

Teri Gardner 5-19-25

## APPLICATION FOR WSATC RECOGNITION OF AN APPRENTICESHIP PREPARATION PROGRAM

*Recognized Apprenticeship Preparation Programs are education and training programs which maintain formal articulation agreement(s) with one or more registered apprenticeship program sponsors. The purpose of the recognized preparation programs is to prepare participants for successful entry into registered apprenticeship programs. Preparatory programs are designed to increase the participation of underrepresented populations in registered apprenticeship. (WSATC Policy 2012-03 Sec. I B).*

*An apprenticeship preparation program may apply for recognition or continuing recognition from the WSATC. The WSATC may grant initial recognition for a period of up to 18 months, and continuing recognition for a period of up to three years. To apply for initial recognition, programs must have participants enrolled in training at the time of application, and provide individualized demographic data for the first/current cohort of participants. (WSATC Policy 2012-03 Sec. III).*

### SECTION 1: CONTACT INFORMATION AND PROGRAM SUMMARY

**Name of Apprenticeship Preparation Program:**

HVAC Training and Career Preparation Academy

**Name of parent organization/organization that will administer the program:**

Emerald Cities Collaborative

**Contact Information:**

**Individual Authorized to Represent the Program**

*Name:* Steve Gelb

*Organization:* Emerald Cities Collaborative

*Title:* Region Director

*Phone:* 207-713-0952

*Email:* [sgelb@emeraldcities.org](mailto:sgelb@emeraldcities.org)

*Mailing Address:* 7100 Fort Dent Way, Suite 100, Tukwila, WA 98188 USA

*Physical Address:* NA

**Point of Contact for Outreach and Enrollment**

*Name:* Winnie Wakaba

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*Organization: Emerald Cities Collaborative*  
*Title: Economic Inclusion Manager, Workforce Development*  
*Phone: 253-230-0402*  
*Email: wwakaba@emeraldcities.org*  
*Mailing Address: 7100 Fort Dent Way, Suite 100, Tukwila, WA 98188 USA*  
*Physical Address: NA*

### **Primary User of Apprentice Registration and Tracking System (ARTS) Portal**

*Name: Winnie Wakaba*  
*Organization: Emerald Cities Collaborative*  
*Title: Economic Inclusion Manager, Workforce Development*  
*Phone: 253-230-0402*  
*Email: wwakaba@emeraldcities.org*  
*Mailing Address: 7100 Fort Dent Way, Suite 100, Tukwila, WA 98188 USA*  
*Physical Address: NA*

### **Summary of Preparatory Program**

**Please briefly summarize the following in three pages or less within Appendix A.**

- 1. Describe the organization that will be operating the preparatory training. If this is an existing organization, briefly describe its history and mission, and why apprenticeship preparation is a good fit.*
- 2. Describe how the program will be funded. If the program's start-up is grant funded, describe your sustainability plan once the grant ends.*
- 3. Describe the primary needs you have identified in your service area the program will address.*
- 4. Describe the target populations and geographical area.*
- 5. Describe the program. Please include the following:*
  - a. The structure of preparatory program including the anticipated number of participants/cohorts per year and approximate duration of the program;*
  - b. How the program will be staffed (i.e., instructors, administration, etc);*
  - c. Participant support/resources during program; and*
  - d. Apprenticeship navigation and articulation plan.*
- 6. Describe the program outcomes. Please include the following if applicable.*
  - a. Successful completion (required)*
  - b. Industry recognized certificate(s)/certification(s)*
  - c. Educational credit*
  - d. Target articulation rate (required)*

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7. *Please provide additional details, if any, you would like to share about your program (i.e. positives outcomes other than registered apprenticeship articulation, etc.)*

## **SECTION 2: PROGRAM PARTICIPANTS AND OUTCOMES - (WSATC Policy 2012-03 Sec. II B)**

*A minimum apprenticeship articulation goal, which shall be at least 15% of graduates. Articulation shall be measured at six months following the date program participants graduate, with the following exceptions:*

- a. Programs serving actively enrolled K-12 participants may request articulation be measured at 12 months following the date of apprenticeship preparation program graduation; OR*
- b. Programs serving currently incarcerated individuals may request articulation be measured at 18 months following the date of apprenticeship preparation program graduation.*

