup>rd</sup> party that supplies cars and Driver Education teachers to disadvantaged students.
- ▶ Getting to and from work can be an issue. Several WDOs provide some combination of the following:
  - Bus and public transportation passes
  - Car Dealerships and Police forces in Atlanta are donating used cars to ANGBTC
  - A few contractors are donating used vehicles for their apprentices to use to get work and class

## Relationships with Regional Employers is Key

- ▶ Some WDOs hire personnel whose sole job is developing relationships in the area with multiple entities including contractors.
- ▶ Contractors are sponsors:
  - The number of apprenticeships possible in a region is highly correlated to contractor participation and demand for apprentices.
  - Apprenticeship program growth is dependent on the amount of construction work in the area. Maximizing contractor relationships means more apprenticeship “spots.”
- ▶ Contractors can contribute to Trade communication strategies:
  - Some contractors currently visit middle and high schools, however, WDO contacts tell us they want to go once a year.
  - WDO personnel work with contractors to help develop presentations that are effective.
  - WDO personnel also work to convince contractors that they need to be in schools 4-8 times a year to be effective.
- ▶ More than 75% of the organizations contacted seek assistance from employers in designing course work for apprenticeships, as well as activities that help generate awareness of the Trades.

# Additional Target Markets

## Women

- ▶ Women make up only 2% of the Trades workforce. Most contacts claim:
  - They are attempting to recruit more women
  - Attempting to provide at least some of the following services:
    - Childcare, Financial Assistance, Work Clothes, and Transportation
- ▶ ANEW and National Association of Women in Construction are dedicated to improving the access and advancement of women in non-traditional career pathways such as construction and manufacturing.

## Prison Populations

- ▶ Florida LATE and TradesFutures are examples of organizations that have developed apprenticeships (and pre-apprenticeships) for prisoners.
- ▶ Contacts pointed out that ex-prisoners sometimes have a difficult time getting a job because some employer's hiring regulations preventing them from being employed.

## Military

- ▶ The most common tactic for pursuing ex-military personnel is attending job fairs specifically for those leaving the military.

## Disadvantaged Kids

- ▶ YouthBuild



# Success Factors

- ▶ Communication Strategies
- ▶ Excellence in Execution



# Successful Communication Strategies

## Typical Messaging

- ▶ Earn to learn – get paid while you are in school versus college.
- ▶ No College Debt – graduate with no debt versus huge debt to pay for college.
- ▶ Improved (and in some cases guaranteed) chances of getting a job upon completion.
- ▶ Earn certifications/degrees recognized at least regionally, if not nationally.
  - Even some pre-apprentice programs award certificates, such as GED, OSHA, and NCERR

## Advertising

- ▶ Across all research contacts, advertising is not a frequent tactic for communication. However, when advertising is used, it is:
  - Regional radio and TV spots
  - Targeted towards parents, not just prospective students
- ▶ The majority of organizations contacted attended job fairs: high school, military, and community.

## Website/Social Media

- ▶ Several research contacts discussed the importance of short, impactful videos. A few organizations are using 3<sup>rd</sup> parties such as Union Up and Transfr to create content for the Internet.
- ▶ The majority of research contacts use Social Media. Facebook pages are common. Instagram is used by a few (e.g., SkillsUSA).



# Successful Communication Strategies

## Working with 3<sup>rd</sup> Parties with Similar Goals

- ▶ TradesFutures encourages organizations that license its program to connect with local Boys and Girls Clubs and the Urban League to generate awareness.
- ▶ CCRPC develops relationships with organizations with a similar purpose, including regional non-profits, and religious and social organizations.

## Events

- ▶ Camps from 1-day to several weeks are a way to attract prospective students and parents.
  - They often include a parent's night to communicate the benefits of Trade occupations.
  - Camps are sometimes used to "prescreen" kids' readiness for pre-apprenticeship programs.
- ▶ Community events
  - WDOs, including Unions, hold events at actual worksites, or simulated areas at Union/Association Halls or large, rentable community locations.

# Successful Communication Strategies

## Conferences

- ▶ Many research contacts indicated they rely on conferences to create relationships with teachers and, sometimes, to generate relationships between teachers and employers.
- ▶ SME holds 1-day "summits" for high schoolers at conferences that include: keynote speakers, hands-on competitions, technology demonstrations, and guided show-floor tours of exhibiting manufacturing companies. Conferences include:
  - Smart Manufacturing Experience
  - SMART Manufacturing
  - Rapid-+TCT
  - Eastec
- ▶ SkillsUSA holds regional and national conferences to showcase their programs, and to hold competition for skills and leadership.
- ▶ Virtual Reality exhibits are a huge success among middle and high school students.

# Successful Communication Strategies: Leveraging Sports Teams

- ▶ Several organizations try to recruit students that are avid sports followers or have played team sports because:
  - “They have ‘worked’ in the sun.”
  - “They understand what it means to be a team player.”
  - “They are used to being yelled at.”
  - “They know you have to show up on time and...”
  - “...understand you have to have the right attire.”
  
- ▶ ANGBTC has invested heavily in sports.
  - They make significant financial investments in televised high school football games showing ads created by the council.
  - They have a van with Georgia Construction Careers on the side, which is the backdrop for all the game commentary.
  - They partner with Union Up, a media company that specializes in Unions, for all TV advertising and other forms of media.
    - They created a series of ads using the names of Football penalties to demonstrate Trade protocols such as safety first, too many people on the field, etc.

# Findings on Excellence in Execution of Workforce Development Programs

## Regional Operations are Typical

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- ▶ Several contacts mentioned they focus on growing geographic areas since the number of apprentices they can accommodate is directly correlated with the amount of construction work in an area.
- ▶ Even large, national WDOs deploy regional programs that are customized to each geographic area:
  - School Presentations
  - Messaging and Advertising – radio, TV
  - Community Events
- ▶ In fact, many of the organizations that create curriculums for schools and specific industries customize learning content for individual, regional clients (aviation, medical).

## Typical Job Roles

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- ▶ Personnel who are responsible for one or more of the following:
  - Relationships with middle and high schools, employers, surrounding local colleges, etc., which can include traveling to teacher and industry conferences to identify trends and emerging needs.
  - Providing teachers experience in what skills construction employers need and providing construction employers insight into the world of middle and high schools.
  - Curriculum development (excluding Unions and some Associations), which in some cases includes personnel with Masters or PhDs in education or a teaching background.
  - Running competitions, community events, and camps.
  - Managing pre-apprenticeship programs.
  - Several organizations, especially those related to Construction and Manufacturing, employ program graduates as teachers.

# Successful Execution: Other Points of Interest

## Finding and Vetting Students – YouthBuild

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- ▶ YouthBuild and Peoria Educational Region for Employment and Career Training instruct high school teachers on how to identify students who may be suitable for the Trades.
- ▶ Once in the program, a YouthBuild candidate is interviewed for potential acceptance into a 2-week “Mental Toughness” boot camp where they are prepared for a 6-month pre-apprenticeship program. If a candidate is not deemed ready to go into the pre-apprenticeship program, he or she will receive additional coaching to be eligible for a later entrance date.
- ▶ CCRPC develops relationships with organizations with a similar purpose, including regional non-profits, and religious and social organizations.

## Foundational/Additional Skills

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- ▶ Math: At least 50% of the organizations contacted indicate they stress math skills in their programs.
- ▶ Leadership: SkillsUSA holds national leadership competitions, including students from regional chapters throughout the US.
- ▶ Resume Writing: More than 50% of programs develop skills in resume writing and/or interviewing skills.

# Successful Execution: Other Points of Interest

## Follow Up After Graduation

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- ▶ YouthBuild follows up on its graduates for 1-year after completion of the pre-apprenticeship. It is a condition of their grant.
- ▶ HCAC requires a post-graduation service commitment.

## Mentors for Apprentices

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- ▶ YouthBuild mentors work-to-assist students in getting into and excelling in the apprenticeship programs.
- ▶ HCAC places a mentor in each employer organization to support apprentices.