*The anticipated number of participants who will enroll in the preparatory program annually.*

*The specific requirements to complete the program (i.e., attendance, grades, test scores, skill demonstrations, certificate attainment, etc.).*

*The specific apprenticeship, industries and/or occupations program graduates will be prepared to enter.*

**Please respond in full to the questions below regarding your program's participants and outcomes.**

- 1. Occupations Trained: Please describe the specific apprenticeship, industries and/or occupations program graduates will be prepared to enter:*

Graduates of the HVAC Training and Career Preparation Academy will be prepared to enter jobs as HVAC installers, technicians, or energy analysts, and enter the Seattle Area Pipe Trades and the Construction Industry Training Council of Washington.

- 2. Target Articulation Rate: Approximately what percentage of program graduates do you expect to enter into a registered apprenticeship following completion of your program?*

We expect to enter 25% of graduates into a registered apprenticeship following the completion of the program.

- 3. Target Participant Population and Successful Articulation Timeframe: Please select the option which best characterizes your program participant successful articulation timeframe. Please describe.*

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☒ **6 Months**

☐ **12 Months** *(program serving actively enrolled K-12 participants)*

☐ **18 Months** *(program serving currently incarcerated individuals)*

Our program does not currently serve actively enrolled K-12 participants or currently incarcerated individuals.

*Click or tap here to enter text.*

4. *How many participants do you anticipate enrolling in each cohort and how many cohorts per year?*

We anticipate enrolling 12 participants in each cohort, with 2 cohorts a year.

5. *Please describe the requirements to complete the program (i.e., attendance, grades, test scores, skill demonstrations, certificate attainment, etc.).*

We have created some class expectations, below, that serve as a guide to complete the program. In addition to the below, participants also complete the program with an HVAC Institute Completion Certificate, OSHA 10, and the eligibility to sit for a few licenses based on what they learned in the training and their interests.

### **CLASS EXPECTATIONS - Attendance**

#### **Attendance**

When you miss class, you miss out on new information, important details about upcoming class sessions, and, most importantly, the opportunity to build skills that will support your career growth. When you attend class, you have the chance to ask questions, learn from your peers, and work on the areas where you may need more career preparation. To do this work, you need to attend.

This course has the following attendance policy:

- 5:00pm - 5:30pm has been allocated for dinner on Mondays and Wednesdays. If you would like some dinner, please arrive at 5:00pm at Highline College or the HVAC Institute. Classes will start promptly at 5:30pm
- If you are more than 30 minutes late without notifying staff, you will be marked absent.
- If you absolutely must miss class on **Mondays**, notify either **Shanna** or **Paco** via email or phone at least 24 hours in advance of the class session you will miss.

- If you absolutely must miss class on **Wednesdays and Saturdays**, notify either **Dave** or **Kim** via email or phone at least 24 hours in advance of the class session you will miss.
- In the event you are unable to provide a 24 hr notice, please still notify a staff member. Failure to do so will result in it being an unexcused absence.
- You can only miss one **EXCUSED** Monday class and one Wednesday class. Saturday classes are NOT to be missed.
  - **Missing class more than stated above, will result in removal from the course.**
- You are required to have a conversation with the instructor(s) about any absences.
  - Make-up classes are at the discretion of the instructor(s). If you have an excused absence, please reach out to Dave/Kim or Shanna/Paco for any makeup classes.

### SECTION 3: ARTICULATIONS AND PARTNERSHIPS - (WSATC Policy 2012-03 Sec. II E, Sec. I E)

*Apprenticeship preparation programs training participants for a specific occupation must provide at least one articulation agreement at the time of application. Preparatory programs training individuals in multiple occupations must provide a minimum of two articulation agreements at the time of application. Articulation agreements must contain the following components:*

*The names of the organizations entering into the agreement (Apprenticeship Preparation Program and Registered Apprenticeship Program).*

*The specific apprenticeship program and occupation(s) that the apprenticeship prep program graduates will be prepared to enter.*

*One or more of the following considerations for graduates of the prep program:*

- a. A preferred entry clause;*
- b. An advanced standing or credit clause;*
- c. Additional point(s) awarded in the application/interview process; or*
- d. Guaranteed interview with registered apprenticeship program.*

*Be executed or renewed no more than three months prior to the date of application.*

**Please select the option which best characterizes your program.**

☒ **Registered Apprenticeship Program specific apprenticeship preparation** (*goal is preparation of apprentices for one specific registered apprenticeship*)

☐ **General apprenticeship preparation program** (*goal is preparation and support to succeed in a variety of apprenticeships*)

**Please complete the chart below with the requested information for each registered apprenticeship with which your program has a formal articulation agreement. A copy of each articulation agreement must be attached to this application. A Memorandum of Agreement/Understanding, a formal contract, or a signed letter of commitment are acceptable forms of articulation agreements.**

		<b>Articulation Type</b> (select all that apply)
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Apprentice- ship Program Name	Articulating Occupation(s)	Preferred Entry	Advanced Standing or Credit	Additional Points on Application/Interview	Guaranteed Interview
Seattle Area Pipe Trades Apprenticeship	Heating, Ventilation and Air Conditioning (HVAC)/Refrig- eration Mechanics	Preferred Entry			
Construction Industry Training Council of Washington (CITC)	HVAC	Direct Entry			

Please list any other organizations, if any, which have endorsed your program or otherwise partnered with you to develop or administer this program.

Program or Organization Name	Role(s) <i>(e.g. training provider, Advisory Board member, industry consultant, supportive services provider, etc.)</i>
HVAC Institute	Technical training provider
Seattle Jobs Initiative (SJI)	Career navigating and support service provider



## **SECTION 4: CURRICULUM - (WSATC Policy 2012-03 Sec. II C)**

*Curriculum should be developed in consultation with apprenticeship partners and subject matter experts to ensure it aligns with current industry standards and prepares graduates to meet or exceed the minimum qualifications for entry into an apprenticeship. To ensure recognized Apprenticeship Preparation Programs are adequately preparing participants to enter Registered Apprenticeship and be successful apprentices, preparatory training curriculum must meet the following requirements:*

- a. Be a minimum of 80 hours in duration;*
- b. Employability skill development shall not exceed 50% of curriculum hours. Employability skill development shall be defined as general employment skills (communication, professionalism, work ethic, etc.);*
- c. Industry/trade specific skills and knowledge shall constitute at least 50% of curriculum hours. Industry/trade specific skills and knowledge shall be defined as hands-on training to develop manual, mechanical, or technical skills relevant to the occupation(s) the preparatory participant(s) are training to successfully enter, and which does not displace paid employees; and*
- d. Industry/occupation specific safety training and education.*

**In one to two paragraphs, please provide a brief summary of the programs curriculum describing the total number of hours, topics covered, method of delivery, etc.**

The HVAC Training and Career Preparation Academy consists of 12 technical classes, 8 soft skills classes, and 3 labs. The technical classes and lab are a mixture of lectures and hands on training amounting to 67.5 hours. They cover air conditioning and distribution, customer service, building engineering, and alternative heating and cooling systems. The soft skills sessions, totaling 16 hours, cover digital literacy, resumes, cover letters, mock interviews, interview preparation and networking, in addition to emphasizing goal setting, communication skills, and navigating the workplace.

**Please respond in full to the questions below.**

- 1. Please describe your program's working relationship with one or more registered apprenticeship programs in the development of elements such as curriculum, class activities, evaluation methods, and teaching techniques.*

Our HVAC Training and Career Preparation Academy began in collaboration with CITC and was initially housed at CITC. They assisted with the initial curriculum, class format and teaching strategies. Dave Norman, our technical instructor, also teaches at CITC for their HVAC Apprenticeship Program, where he has been an instructor since 1991. CITC regularly visits and speaks with our participants each cohort, which has become an essential part of our program. To further expose our participants to apprenticeship

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pathways, we've also been coordinating cohort-based tours with both the Seattle Area Pipe Trades and the Sheet Metal Workers, giving students a broader view of the opportunities available in the trades.