# Growth and Measures of Success

## ► Program Growth

- The majority of programs, especially construction and manufacturing, described the difficulty in setting growth goals for the future. The number of "student spots" they have open is wholly dependent upon the number of jobs in the area. Hence, whatever they are told by employers about future needs is what they target for growth.
- Several claim that they look several years out based on employers' lists of multi-year projects. However, these contacts were also quick to point out that long-term forecasts were rarely 100% accurate.

Measures of Success	
Enrollment	Majority of organizations
Certificates Awarded	Majority of organizations
Job Placement	Only a few, as most organizations have no impact on the number of jobs available
Stay in Trade Post Grad	Only two organizations: high school pre-apprentice and medical training
Positive Trade Perceptions	Used among dropouts and a few pre and post perceptions following course graduation
% of Enrolled vs. National Average	Most of the contacts target women; only one contact measures the percentage of women students vs. the national average
Recidivism	Used when looking at the success of prison programs
Reading Scores	Used when working with high school dropouts
ROI	Medical (HCAC) only



**Examples we  
Think Should be  
Highlighted**





# Reasons for Highlighting these Practices and Programs



Contractors are able to either unilaterally implement or are positioned to lead and drive the implementation of these practices and programs



They focus on bringing participants into the building trades from under-represented groups: women and minorities



They have all demonstrated tangible success currently and in the recent past

# Building Trades

Name / Website	Established	Sponsoring Organization	Partners
Heavy Metal Summer Experience <a href="https://www.hmse.org/">https://www.hmse.org/</a>	2021	Heavy Metal Summer Experience	<ul style="list-style-type: none"> <li>• SMACNA, SMART, MCAA, UA</li> <li>• Various MEP Contractors in the US and Canada</li> </ul>

Description	Structure
<p><b>Target:</b></p> <ul style="list-style-type: none"> <li>• High school and recent high school graduates ages 15-19</li> </ul> <p><b>Program:</b> Heavy Metal Summer Experience (HMSE) introduces high school students and recent graduates (ages 15-19) to careers in the building trades through hands-on projects, working alongside craft professionals, and discovering local apprenticeship training opportunities. Heavy Metal Summer Experience seeks to introduce young people to living-wage careers in the building trades. By normalizing skills-based apprenticeships as a post-secondary education option, HMSE hopes to create workforce diversity and entice the next generation of craft workers.</p>	<ul style="list-style-type: none"> <li>• Heavy Metal Summer Experience introduces high school students and recent graduates (ages 15-19) to careers in the building trades through hands-on projects, working alongside craft professionals, and discovering local apprenticeship training opportunities.</li> <li>• Heavy Metal Summer Experience is a 501c(3) incorporated company and is made possible by a dedicated group of working craft professionals, vendors who donate tools and PPE, and contractors across the country eager to open their shops and facilities to host a camp and introduce students to the building trades.</li> </ul>

**Growth/Future Plans:** HMSE has grown very quickly, from two contractor-hosted programs in 2021 to more than 20 programs in 2023, hosted by contractors and union training centers across the US and in Ontario, Canada. The program plans to continue expanding in the mechanical trades and begin working with the electrical trade in the future.

# Trades

Name / Website	Established	Sponsoring Organization	Partners
Bridging Outstanding Opportunities with Tradeswomen Skills (BOOTS) <a href="https://www.swmsctf.org/programs-partnerships/bridging-outstanding-opportunities-with-tradeswomen-skills/">https://www.swmsctf.org/programs-partnerships/bridging-outstanding-opportunities-with-tradeswomen-skills/</a>	7 years old	SW Mountain States Regional Council of Carpenters	The Training Fund

Description	Structure
<p><b>Target:</b></p> <ul style="list-style-type: none"> <li>• 18+ female (a 17-year-old requires a parental signature in order to participate)</li> <li>• When the program began, it originally targeted African American females but has grown to become a program for disadvantaged females in general</li> </ul> <p><b>Program:</b> BOOTS is a 4-week pre-apprenticeship program designed to assist disadvantaged females through hard work to develop a career in the carpentry trade. The BOOTS program is currently limited to the Los Angeles area only.</p>	<ul style="list-style-type: none"> <li>• 4-week pre-apprenticeship program designed to assist disadvantaged females to develop a career in the carpentry trade</li> <li>• Offers carpentry training and job placement assistance</li> <li>• Program is currently limited to the Los Angeles area only</li> <li>• The BOOTS pre-apprenticeship consists of:                             <ul style="list-style-type: none"> <li>• 1-day evaluation/boot camp (monthly) – an intro for the youth and screening by BOOTS; an informal evaluation of the candidates plus a physical evaluation. They are looking for youth who have some get-up-and-go and will stay with the program.</li> <li>• 4-week training program – the goal here is more vetting and some hands-on training before placement in an apprenticeship. They are looking for those who have possibilities and will stay with the trade. Generally, OSHA training and material handling as well as material identification. "When they go to an apprenticeship, they are not as green as when they arrive."</li> <li>• Placement in an apprenticeship program with a contractor for a full 4-year apprenticeship.</li> </ul> </li> </ul>

**Growth/Future Plans:** This program is already a mirror of the Brothers Keepers program.

# Trades

Industry	Name / Website	Established	Sponsoring Organization	Partners
Trades	Pathway to Building Trades Forest Avenue Outreach/ <a href="http://www.forestaveoutreach.org/programs/pathway-building-trades">www.forestaveoutreach.org/programs/pathway-building-trades</a>	In the last decade	Central IA Building and Construction Trades	<ul style="list-style-type: none"> <li>• UA Local 33 of Des Moines, IA</li> <li>• Carpenters Local for Des Moines, IA</li> <li>• Habitat for Humanity</li> </ul>

Description	Structure
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**Target:**

- Teenagers from at risk groups, mostly urban

**Program:** This hands-on, “earn while you learn” program introduces Des Moines area teens to the Building Trades through a summer long Apprenticeship Readiness Program. Much like a true registered apprenticeship, there is a blend of classroom and jobsite. Career Exploration: Through partnership with Central Iowa Building & Construction Trades, the Multi-Craft Core Curriculum (MC3) exposes teens and young adults to an introduction to a variety of building trades. This program focuses on building a pathway into the building trades for underserved and disadvantaged youth to bring diversity to the Building Trades, and support applicants along that path. We are proud to create gender and racial equality in the workforce, while opening opportunities for Des Moines youth.

- Field Trips: We tour Local Union Apprenticeship training centers, experiencing hands-on introductions to each skilled trade, while meeting experts and apprentices. We visit jobsites, hear from guest industry speakers, and explore the career opportunities for everyone in the building trades.
- Hands-On Experience: Habitat for Humanity will host our hands-on work, as will visits to the shops at apprenticeship training centers.
- Certificate: Through MC3, participants will receive OSHA 10, First Aid / CPR training and graduate with an industry-recognized credential and certificate.
- The model combines Risk vs Reward, earn-while-you-learn, and S.O.S. (Services, Opportunities, and Supports) from positive youth development

**Growth/Future Plans:** Continue to support and increase participation in the program.

# Trades

Industry	Name / Website	Established	Sponsoring Organization	Partners
Trades	MC3 Trade Education for High School Students – SE Polk High School <a href="http://centraliowabuildingtrades.org/mc3">centraliowabuildingtrades.org/mc3</a>	In the last decade	Central IA Building and Construction Trades Council	<ul style="list-style-type: none"> <li>• Building trades unions</li> <li>• SE Polk HS</li> <li>• NABTU</li> </ul>

Description	Structure
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**Target:**

- High School Students who may be interested in learning about careers in the trades and in developing trade skills

**Program:** NABTU Multi-Craft Core Curriculum has been adopted by the high school, it is based on trade union apprenticeship programs. Welding school has been set up and is working well.