2. *Please identify the program's instructor(s) and provide a brief summary of their qualifications.*

The HVAC Institute was founded by David and Kim Norman to meet the HVAC industry's urgent need for skilled technicians and installers. With a career spanning over four decades, David has worked as a technician since 1979 and has been an instructor in the HVAC Apprenticeship Program at CITC since 1991. His decades of experience in an apprenticeship setting make him uniquely qualified to prepare students for the rigor and expectations of registered apprenticeship programs. In 2017, David was recognized nationally as the "Best Instructor Runner-Up," a testament to his dedication and effectiveness as an educator.

3. *What, if any, post-secondary credit do program participants receive?*

None

**Please complete Appendix B – Curriculum Outline.**

## **SECTION 5: PARTICIPANT RECRUITMENT AND RETENTION - (WSATC Policy 2012-03 Sec. II D)**

*Preparatory program recruitment and retention plans must contain the following elements:*

*The target demographics of the population their enrollees will be drawn from; and*

*The specific tools and activities used to recruit and retain participants, with an emphasis on recruitment of underrepresented populations.*

**Please respond to the following questions regarding your programs recruiting and retention plans.**

- 1. Please describe the general demographics of the intended program participants (i.e., age, gender, race/ethnicity, geographic area, etc.). Is the program limited to a specific population (i.e., students at a particular high school, veterans, WIOA-eligible, etc.)? If so, explain:*

Our program is open to individuals aged 18 and older. We may accept participants who are under 18, provided they turn 18 before the end of the training. In alignment with our funding requirements, we prioritize applicants from priority hire zip codes (as defined by the City of Seattle), particularly those located in South King County. Additionally, we aim to build a diverse and inclusive cohort by ensuring that at least two-thirds of participants identify as members of BIPOC communities, and that one-third identify as women or non-binary.

- 2. Please describe the tools and activities which will be utilized to recruit students, and describe how underrepresented populations will be encouraged to enroll in the program.*

Our recruitment cycle includes hosting two informational webinars, participating in job fairs, and actively engaging our recruiter network of 333 community-based organization contacts, past alumni, and employers/contractors. While these outreach efforts are essential, word of mouth, especially from our graduates, continues to be the most powerful and effective way to generate interest and enthusiasm for the training program.

- 3. Please describe the tools, processes, and resources your program will utilize to retain participants through graduation.*

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*[HVAC Training and Career Preparation Academy]*

We provide comprehensive support services beginning on the first day of training and continuing for up to a year after graduation. These services are designed to reduce or eliminate barriers that might prevent participants from attending class regularly. Given our strict attendance policy, we strongly encourage open communication whenever challenges arise that may impact attendance. Gas cards are one of our most frequently used support services and are distributed by SJI during soft skills classes or at the HVAC Institute. Participants who do not have access to a laptop are provided one at the start of training, which they may keep upon graduation. Additional support has included rental assistance and emergency needs such as tire replacements. Before orientation, participants are enrolled in the Seattle Jobs Initiative (SJI) and may receive Basic Food Employment and Training (BFET) funding if eligible. These wraparound supports play a critical role in ensuring our participants can stay focused on training and succeed in their career pathways.

4. *Please describe the services that will be provided to graduates and current participants to assist in their successful application and articulation into registered apprenticeship programs.*

In the first few weeks of the program, SJI's career navigators meet individually with participants to better understand their goals, strengths, and barriers. These early engagements help tailor support and build the specific skills participants need to successfully enter HVAC and electrical apprenticeships. Addressing challenges early, particularly those that might delay or block apprenticeship applications, is key to long-term success.

One area of focus is math readiness, a common hurdle in the trades. To support participants in meeting the entrance requirements for apprenticeship programs, we are offering targeted math tutoring to strengthen foundational skills and build confidence for both assessments and on-the-job performance.

Career navigation services are delivered in partnership with SJI, whose direct services and operations team includes both in-house and contracted navigators. These services include individualized coaching and job readiness training, resume development, interview preparation, employer referrals, and career advancement planning. Participants also have access to online and in-person digital literacy training.

In addition to these core services, participants are connected to essential wraparound supports such as transportation assistance, childcare, housing support, work tools, clothing, and technology. These resources help remove practical barriers and ensure that participants stay on track.

This holistic approach is designed to equip participants not just for placement, but for long-term success in high-road, high-wage careers in the clean energy sector.

5. *Please describe the cost of the program to participants and describe how the program helps mitigate the cost to participants (i.e., scholarships, grants, financial aid, etc.), if applicable.*

The HVAC Training Academy is completely free of charge to participants. Thanks to generous support from public and private funders, the program is able to cover the full cost of training, materials, certifications, and supportive services, removing financial barriers that often prevent individuals from accessing high-quality career training.

To further mitigate any costs that could impact participation, the program provides wraparound support including access to transportation assistance, tools, work clothing, childcare referrals, and technology equipment as needed.

Participants also receive career navigation and job placement support at no cost, ensuring they are fully supported throughout the training and transition into employment or apprenticeship.

By eliminating tuition and providing direct support services, ECC ensures that cost is not a barrier to entering high-wage, high-demand careers in HVAC and building operations, especially for individuals from historically underrepresented and economically disadvantaged communities.

## **SECTION 6: ADMINISTRATIVE REQUIREMENTS - (WSATC Policy 2012-03 Sec. II A)**

*Recognized Apprenticeship preparation programs shall commit to reporting the following information to L&I via the Apprenticeship Registration Tracking System (ARTS) system on a semi-annual basis, unless granted an exception\* by the WSATC:*

### *New participant demographics*

- a. First and Last Names*
- b. Birth Date*
- c. Gender*
- d. Race/ Ethnicity*
- e. Veteran Status*
- f. Social Security Number\**

### *Outcome measures (Individual-level Information)*

- a. Participant graduation(s)/ completions*
- b. Participant withdrawals*
- c. Graduates who have entered into Registered Apprenticeship*

**Please describe the tools and processes your program will utilize to successfully meet the administrative requirements listed above.**

Using the ARTS system, all applicant data, excluding social security numbers, is initially collected through our application and then entered into Salesforce (SF), our customer relationship management (CRM) system used to track participant progress throughout the program. As individuals move through the selection process, their status in SF is updated: candidates who reach the interview stage are marked as “Invited,” and the final cohort of 12 participants is updated to “Enrolled.” Once training begins, attendance is tracked regularly using reports submitted by our partners. Maintaining weekly updates in SF helps us monitor participation and quickly address any withdrawals, including understanding the reasons behind them. Additionally, SF includes a “Career Snapshot” section that allows ECC to document participants who have secured new employment, advanced their skills, or entered an apprenticeship, helping us measure long-term outcomes and program impact.

**Please complete Appendix C – Administrative Requirements Spreadsheet.**

## SECTION 7: APPENDICES

Please complete and submit appendices with the application packet as separate files.  
Appendices include the following:

*Appendix A – Program Summary*

*Appendix B – Curriculum Outline*

*Appendix C – Administrative Requirements Spreadsheet*

*Appendix D – Articulation Agreement(s)*

*\*Submitted by program as individual documents*

## SUBMISSION INSTRUCTIONS

***Applications are due no later than 45 days prior to the scheduled quarterly meeting of the Washington State Apprenticeship and Training Council. It is strongly recommended that you submit your application 2 weeks prior to the deadline for pre-review, to ensure that your application is complete. Contact Rio Frame for questions or assistance.***

***Please submit your completed application via email to:***

*Rio Frame, Management Analyst  
Dept. of Labor & Industries, Apprenticeship Section  
Rio.Frame@Lni.wa.gov  
509-426-0985*



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## **APPENDIX A – PROGRAM SUMMARY**

***Please briefly summarize the preparatory program according to the requirements listed in Section 1 “Summary of Preparatory Program” in three pages or less.***

Emerald Cities Collaborative (ECC) is a national nonprofit organization that brings together labor, community, business, and government entities to promote environmental sustainability, economic inclusion, and equity. The organization’s mission is to ensure that environmental and climate investments generate careers, business opportunities, and shared wealth for historically marginalized communities. Through its HVAC Training and Career Preparation Academy, E-Contractor Academy and more recently the Electrical Pathways Program, ECC has demonstrated its commitment to workforce development by preparing individuals for clean energy careers, with a focus on Black Indigenous People of Color (BIPOC) and women participants. Apprenticeships and apprenticeship-preparation programs are the gold standard for building the kind of career opportunities we aim to provide. This strong alignment with apprenticeship pathways reflects ECC’s deep commitment to creating inclusive, long-term career opportunities, especially for those historically excluded from high-road industries.