Exposure to 16 different skilled trades and industry awareness: Tours of area Registered Apprenticeship training facilities, Construction math and test preparation, Introduction to tools, materials, and blueprint reading, Recognized multi-craft core curriculum (MC3)

OSHA 10 safety certification, Communication, time management, financial literacy, and interview skills, Improved chance of acceptance into a paid registered apprenticeship training program, Connections to apprenticeship training coordinators; and Support toward success in completing apprenticeship training

- Trade education is offered at SE Polk HS for students in the public school system in Des Moines
- The students learn the basic skills of multiple trades so that they are prepared to apply for apprenticeship opportunities upon graduation
- The program has developed a “Weld-Off” competition for high school students from all over the area. Efforts have been made to include rural as well as inner-city students. The competition has been in effect for 8 years and more than 100 students compete. They are given a basic welding assignment and their work is judged by 8 independent judges.

**Growth/Future Plans:** Continue to increase student participation in the program and grow the program to other high schools. .

# Trades

Industry	Name / Website	Established	Sponsoring Organization	Partners
Trades	Building Advancement Externship Program/ <a href="http://www.constructingma.org/agc-ma-building-advancement-externship/">www.constructingma.org/agc-ma-building-advancement-externship/</a> .	2021	MA AGC	<ul style="list-style-type: none"> <li>Public Schools in MA</li> <li>Various building trades unions and contractors</li> </ul>

Description	Structure
<p><b>Target:</b></p> <ul style="list-style-type: none"> <li>High School Teachers as influencers for High School Students who may be interested in learning about careers in the trades and in developing trade skills</li> </ul> <p><b>Program:</b> The Building Advancement Externship was created by the AGC MA Workforce Development Task Force to enrich both vocational and core academic teachers' understanding of the various career paths in commercial construction and relate core competencies in the industry to skills illustrated by your students. AGC MA hopes to develop lasting relationships with externs to build awareness of the construction career paths available and inform educators, parents, and students to the highly rewarding opportunities available for everyone.</p> <p>This is a 5-day overview program for educators. In the first year, \$3K-\$4K per Extern was available as a stipend for the participants.</p>	<ul style="list-style-type: none"> <li>The program intends to create ongoing relationships with educators "Externs" who will direct students to learn more about the industry and the career opportunities they can access. Ideally, the educators will help with targeting of students. AGC is also doing some direct recruiting with high school students.</li> <li>The BAE is paired with an ongoing Student Engagement Program to assist educators in maximizing career pathway exploration.</li> <li>7 of 7 BAE pilot program participants have established a new partnership with an AGC MA employer. 4 of 7 have established a new relationship with the Carpenters Union and the Laborers Union. 220 High School students attended 10 Fall commercial construction site tours. 160 High School students participated in Fall career panels. 21 High School students surveyed after attending a job site tour listed project management as the most interesting subject to them. 40 carpentry students attended a fall guest speaker lunch. \$15K worth of tools and PPE donated to a school by an AGC of MA member.</li> </ul>

**Growth/Future Plans:** Increase the number of "Externs", industry partnerships, and breadth of the program across the state of MA. .



# Complete List of Examples We Have Found So Far



# Aviation

Name / Website	Established	Sponsoring Organization	Partners
Aviation Joint Apprenticeship (AJAC) <a href="https://www.ajactraining.org/">https://www.ajactraining.org/</a>	2008	State of Washington	<ul style="list-style-type: none"> <li>Partners with 300+ advanced manufacturing companies across Washington State to train and develop employees</li> <li>Partners with 12 community colleges.</li> </ul>

Description	Structure
<p><b>Target:</b></p> <ul style="list-style-type: none"> <li>High school youth to develop an interest in the aviation industry</li> <li>Other individuals seeking to change industries</li> </ul> <p><b>Program:</b> AJAC is an industry-driven, statewide 501(c)(3) non-profit apprenticeship organization founded on the belief that mastery occurs on the job. At its core, this is an apprenticeship to develop workers for the aviation industry, but the pathways to apprenticeship come through pre-apprenticeships and youth apprenticeships. Its apprenticeship offerings are in 10 high-growth, in-demand occupations to serve a variety of demographics, industries, and companies across the state.</p>	<ul style="list-style-type: none"> <li>Pre-apprenticeship is typically a 12 to 16-week program for an individual who wants to transition from another industry. Youth apprenticeship connects employers to students to gain interest in the industry in the future.</li> <li>The apprenticeship program consists of 7% classroom and 93% on-the-job training.</li> <li>AJAC serves approximately 400 apprentices per year at close to 300 companies, partnering with 12 community colleges to ensure that all apprentices are receiving college credits while working towards a journey-level certificate.</li> </ul>

**Growth/Future Plans:** AJAC has been so well received by employers in the State of Washington that it was asked to develop a comparable program to develop candidates for manufacturing and the advanced manufacturing industries that supply the aviation industry.



# Building Trades

Name / Website	Established	Sponsoring Organization	Partners
Heavy Metal Summer Experience <a href="https://www.hmse.org/">https://www.hmse.org/</a>	2021	Heavy Metal Summer Experience	<ul style="list-style-type: none"> <li>• SMACNA, SMART, MCAA, UA</li> <li>• Various MEP Contractors in the US and Canada</li> </ul>

Description	Structure
<p><b>Target:</b></p> <ul style="list-style-type: none"> <li>• High school and recent high school graduates ages 15-19</li> </ul> <p><b>Program:</b> Heavy Metal Summer Experience (HMSE) introduces high school students and recent graduates (ages 15-19) to careers in the building trades through hands-on projects, working alongside craft professionals, and discovering local apprenticeship training opportunities. Heavy Metal Summer Experience seeks to introduce young people to living-wage careers in the building trades. By normalizing skills-based apprenticeships as a post-secondary education option, HMSE hopes to create workforce diversity and entice the next generation of craft workers.</p>	<ul style="list-style-type: none"> <li>• Heavy Metal Summer Experience introduces high school students and recent graduates (ages 15-19) to careers in the building trades through hands-on projects, working alongside craft professionals, and discovering local apprenticeship training opportunities.</li> <li>• Heavy Metal Summer Experience is a 501c(3) incorporated company and is made possible by a dedicated group of working craft professionals, vendors who donate tools and PPE, and contractors across the country eager to open their shops and facilities to host a camp and introduce students to the building trades.</li> </ul>

**Growth/Future Plans:** HMSE has grown very quickly, from two contractor-hosted programs in 2021 to more than 20 programs in 2023, hosted by contractors and union training centers across the US and in Ontario, Canada. The program plans to continue expanding in the mechanical trades and begin working with the electrical trade in the future.

# Construction

Name / Website	Established	Sponsoring Organization	Partners
YouthBuild <a href="https://hacc.net/hacc-youthbuild/">https://hacc.net/hacc-youthbuild/</a>	YouthBuild is only 3 years old	Housing Authority of Champaign County, IL	Not Applicable

Description	Structure
<p><b>Target:</b></p> <ul style="list-style-type: none"> <li>Those who have not had success in the traditional high school settings, most often dropouts</li> <li>Offered to both males and females</li> </ul> <p><b>Program:</b> A community-based construction pre-apprenticeship for disadvantaged youth in the Champaign, IL region that aims to make students ready for transition to an apprenticeship or another type of post-secondary education.</p>	<ul style="list-style-type: none"> <li>First, candidate is interviewed before being accepted into a 2-week "Mental Toughness" boot camp. In the Mental Toughness program, an assessment is made via a rubric of whether the participant is a good candidate for the 6-month pre-apprenticeship program. If deemed not ready for the pre-apprenticeship program, participant receives additional coaching to be eligible for a later entrance to the pre-apprenticeship program.</li> <li>2 pre-apprenticeship programs per year with the program being 50% education, 40% construction skills, and 10% leadership development.</li> <li>Upon completion, participants earn a GED, NCCER, and OSHA certifications.</li> <li>Because YouthBuild is funded by a grant from the Housing Authority, to gain experience, students participate in small construction projects on Housing Authority properties. As a condition of the grant, YouthBuild follows up on its graduates for 1 year after completion of the pre-apprenticeship.</li> <li>Career advisor works with participants on soft skills for job placement. By completion of the program, candidates will have a resume and have been coached on interviewing skills. They also will have formulated a plan on how to move ahead.</li> </ul>