Buildings account for nearly 40% of U.S. carbon emissions, making HVAC technicians, electricians, and building operators central to meeting climate goals. As the region moves toward electrification and energy efficiency, especially through heat pump adoption, demand for skilled workers is rising rapidly.

But a critical challenge remains: the trades lack racial and gender diversity. In our region, 81% of HVAC technicians are white and male, while only 19% of electrical apprentices identify as people of color, despite BIPOC individuals making up nearly 48% of young adults entering the workforce.

Emerald Cities Collaborative (ECC) is working to close this gap through equity-driven workforce programs. Our HVAC Training Academy provides culturally responsive job training to BIPOC individuals, women, and economically disadvantaged adults. In tandem, our Electrical Pathways initiative connects participants to union apprenticeship opportunities, while the E-Contractor Academy supports small, minority, and women-owned businesses to thrive in clean energy projects.

These programs don't just prepare people for careers. They help reshape the trades to better reflect the communities they serve. As climate policy advances, ECC is ensuring the clean energy transition creates opportunity for all.

The program’s primary service area is South King County, with participants also coming from Tacoma and South Seattle. South King County’s demographic composition includes a significant

proportion of underrepresented communities, making it a critical focus for recruitment. The HVAC Institute, located in downtown Kent, provides an accessible training site within walking distance of the Kent Transit Center and major highways. This location ensures that participants can attend classes without transportation barriers, which is a common challenge for many in economically vulnerable communities. ECC's community engagement efforts include partnerships with organizations such as the NAACP, El Centro de la Raza, Africatown, and the Department of Veterans Affairs to ensure broad outreach and inclusive recruitment.

The HVAC Training and Career Preparation Academy operates two cohorts annually, with plans to expand to additional cities and offer more frequent training sessions. Each cohort, free to participants, has 12 participants and lasts 12 weeks, providing both classroom instruction and hands-on training. The classes, both soft skill and technical sessions, are in the evenings to cater to working adults, with lab sessions on Saturdays. There are 12 technical classes, 8 soft skills classes and 3 labs. The program is staffed by experienced professionals, including Dave Norman, a seasoned HVAC technician with decades of teaching experience, and his wife and business partner Kim Norman, who ensures the technical courses run smoothly and makes delicious meals for our participants. Paco and Shanna from SJI handle the direct services and career navigation. These services are designed to minimize attrition and ensure participants can fully engage in the program during and well after. Support continues for up to one-year post-graduation, ensuring a smooth transition to employment or further training opportunities. Finally, ECC provides administrative support and community partnerships to further enhance program delivery. The program's curriculum is guided by the National Center for Construction Education and Research (NCCER) standards, which provide a robust foundation in HVAC principles, tools, and industry-specific math.

Through hands-on technical sessions, participants gain the foundational skills and knowledge required to pursue key industry certifications such as OSHA 10, EPA Type II and Core, and the City of Seattle Refrigeration and Air Conditioning license. These credentials not only qualify graduates for entry-level roles in HVAC, building operations, and related sectors, but also build a strong foundation for entering apprenticeship programs. ECC places a strong emphasis on apprenticeship as a proven pathway to family-sustaining careers and long-term advancement in the skilled trades. The training is intentionally designed to align with the expectations of both union and non-union apprenticeships, and ECC actively connects graduates with employers and programs that are committed to equity, diversity, and inclusive hiring practices.

The program's outcomes reflect its success in advancing equity and workforce development. To graduate, participants need to attend all classes on time and miss no more than 1 of each class, as detailed in our class expectations. They must also complete their OSHA training the first month and a half before graduation. Approximately 83% of participants graduate, with an increase in

apprenticeship interest in the last 2 years. Our target is 25% getting placed into apprenticeships in addition to others securing roles in HVAC, building operations, and appliance repair. These placements contribute to increasing diversity in fields where Black and BIPOC individuals are significantly underrepresented.

Beyond immediate job placement outcomes, the HVAC Training and Career Preparation Academy generates lasting impact for both participants and their communities. By promoting economic inclusion and enabling upward mobility, the program plays a critical role in disrupting cycles of poverty and underemployment. Its culturally responsive design ensures that participants feel seen, supported, and empowered, key factors in long-term success. Community referrals have become a powerful source of outreach, with increasing participation from the Afghan and African communities and even parent graduates referring their children to the program, demonstrating deep trust and intergenerational impact. In parallel, the program's alignment with clean energy initiatives contributes to environmental sustainability and prepares graduates to play an active role in building a greener future.

ECC's innovative workforce development and apprenticeship preparation model is gaining recognition as a promising framework for other regions. By dismantling systemic barriers, offering holistic support services, and building strong partnerships with employers and community-based organizations, ECC is shaping an inclusive, high-road workforce ecosystem. With a long-term vision to scale its impact, ECC is working to ensure that individuals from historically marginalized communities can equitably access and thrive within the clean energy economy.

## **APPENDIX B – CURRICULUM OUTLINE**

*Curriculum should be developed in consultation with apprenticeship partners and subject matter experts to ensure it aligns with current industry standards and prepares graduates to meet or exceed the minimum qualifications for entry into an apprenticeship. To ensure recognized Apprenticeship Preparation Programs are adequately preparing participants to enter Registered Apprenticeship and be successful apprentices, preparatory training curriculum must meet the following requirements:*

- a. *Be a minimum of 80 hours in duration;*
- b. *Employability skill development shall not exceed 50% of curriculum hours. Employability skill development shall be defined as general employment skills (communication, professionalism, work ethic, etc.);*
- c. *Industry/trade specific skills and knowledge shall constitute at least 50% of curriculum hours. Industry/trade specific skills and knowledge shall be defined as hands-on training to develop manual, mechanical, or technical skills relevant to the occupation(s) the preparatory participant(s) are training to successfully enter, and which does not displace paid employees; and*
- d. *Industry/occupation specific safety training and education. (WSATC Policy 2012-03 Sec. II C)*

**Please use the format below for the program's curriculum outline. Identify all curriculum elements and provide primary learning objectives that apply to each course.**

**Please copy and paste the format below to add additional course sections and/or primary learning objectives as needed.**

### **Technical Courses**

1. Intro, Basic Electrical Theory, Ohms Law – 3.5 Hours

Curriculum Elements:

- ☒ Industry/occupation specific safety training and education
- ☐ Employability skill development
- ☒ Industry/trade specific skills and knowledge

- a. Topics – This lesson covers the fundamentals of electricity, including voltage, current, resistance, and how they relate through Ohm's Law ( $V = IR$ ). Participants will learn how electricity flows in a circuit and apply basic calculations used in real-world electrical and HVAC work.

2. Study Questions, Motors / Hands on Motor, Capacitors – 3.5 Hours

Curriculum Elements:

- ☒ Industry/occupation specific safety training and education
- ☐ Employability skill development
- ☒ Industry/trade specific skills and knowledge

- a. Topics – Participants review key motor concepts and engage in hands-on learning with different motor types. The lesson includes capacitor function and application, reinforcing understanding through guided study questions.

3. Motor Quiz, Variable Speed Motors, Constant Torque Motors – 3.5 Hours

Curriculum Elements:

- ☒ Industry/occupation specific safety training and education
- ☐ Employability skill development
- ☒ Industry/trade specific skills and knowledge

- a. Topics – This session includes a motor quiz to assess knowledge, followed by a breakdown of motor types, including variable speed and constant torque motors, and how they impact HVAC system performance.

4. Furnace, Electrical Hands-on Troubleshooting – 8.5 Hours

Curriculum Elements:

- ☒ Industry/occupation specific safety training and education
- ☐ Employability skill development
- ☒ Industry/trade specific skills and knowledge

- a. Topics – An in-depth, hands-on lab where students troubleshoot common furnace electrical issues. This session builds diagnostic skills using real equipment and service scenarios.

5. Color Code, Symbols, Electrical Troubleshooting – 3.5 Hours

Curriculum Elements:

- ☒ Industry/occupation specific safety training and education
- ☐ Employability skill development
- ☒ Industry/trade specific skills and knowledge

- a. Topics – Students learn to read and interpret electrical wiring diagrams, color codes, and industry-standard symbols, preparing them for practical troubleshooting tasks.