**Growth/Future Plans:** The YouthBuild program concept was developed in the 1970s and is international in scope.

# Construction

Name / Website	Established	Sponsoring Organization	Partners
Northeast Florida Builder's Association (NEFBA) <a href="https://nefbaapprenticeship.org/">https://nefbaapprenticeship.org/</a>	Celebrating 50th year		Work with 220 local contractors generating skilled, certified workers – contractors also put forward candidates for the school

Description	Structure
<p><b>Target:</b></p> <ul style="list-style-type: none"> <li>• People of all levels, ages, ethnicities, and gender, as well as ex-prisoners</li> <li>• Largest focus is on high schoolers (that is where most of the advertising and recruiting efforts money is spent)</li> <li>• In many cases, hand-picking recruits based on recommendations from counselors</li> <li>• Athletes</li> <li>• Candidates brought forward by contractors</li> </ul> <p><b>Program:</b> A high-quality construction apprenticeship program to provide career development as a pathway to high-wage-demand careers in the construction industry to meet the needs of our local economy and enhance the quality of life in our community.</p>	<ul style="list-style-type: none"> <li>• Contractors sign up people they've hired that want to go through the program. Contractors pay for it and students owe contractors 4 years (considered 'indentured') – they are usually transitioning from other careers and are 28 to 30-year-olds.</li> <li>• 4-year program where Apprenticeships are offered for 5 different trades; electric, HVAC, sheet metal, plumbing, and carpentry.</li> <li>• Program is workforce driven because it supplies about 220 contractors with employees. In turn, contractors will sponsor students to go to school at \$700 per student for 4 years.</li> <li>• Students pay nothing and go to school 2 nights a week from 6-9pm, and there are 53 classes a year.</li> <li>• Depending on the trade, students are certified (NCCER, industry-recognized professional credentials).</li> </ul>

**Growth/Future Plans:** They continue to hold trade-related competitions (nail-driving contest, etc.) and events at schools to generate awareness.

# Healthcare

Name / Website	Established	Sponsoring Organization	Partners
Health Care Apprenticeship Consortium (HCAC) <a href="https://healthcareapprenticeship.org/">https://healthcareapprenticeship.org/</a>	Founded in 2017 but apprenticeship program began 6 years ago	A multi-union, multi-employer Washington State-registered Joint Apprenticeship Training Committee formed by 14 hospital employers across 7 healthcare systems and the largest healthcare Union in WA	Sponsored by SEIU Healthcare 1199NW Multi-Employer Training and Education Fund

Description	Structure
<p><b>Target:</b></p> <ul style="list-style-type: none"> <li>• Candidate must be over 18 years old with a high school diploma</li> <li>• More than the minimum age requirement, there is not a specific demographic defined</li> <li>• What has been observed, apprenticeships help employers bring more diversity into these occupations and are a secondary/alternate pathway to opportunities in the medical field without incurring tuition expenses</li> </ul> <p><b>Program:</b> Founded to alleviate a shortage of healthcare workers in WA, it creates a pipeline of skilled healthcare workers who "earn while you learn." HCAC began as a single apprenticeship for Medical Assistants and has grown to include 6 apprenticeships – Medical Assistant (MA), Central Sterile Processing Technician (CSPT), Pharmacy Technician (CPhT), Behavioral Health Tech, Peer Counselor, Substance Use Disorder Professional.</p>	<ul style="list-style-type: none"> <li>• Program is open to any hospital or medical center in the state of Washington.</li> <li>• Works with individual hospital/medical center to develop an apprenticeship tailored to its specific needs. It helps the organization set up the program – develops the plan, including formal classes training (often virtual) and a mentor within the hospital itself for the apprentice.</li> <li>• Apprentices complete 2000 hours of paid, on-the-job training and 288-362 hours of technical instruction within 12-24 months. Apprentices work and learn in full-time positions. Program begins with 5 weeks of classes and then transitions to 1 day per week in class as participants progress to on-the-job training.</li> <li>• Post-completion service commitment is required.</li> <li>• These programs prepare students to receive the MA-C or CRCST certification and work in WA state.</li> </ul>

**Growth/Future Plans:** HCAC will develop new apprenticeships at the request of a hospital or medical center.

# IT

Name / Website	Established	Sponsoring Organization	Partners
AIR/CompTIA Apprenticeships for Tech <a href="https://www.comptia.org/content/lp/apprenticeships-for-tech">https://www.comptia.org/content/lp/apprenticeships-for-tech</a>	Working with the DOL to establish apprenticeship programs since 2006 but been in existence since 1946	AIR (American Institutes for Research)	CompTIA

Description	Structure
<p><b>Target:</b></p> <ul style="list-style-type: none"> <li>Does not target candidates – employer sponsoring the apprenticeship does the targeting</li> <li>Candidates range from 16-50 with 18-24 usually considered the youth demographic</li> <li>Targets are getting younger, but some programs are designed for youth and others target career changers who might be in their 50s</li> </ul> <p><b>Program:</b> A non-profit organization researching healthcare, education, DEI, and workforce development. AIR research and evaluation experts study human performance and workforce development programs to determine the best methods to increase labor market opportunities. In partnership with government agencies, professional associations, and the private sector, technical assistance teams help local, national, and international clients develop a workforce that is ready for the jobs of today and the opportunities of tomorrow.</p>	<ul style="list-style-type: none"> <li>Has DOL Office of Labor and Industry contract to develop tech apprenticeships – does not administer the apprenticeship program itself – develops them for employers requesting assistance and the employers administer.</li> <li>Leveraging CompTIA’s expertise and nationally recognized certifications, AIR established competency evaluations, national standards, and guidelines for the programs. The apprenticeship development process becomes more streamlined for businesses to design and implement, as well as being standardized to a national norm.</li> <li>Worked with employers to determine the most in-demand tech apprenticeships – there are 5 approved apprenticeships to date:                         <ul style="list-style-type: none"> <li>Cybersecurity Support Technician</li> <li>Data Analyst</li> <li>Network Support Specialist</li> <li>Tech Project Coordinator</li> <li>Tech Support Specialist</li> </ul> </li> <li>Apprenticeship programs typically entail 2000 hours paid OJT, with a mentorship and classroom training. While AIR's work with the DOL specifically targets employers, they’ve worked with school systems to develop vocational high school programs where students have a combo of school and working. These programs develop skills related to IT and manufacturing. The student may go to school for ½ day and work ½ day.</li> <li>Also works with workforce development programs and community organizations to develop apprenticeships.</li> </ul>

**Growth/Future Plans:** There are plans to expand apprenticeships into other areas of IT.

# Manufacturing

Name / Website	Established	Sponsoring Organization	Partners
Society of Manufacturing Engineers (SME) <a href="https://www.sme.org/">https://www.sme.org/</a>	1932	Not Applicable	Local Schools and contractors

Description	Structure
<p><b>Target:</b></p> <ul style="list-style-type: none"> <li>• Grades 9-12</li> <li>• High Schools only</li> </ul> <p><b>Program:</b> These programs are designed for workforce development and/or preparation for continuing education. "We go into high schools and build out manufacturing and engineering programs by providing curriculums from equipment to professional development."</p>	<ul style="list-style-type: none"> <li>• There are 7 pathways of instruction that support everything from generating interest in the area in general (14-year-olds) and then actual instruction from 9-12 as well.</li> <li>• Trade areas of focus include (not an exhaustive list):             <ul style="list-style-type: none"> <li>• Welding</li> <li>• Robotics</li> <li>• Machining and Fabrication</li> <li>• Industrial Maintenance</li> </ul> </li> <li>• Students can choose pathways that prepare them for immediate employment or advanced education. Example certifications include:             <ul style="list-style-type: none"> <li>• Certified Manufacturing Technologist</li> <li>• Certified Manufacturing Associate</li> <li>• Lean Certification</li> </ul> </li> </ul>

**Growth/Future Plans:** None mentioned.



# Manufacturing

Name / Website	Established	Sponsoring Organization	Partners
Florida Advanced Technological Education Center (FLATE) <a href="https://fl-ate.org/">https://fl-ate.org/</a>	Prior to 2007	Florida Makes	None Mentioned
Description		Structure	
<p><b>Target:</b></p> <ul style="list-style-type: none"> <li>• Middle Schools</li> <li>• High Schools</li> <li>• Colleges/Universities</li> <li>• Unsuccessful students – those looking for a different career path</li> </ul> <p><b>Program:</b> The objective of the FLATE organization is to increase the number of students pursuing Manufacturing/IT Education by creating relationships between manufacturers and schools/colleges in Florida that have manufacturing programs or degrees.</p>		<ul style="list-style-type: none"> <li>• Do not have an apprenticeship program per se, but they work to generate awareness and improve recruiting for other organizations.</li> </ul>	

**Growth/Future Plans:** There are currently 5,000 students in 20 higher-education institutions in Florida. The growth goal is a 5% increase over the next 5 years.

# Manufacturing

Name / Website	Established	Sponsoring Organization	Partners
Manufacturing Academy <a href="https://www.ajactraining.org/programs/manufacturing-academy/">https://www.ajactraining.org/programs/manufacturing-academy/</a>	2011	AJAC/State of Washington	Not Applicable

Description	Structure
<p><b>Target:</b></p> <ul style="list-style-type: none"> <li>Women, people of color, displaced workers, and low-income individuals with the goal of developing manufacturing skills and obtain living wage job</li> </ul> <p><b>Program:</b> A pre-apprenticeship training program in Washington State offering a solid foundational career pathway into aerospace through advanced manufacturing apprenticeship opportunities. Graduating students have the basic foundational skills to find gainful entry-level employment in manufacturing and may meet the minimum qualifications to pursue additional opportunities in advanced manufacturing through AJAC's other apprenticeship programs. Additionally, interested students may pursue an apprenticeship in aviation.</p>	<ul style="list-style-type: none"> <li>Programs offered in 6 locations around the state, including a juvenile rehab center, 2 women's correctional centers, and a men's correctional center.</li> <li>Students develop soft skills and resume writing abilities. To succeed in industry, students are taught:                             <ul style="list-style-type: none"> <li>Math for Manufacturing</li> <li>Blueprint Reading</li> <li>Lean Manufacturing</li> <li>Effective Communication</li> <li>Resume Writing</li> <li>Interviewing and Job Application Assistance</li> </ul> </li> </ul>

**Growth/Future Plans:** None mentioned.



# Manufacturing

Name / Website	Established	Sponsoring Organization	Partners
What's So Cool About Manufacturing Video Competition <a href="https://www.whatssocool.org/contests/best-of-pa-contest/">https://www.whatssocool.org/contests/best-of-pa-contest/</a>	2013	Manufacturers Resource Center <a href="https://www.mrcpa.org/about/about-us/">https://www.mrcpa.org/about/about-us/</a>	7 partners administer (Catalyst Connection, After3.org, IMC, MANTEC, NT, PA Dept. of Community and Economic Development, Workforce Solutions for North Central PA), with more than 50 organizations supporting the program.

Description	Structure
<p><b>Target:</b></p> <ul style="list-style-type: none"> <li>8<sup>th</sup>-grade middle school students in the state of PA looking toward an eventual career who might not necessarily consider manufacturing as being an attractive choice</li> </ul> <p><b>Program:</b> 8<sup>th</sup>-grade middle school students compete in a statewide competition each spring to produce the best video about the benefits and opportunities of working in manufacturing as a career. The 2023 winner was Northeast Middle School in Bethlehem, PA showcasing a local Stanley Black and Decker site, its products, its workers, and its operations. The MRC's mission is to create jobs and economic opportunities in eastern PA by supporting manufacturing. This contest exposes young students to opportunities in manufacturing before their minds have settled on what they want to do as a career.</p>	<ul style="list-style-type: none"> <li>Students compete regionally before competing on a state-wide level. A national panel of judges selects the winners.</li> <li>MRC (Manufactures Resource Center) was established to transition the local Bethlehem economy to a world without steel manufacturing as Bethlehem Steel was shutting its operations. MRC is affiliated with DOC NIST and the 51 MEP (Manufacturing Extension Program) centers nationally.</li> </ul>

**Growth/Future Plans:** None currently – the program expands as more schools decide to participate.

# Multiple

Industry	Name / Website	Established	Sponsoring Organization	Partners
<p><b>Multiple</b></p> <ul style="list-style-type: none"> <li>• Business Operations</li> <li>• Education and Training</li> <li>• Healthcare</li> <li>• Advanced Manufacturing</li> </ul>	<ul style="list-style-type: none"> <li>• Financial Services</li> <li>• Real Estate Management</li> <li>• Information Technology</li> <li>• Hospitality</li> <li>• Maintenance Technology</li> </ul> <p>Youth Apprenticeship  <a href="http://www.careerwisecolorado.org/en/">http://www.careerwisecolorado.org/en/</a></p>	<p>2016</p>	<p>CareerWise of Colorado</p>	<p>A 501c3 organization with more than 35 education and community partners</p>

Description	Structure
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<p><b>Target:</b></p> <ul style="list-style-type: none"> <li>• High Schoolers (10<sup>th</sup>, 11<sup>th</sup>, and 12<sup>th</sup> graders only)</li> <li>• 2-year apprenticeships are offered to rising seniors only</li> <li>• Any sophomore or junior is a candidate</li> </ul> <p><b>Program:</b> A 501c3 organization with more than 35 education and community partners, its funding comes from Bill and Melinda Gates Foundation, Bloomberg Philanthropies, The Colorado Health Foundation, State of Colorado, Colorado Workforce Development Council, JP Morgan Chase, United Way, The Walton Family Foundation, US DOL, and Rose Community Foundation.</p>	<ul style="list-style-type: none"> <li>• Youth Apprenticeship is modeled on the Swiss apprenticeship system. In Switzerland, there are more than 230 approved apprenticeship occupations, and 40% of all companies participate in the program. 70% of Swiss students choose apprenticeships and 30% of them stay with their training company or return after completing college.</li> <li>• Employers choose between a 2- or 3-year program.</li> <li>• Apprentices split their time between school and work, typically 20-24 hours a week of OJT work. Students take core academic courses at school, with some community college coursework. The community college coursework is approved by the business and student. It allows for upskilling for specific occupations and earns industry-relevant certification. Students apply for apprenticeships in the spring of their sophomore year for work that begins the summer before their junior year</li> </ul>
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**Growth/Future Plans:** More than 35 states have visited CareerWise of Colorado to learn about our revolutionary adaptation of the time-tested model of apprenticeship and our ability to simultaneously solve problems in today's labor markets, the educational system, and the equity of economic opportunities.

# Multiple Including Trades

Name / Website	Established	Sponsoring Organization	Partners
SkillsUSA (SUSA) <a href="https://www.skillsusa.org/">https://www.skillsusa.org/</a>	1965	Not Applicable	Partners with nearly 100 businesses

Description	Structure
<p><b>Target:</b></p> <ul style="list-style-type: none"> <li>• Middle and High School, College, and Post Secondary levels</li> <li>• Specific curricula are built for the following ages:               <ul style="list-style-type: none"> <li>• Exploratory curricula recommended for students ages 12-14</li> <li>• Fundamental curricula recommended for students ages 14-16</li> <li>• Advanced curricula recommended for students ages 17-19</li> <li>• Adult learner curricula recommended for students 20 and older</li> </ul> </li> </ul> <p><b>Program:</b> An educational non-profit that claims it has the largest organization whose purpose is to serve students preparing for technical, skilled, and service careers. SkillsUSA becomes an integral component of high school and college curriculums. The organization itself does not manage the day-to-day operations of apprenticeships. SUSA serves 53 states and territorial areas.</p>	<ul style="list-style-type: none"> <li>• SUSA has developed a National Career Clusters Framework consisting of 13 clusters of which Architecture and Construction is one. Course areas in this cluster include:               <ul style="list-style-type: none"> <li>• Architectural Drafting</li> <li>• Building Maintenance</li> <li>• Cabinetmaking</li> <li>• Carpentry</li> <li>• Electrical Construction Wiring</li> <li>• Heating, Ventilation, and AC</li> <li>• Masonry</li> <li>• Plumbing</li> <li>• Sheet Metal</li> <li>• TeamWorks</li> <li>• Welding</li> <li>• Welding Fabrication</li> <li>• Welding Sculpture</li> </ul> </li> <li>• Courses are defined and offered on a local basis.</li> <li>• Each chapter assesses its local area's growth and construction activity and designs programs accordingly for schools.</li> </ul>

**Growth/Future Plans:** Growth is planned regionally based on changes and expectations of school enrollments.

# Multiple Trades

Name / Website	Established	Sponsoring Organization	Partners
TradesFutures <a href="https://tradesfutures.org/">https://tradesfutures.org/</a>	Part of NABTU from 2000-2023 at which time it became independent	Was part of North America Trades Union (NABTU), but in order to compete for funding it spun off in 2023 to become an independent entity	<ul style="list-style-type: none"> <li>Organizations licensing TradesFutures' curriculums are urged to partner with local clubs (i.e., Boys N Girls Club) to increase program participation</li> <li>Urban League is a new partner</li> </ul>

Description	Structure
<p><b>Target:</b></p> <ul style="list-style-type: none"> <li>High School to people in their 40s and 50s</li> <li>Supports students, women, veterans, and people of color to establish and maintain careers in the construction industry</li> <li>Focus their efforts in large and/or growing cities</li> </ul> <p><b>Program:</b> A non-profit corporation organized for the purpose of developing, promoting, and improving Apprenticeship Readiness Programs (“ARPs”). ARPs are educational courses and curriculums that provide students with the fundamental skills and knowledge necessary to choose, obtain, and succeed in a formal, registered apprenticeship in the construction industry.</p>	<ul style="list-style-type: none"> <li>Organizations involved in construction across the county license the curriculum and adapt it to their use. TradesFutures helps community-based organizations establish and maintain ARPs.</li> <li>Over 200 communities/organizations license the program including, for example:                         <ul style="list-style-type: none"> <li>Atlanta North Georgia Building Trade Council (ANGBTC)                                 <ul style="list-style-type: none"> <li>Randy Beall (404-584-0005)</li> <li>They have a Facebook page</li> </ul> </li> <li>California Prisons – 37</li> <li>Tri-Counties Apprenticeship Preparation</li> </ul> </li> </ul>

**Growth/Future Plans:** Grow the number of organizations focused on diversity.

# Trades

Name / Website	Established	Sponsoring Organization	Partners
Peoria Educational Region for Employment and Career Training <a href="http://www.perfectpeoria.com/">http://www.perfectpeoria.com/</a>	2000	An extension of The State Board of Education of Illinois. Illinois has adopted the Career Cluster model established by the National Career Technical Education Foundation (NCTEF).	<ul style="list-style-type: none"> <li>• Construction Industry Work-Based Learning Advisory Board</li> <li>• Elementary Career Development Advisory Board</li> </ul>

Description	Structure
<p><b>Target:</b></p> <ul style="list-style-type: none"> <li>• High School students in their area</li> <li>• Also have some exercises for Middle Schoolers to expose them to the trades</li> </ul> <p><b>Program:</b> Program is designed to expose middle and high school children to the trades – carpenters, brick layers, electricians, iron workers.</p>	<ul style="list-style-type: none"> <li>• Based on Career Clusters which are groupings of occupations/career specialties used as an organizing tool for curriculum design and instruction.</li> <li>• Occupations/career specialties are grouped into the Career Clusters based on the fact that they require a set of common knowledge and skills for career success. The Knowledge and Skills represented by Career Clusters prepare learners for a full range of occupations/career specialties.                         <ul style="list-style-type: none"> <li>• First Semester – take students around to different trades to expose them to this type of work.</li> <li>• Second Semester – match students with contractors for an internship program.</li> </ul> </li> </ul>

**Growth/Future Plans:** Student participation growth and Contractor growth/participation.

# Trades

Name / Website	Established	Sponsoring Organization	Partners
Brothers Keepers <a href="https://www.swmsctf.org/programs-partnerships/brothers-keeper">https://www.swmsctf.org/programs-partnerships/brothers-keeper</a>	8 years old	SW Mountain States Regional Council of Carpenters	The Training Fund

Description	Structure
<p><b>Target:</b></p> <ul style="list-style-type: none"> <li>• 18+ (a 17-year-old requires a parental signature in order to participate)</li> <li>• When the program began, it originally targeted African American youth but has grown to become a program for disadvantaged males in general</li> </ul> <p><b>Program:</b> When Brothers Keepers first began, it was a one-day boot camp followed by a 2-week training before placement into an apprenticeship. This is now a 4-week training to better prepare the youth.</p>	<ul style="list-style-type: none"> <li>• 4-week training to better prepare the youth</li> <li>• Pre-apprenticeship program is designed to assist disadvantaged males through hard work to develop a career in the carpentry trade</li> <li>• Offers carpentry training and job placement assistance</li> <li>• Program from SWMC Regional Carpenters Union is currently limited to the Los Angeles area only, but the Local Carpenters Union in WA offers the same program in the Spokane area.</li> <li>• Program has 3 phases:                             <ul style="list-style-type: none"> <li>• 1-day evaluation/boot camp (monthly) – an intro for the youth and screening by Brothers Keepers; an informal evaluation of the candidates plus a physical evaluation. They are looking for youth who have some get-up-and-go and will stay with the program.</li> <li>• 4-week training program – the goal here is more vetting and some hands-on training before placement in an apprenticeship. They are looking for those who have possibilities and will stay with the trade. Generally, OSHA training and material handling as well as material identification. "When they go to an apprenticeship, they are not as green as when they arrive."</li> <li>• Placement in an apprenticeship program with a contractor for a full 4-year apprenticeship.</li> </ul> </li> </ul>

**Growth/Future Plans:** The program has already expanded into a mirror program for disadvantaged women.



# Trades

Name / Website	Established	Sponsoring Organization	Partners
Bridging Outstanding Opportunities with Tradeswomen Skills (BOOTS) <a href="https://www.swmsctf.org/programs-partnerships/bridging-outstanding-opportunities-with-tradeswomen-skills/">https://www.swmsctf.org/programs-partnerships/bridging-outstanding-opportunities-with-tradeswomen-skills/</a>	7 years old	SW Mountain States Regional Council of Carpenters	The Training Fund

Description	Structure
<p><b>Target:</b></p> <ul style="list-style-type: none"> <li>• 18+ female (a 17-year-old requires a parental signature in order to participate)</li> <li>• When the program began, it originally targeted African American females but has grown to become a program for disadvantaged females in general</li> </ul> <p><b>Program:</b> BOOTS is a 4-week pre-apprenticeship program designed to assist disadvantaged females through hard work to develop a career in the carpentry trade. The BOOTS program is currently limited to the Los Angeles area only.</p>	<ul style="list-style-type: none"> <li>• 4-week pre-apprenticeship program designed to assist disadvantaged females to develop a career in the carpentry trade</li> <li>• Offers carpentry training and job placement assistance</li> <li>• Program is currently limited to the Los Angeles area only</li> <li>• The BOOTS pre-apprenticeship consists of:                             <ul style="list-style-type: none"> <li>• 1-day evaluation/boot camp (monthly) – an intro for the youth and screening by BOOTS; an informal evaluation of the candidates plus a physical evaluation. They are looking for youth who have some get-up-and-go and will stay with the program.</li> <li>• 4-week training program – the goal here is more vetting and some hands-on training before placement in an apprenticeship. They are looking for those who have possibilities and will stay with the trade. Generally, OSHA training and material handling as well as material identification. "When they go to an apprenticeship, they are not as green as when they arrive."</li> <li>• Placement in an apprenticeship program with a contractor for a full 4-year apprenticeship.</li> </ul> </li> </ul>

**Growth/Future Plans:** This program is already a mirror of the Brothers Keepers program.

# Trades

Name / Website	Established	Sponsoring Organization	Partners
Career Connection Program <a href="https://www.carpenters.org/citf-training/citf-training-programs/career-connections/">https://www.carpenters.org/citf-training/citf-training-programs/career-connections/</a>	2007	UBC (United Brotherhood of Carpenters)	Carpenters International Training Fund

Description	Structure
<p><b>Target:</b></p> <ul style="list-style-type: none"> <li>9<sup>th</sup> to 12<sup>th</sup>-grade students in public middle and high schools</li> </ul> <p><b>Program:</b> A national 500-hour pre-apprenticeship program offered to middle and high school students to introduce them to the craft and trade of carpentry. Career Connection contracts with the schools to teach its students.</p>	<ul style="list-style-type: none"> <li>Program materials written by UBC carpenters from around North America who have teaching and field experience. Students learn basic and intermediate carpentry, advanced skills in commercial and residential construction, and basic construction site safety. The program also includes training in employability including:                             <ul style="list-style-type: none"> <li>Goal Setting</li> <li>Positive Attitude</li> <li>Punctuality</li> <li>Teamwork</li> <li>Taking Initiative</li> </ul> </li> <li>It is the responsibility of the individual school district to provide access to the materials and machinery needed for training.</li> <li>Students can see projects built step-by-step using the program's Virtual Shop software as they begin to build a project.</li> <li>Upon successful completion of all 4-years of the program, the student proceeds to a fully accredited apprenticeship program as a second-year journeyman with a starting wage of \$24-25/hr.</li> </ul>

**Growth/Future Plans:** The program will continue to expand into other schools.



# Trades

Name / Website	Established	Sponsoring Organization	Partners
Electrical Training Alliance of Jacksonville (ETAJAX) <a href="http://www.etajax.org/">http://www.etajax.org/</a>		<ul style="list-style-type: none"> <li>• Classes registered federally with Dept. of Labor (DOL) with 37 states having their own standards for apprenticeships – ETAJ adheres to Florida state standards</li> <li>• International Brotherhood of Electrical Workers (Union) sponsors apprenticeships</li> <li>• Contractors Association – National Electrical Contractors Association</li> <li>• NECA and IBEW work with 10 local contractors to subsidize the program</li> </ul>	Partner with local high schools to assist with pre-apprenticeship programs

Description	Structure
<p><b>Target:</b></p> <ul style="list-style-type: none"> <li>• High School to early 20s</li> <li>• Women</li> <li>• Ex-prisoners</li> <li>• People of Color</li> </ul> <p><b>Program:</b> A 5-year program in commercial and industrial electrical technology, as well as voice-data-video technology.</p>	<ul style="list-style-type: none"> <li>• Students attend classes 2 nights a week and work for sponsor contractors full-time.</li> <li>• Program completion is 8000 hours with programs including inside wireman, a hybrid program, and VDV Telecommunications.</li> <li>• First-year apprentices are 50% of the top wage for an electrician, third years are 70% and fifth years are 80%.</li> <li>• Continuing Ed courses for journey workers include NFPA 70E, OSHA 30, Photovoltaic Solar Technology, Electrical Vehicle Infrastructure Technology, Motor Control Systems, NEC Code, and Security Access Technology.</li> <li>• Program heavily focused on STEM (science, technology, engineering, and math).</li> <li>• Continuing Ed is also offered to Union members and/or those currently working in the trade.</li> </ul>

**Growth/Future Plans:** Difficult to assess how many more students the program can accommodate when the # of jobs available in the market is dependent on contractor input – sometimes difficult for them to forecast 5 years out.

# Trades

Name / Website	Established	Sponsoring Organization	Partners
Construction Industry Training Council of Washington (CITC) <a href="https://citicwa.org/apprenticeship/">https://citicwa.org/apprenticeship/</a>	In March 1985, CITC held its first class in carpentry	None	<ul style="list-style-type: none"> <li>• High Schools</li> <li>• Pre-apprenticeship programs throughout WA</li> </ul>

Description	Structure
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<p><b>Target:</b></p> <ul style="list-style-type: none"> <li>• No specific age targeted; the predominant age between 20-25 years               <ul style="list-style-type: none"> <li>• Youngest students are in their late teens</li> <li>• Candidates can go up to 40-50 years of age</li> </ul> </li> <li>• Graduating High Schoolers</li> <li>• Ex-Military</li> <li>• Women</li> <li>• Ex-Prisoners</li> <li>• People changing careers</li> </ul> <p><b>Program:</b> A state-licensed, vocational trade school for the construction industry offering training throughout Washington State.</p>	<ul style="list-style-type: none"> <li>• Classes are taught at their own locations around the state, such as Spokane, Pasco, Winachee, Vancouver, Marysville, and Bellevue.</li> <li>• Most apprenticeship programs such as HVAC, commercial electrical, and carpentry are 4-year programs.</li> </ul>
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**Growth/Future Plans:** Based on forecasts of construction in their geographic areas.

# Trades

Name / Website	Established	Sponsoring Organization	Partners
Atlanta North Georgia Building Trade Council (ANGBTC)		Dept. of Labor supports their YouthBuild programs for minorities 16-24 years of age	Union U which ANGBTC uses for all media from website to social media to TV advertising and videos

Description	Structure
<p><b>Target:</b></p> <ul style="list-style-type: none"> <li>• High School students</li> <li>• Single parents (male and female)</li> <li>• Minorities (16 to 24 years of age) from low-income areas</li> <li>• Significant spend on sports-affiliated marketing targeted at kids who follow or play sports (and their parents)</li> </ul> <p><b>Program:</b> ANGBTC represents all the Unions in Atlanta from a "business and political standpoint" and helps to recruit for all Union apprenticeships developed by ITI.</p>	<ul style="list-style-type: none"> <li>• Council also runs a pre-apprenticeship program, which it licenses from TradeFutures.</li> </ul>

**Growth/Future Plans:** Limited to construction growth in the area.

# Trades

Industry	Name / Website	Established	Sponsoring Organization	Partners
Trades	Pathway to Building Trades Forest Avenue Outreach/ <a href="http://www.forestaveoutreach.org/programs/pathway-building-trades">www.forestaveoutreach.org/programs/pathway-building-trades</a>	In the last decade	Central IA Building and Construction Trades	<ul style="list-style-type: none"> <li>• UA Local 33 of Des Moines, IA</li> <li>• Carpenters Local for Des Moines, IA</li> <li>• Habitat for Humanity</li> </ul>

Description	Structure
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**Target:**

- Teenagers from at risk groups, mostly urban

**Program:** This hands-on, “earn while you learn” program introduces Des Moines area teens to the Building Trades through a summer long Apprenticeship Readiness Program. Much like a true registered apprenticeship, there is a blend of classroom and jobsite. Career Exploration: Through partnership with Central Iowa Building & Construction Trades, the Multi-Craft Core Curriculum (MC3) exposes teens and young adults to an introduction to a variety of building trades. This program focuses on building a pathway into the building trades for underserved and disadvantaged youth to bring diversity to the Building Trades, and support applicants along that path. We are proud to create gender and racial equality in the workforce, while opening opportunities for Des Moines youth.

- Field Trips: We tour Local Union Apprenticeship training centers, experiencing hands-on introductions to each skilled trade, while meeting experts and apprentices. We visit jobsites, hear from guest industry speakers, and explore the career opportunities for everyone in the building trades.
- Hands-On Experience: Habitat for Humanity will host our hands-on work, as will visits to the shops at apprenticeship training centers.
- Certificate: Through MC3, participants will receive OSHA 10, First Aid / CPR training and graduate with an industry-recognized credential and certificate.
- The model combines Risk vs Reward, earn-while-you-learn, and S.O.S. (Services, Opportunities, and Supports) from positive youth development

**Growth/Future Plans:** Continue to support and increase participation in the program.

# Trades

Industry	Name / Website	Established	Sponsoring Organization	Partners
Trades	DEI Education for Union Leaders	In the last decade	UA Local 33 of Des Moines, IA	<ul style="list-style-type: none"> <li>• Cornell University DEI Education for Labor Leaders</li> </ul>

Description	Structure
<p><b>Target:</b></p> <ul style="list-style-type: none"> <li>• Local Union Leadership</li> </ul> <p><b>Program:</b> Cornell University provides a Diversity Equity and Inclusion (DEI) class for Labor Leaders. It helps participants understand concepts like unconscious bias, and teaches them to recognize how they can lead their organizations so that they are welcoming to under-represented groups and demographics</p>	<ul style="list-style-type: none"> <li>• UA Local 33 Business Manager and his leadership team attended this program with the goal of becoming better leaders for all of their members and for all who might become members in the community</li> <li>• After receiving this education, the leadership team has successfully increased participation of women and minorities in Local 33 and is committed to continuing to improve recruitment, development, and career paths for members from all backgrounds</li> </ul>

**Growth/Future Plans:** Continue educating the membership on the importance of DEI, send other leaders to the program, continue building recruiting and development with under-represented groups. .

# Trades

Industry	Name / Website	Established	Sponsoring Organization	Partners
Trades	Additional Union Leader Recruitment/Workforce Development Strategies/Tactics	15 years ago	UA Local 33 of Des Moines, IA	<ul style="list-style-type: none"> <li>Various state and local commissions and organizations</li> </ul>

Description	Structure
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**Target:**

- Various groups of potential union members at different ages

**Program:** This is not a program, rather a set of activities conducted by the UA Local 33 Business Manager and his leadership team that contribute to improved recruiting and workforce development

- UA Local 33 Business Manager has been a member of the IA Workforce Development Board. It's a statewide organization that advises state government on how to improve workforce development across IA. The board has one seat that must be filled by an organized labor representative. When he became business manager, the seat had been vacant for some time so he joined and has been on the board ever since. This allows him to guide funds, programs, and practices to support the union building trades in IA and to be aware of potential sources for funds/grants, etc.
- UA Local 33 Business Manager is a board member of Homes for IA. It's a non-profit that employs prisoners to build low-income housing. It also provides a bridge for eligible convicts to transition to the building trades when they are released from prison.
- UA Local 33 has participated in a program to provide glasses for kids in Des Moines. This has allowed them to create awareness of building trades opportunities for kids as young as 6<sup>th</sup> grade, and their parents.

**Growth/Future Plans:** Continue to participate in the above activities, groups, and commissions and look for additional opportunities for influence.

# Trades

Industry	Name / Website	Established	Sponsoring Organization	Partners
Trades	MC3 Trade Education for High School Students – SE Polk High School <a href="http://centraliowabuildingtrades.org/mc3">centraliowabuildingtrades.org/mc3</a>	In the last decade	Central IA Building and Construction Trades Council	<ul style="list-style-type: none"> <li>• Building trades unions</li> <li>• SE Polk HS</li> <li>• NABTU</li> </ul>

Description	Structure
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**Target:**

- High School Students who may be interested in learning about careers in the trades and in developing trade skills

**Program:** NABTU Multi-Craft Core Curriculum has been adopted by the high school, it is based on trade union apprenticeship programs. Welding school has been set up and is working well.

Exposure to 16 different skilled trades and industry awareness: Tours of area Registered Apprenticeship training facilities, Construction math and test preparation, Introduction to tools, materials, and blueprint reading, Recognized multi-craft core curriculum (MC3)

OSHA 10 safety certification, Communication, time management, financial literacy, and interview skills, Improved chance of acceptance into a paid registered apprenticeship training program, Connections to apprenticeship training coordinators; and Support toward success in completing apprenticeship training

- Trade education is offered at SE Polk HS for students in the public school system in Des Moines
- The students learn the basic skills of multiple trades so that they are prepared to apply for apprenticeship opportunities upon graduation
- The program has developed a “Weld-Off” competition for high school students from all over the area. Efforts have been made to include rural as well as inner-city students. The competition has been in effect for 8 years and more than 100 students compete. They are given a basic welding assignment and their work is judged by 8 independent judges.

**Growth/Future Plans:** Continue to increase student participation in the program and grow the program to other high schools. .



# Trades

Industry	Name / Website	Established	Sponsoring Organization	Partners
Trades	Building Advancement Externship Program/ <a href="http://www.constructingma.org/agc-ma-building-advancement-externship/">www.constructingma.org/agc-ma-building-advancement-externship/</a> .	2021	MA AGC	<ul style="list-style-type: none"> <li>Public Schools in MA</li> <li>Various building trades unions and contractors</li> </ul>

Description	Structure
<p><b>Target:</b></p> <ul style="list-style-type: none"> <li>High School Teachers as influencers for High School Students who may be interested in learning about careers in the trades and in developing trade skills</li> </ul> <p><b>Program:</b> The Building Advancement Externship was created by the AGC MA Workforce Development Task Force to enrich both vocational and core academic teachers' understanding of the various career paths in commercial construction and relate core competencies in the industry to skills illustrated by your students. AGC MA hopes to develop lasting relationships with externs to build awareness of the construction career paths available and inform educators, parents, and students to the highly rewarding opportunities available for everyone.</p> <p>This is a 5-day overview program for educators. In the first year, \$3K-\$4K per Extern was available as a stipend for the participants.</p>	<ul style="list-style-type: none"> <li>The program intends to create ongoing relationships with educators "Externs" who will direct students to learn more about the industry and the career opportunities they can access. Ideally, the educators will help with targeting of students. AGC is also doing some direct recruiting with high school students.</li> <li>The BAE is paired with an ongoing Student Engagement Program to assist educators in maximizing career pathway exploration.</li> <li>7 of 7 BAE pilot program participants have established a new partnership with an AGC MA employer. 4 of 7 have established a new relationship with the Carpenters Union and the Laborers Union. 220 High School students attended 10 Fall commercial construction site tours. 160 High School students participated in Fall career panels. 21 High School students surveyed after attending a job site tour listed project management as the most interesting subject to them. 40 carpentry students attended a fall guest speaker lunch. \$15K worth of tools and PPE donated to a school by an AGC of MA member.</li> </ul>

**Growth/Future Plans:** Increase the number of "Externs", industry partnerships, and breadth of the program across the state of MA. .



# Workforce

Name / Website	Established	Sponsoring Organization	Partners
Champaign County Workforce Regional Planning Commission (CCRPC) – Workforce Development <a href="https://ccrpc.org/programs/workforce-development/">https://ccrpc.org/programs/workforce-development/</a> **	2017	Not Applicable	Not Applicable

Description	Structure
<p><b>Target:</b></p> <ul style="list-style-type: none"> <li>&lt;18-year-olds</li> <li>Opportunity populations, including racial/ethnic minorities, single-parent families, low-income individuals/households, veterans, immigrants, refugees, ESL individuals, justice-involved individuals, current/former foster children, LGBTQ+ individuals, people with disabilities, people living in economically distressed areas, rural residents, and others. ECIAC members believe DEI strategies play a crucial role in apprenticeship expansion because they lead to improve labor force participation.</li> </ul> <p><b>Program:</b> Illinois is embedding Registered Apprenticeships in multiple levels of government and aligning them within career pathways as part of its workforce development efforts and including various forms of work-based learning (all types of apprenticeships: pre-apprenticeship, youth, non-registered and registered) as part of the Workforce Innovation and Opportunity Act (WIOA).</p>	<ul style="list-style-type: none"> <li>Illinois Workforce Innovation Board (IWIB) Apprenticeship Committee’s Marketing Work Group was formed in part to help determine short and long-term outreach goals to expand awareness of apprenticeship programs/opportunities for IL businesses and individuals. CCRPC was awarded an Apprenticeship IL grant with the purpose of acting as a Navigator for these counties:             <ul style="list-style-type: none"> <li>Iroquois</li> <li>Ford</li> <li>Piatt</li> <li>Champaign</li> <li>Vermilion</li> <li>Douglas</li> </ul> </li> <li>Community colleges and local workforce areas working on using pre-apprenticeship programs to diversify candidates applying for apprenticeships in the construction trades</li> <li>Recruiting is done by developing relationships with local organizations with a similar mission – to lift people out of poverty (i.e., community colleges, certain non-profits, religious and social organization).</li> </ul>

**Growth/Future Plans:** The goal is to expand beyond construction trades.

# This Project's Next Steps



**Considerations  
for New  
Horizons  
Foundation to  
Continue  
Supporting  
Workforce  
Development**



# Core Team



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