6. Heat Loss/Gain, Sizing Systems – 3.5 Hours

Curriculum Elements:

- ☒ Industry/occupation specific safety training and education
- ☐ Employability skill development
- ☒ Industry/trade specific skills and knowledge

- a. Topics – This lesson covers how to calculate heat loss and gain in residential/commercial buildings and how those values inform properly sizing HVAC systems.

7. Size Ductwork, Velocity & Static Pressure – 3.5 Hours

Curriculum Elements:

- ☒ Industry/occupation specific safety training and education
- ☐ Employability skill development
- ☒ Industry/trade specific skills and knowledge

- a. Topics – Participants explore the principles of duct sizing, airflow velocity, and static pressure, learning how to design efficient duct systems that meet system requirements.

8. High Efficiency Gas Furnace Operation / Hands-On – 3.5 Hours

Curriculum Elements:

- ☒ Industry/occupation specific safety training and education
- ☐ Employability skill development
- ☒ Industry/trade specific skills and knowledge

- a. Topics – Students examine the operation and components of high-efficiency gas furnaces, reinforced with hands-on activities focused on inspection and testing.

9. Advanced Electrical, Gas, Airflow Troubleshooting – 8.5 Hours

Curriculum Elements:

- ☒ Industry/occupation specific safety training and education
- ☐ Employability skill development
- ☒ Industry/trade specific skills and knowledge

- a. Topics – An advanced troubleshooting lab that integrates electrical, gas, and airflow systems, allowing students to practice diagnosing complex HVAC problems.

10. Zoning Systems, Indoor Air Quality – 3.5 Hours

Curriculum Elements:

- ☒ Industry/occupation specific safety training and education
- ☐ Employability skill development
- ☒ Industry/trade specific skills and knowledge

- a. Topics – This lesson introduces zoning systems for HVAC and explores technologies that improve indoor air quality, including filtration, ventilation, and humidity control.

#### 11. Thermal Dynamics, Heat Transfer – 3.5 Hours

Curriculum Elements:

- ☒ Industry/occupation specific safety training and education
- ☐ Employability skill development
- ☒ Industry/trade specific skills and knowledge

- a. Topics – Covers the basic principles of thermal dynamics and how heat transfer occurs in HVAC systems, including conduction, convection, and radiation.

#### 12. Study Questions, Application Questions, Install Procedures – 3.5 Hours

Curriculum Elements:

- ☒ Industry/occupation specific safety training and education
- ☐ Employability skill development
- ☒ Industry/trade specific skills and knowledge

- a. Topics – A review session focusing on knowledge checks, applied questions, and step-by-step HVAC installation procedures to reinforce real-world readiness.

#### 13. Service, Precision Tune Up, Hands-On Super Heat, Sub-Cooling, Mini Splits – 3.5 Hours

Curriculum Elements:

- ☒ Industry/occupation specific safety training and education
- ☐ Employability skill development
- ☒ Industry/trade specific skills and knowledge

- a. Topics – Hands-on training in performing service tune-ups, measuring superheat and sub-cooling, and working with ductless mini-split systems.

#### 14. Brazing: Copper/Alum; Heat Pump, Air Flow, Checks – 3.5 Hours

Curriculum Elements:

- ☒ Industry/occupation specific safety training and education

- ☐ Employability skill development
- ☒ Industry/trade specific skills and knowledge

- a. Topics – A full-day lab on brazing copper and aluminum tubing, with additional instruction on heat pump operation, airflow verification, and performance checks.

#### 15. System Capacity Checks, Heat Mode – 3.5 Hours

Curriculum Elements:

- ☒ Industry/occupation specific safety training and education
- ☐ Employability skill development
- ☒ Industry/trade specific skills and knowledge

- a. Topics – Students learn to evaluate system performance by checking heating mode capacity, ensuring systems meet expected output and efficiency standards.

### Soft Skills Courses

#### 1. Fundamentals for Success - 2 Hours

Curriculum Elements:

- ☐ Industry/occupation specific safety training and education
- ☒ Employability skill development
- ☐ Industry/trade specific skills and knowledge

- a. Topics – This session will cover effective communication, body language, HVAC, and the different paths available within the climate sector. They will also learn what it takes to be a part of a team as well as exploring culture and its dimensions.

#### 2. Resumes, Cover Letters and Applications - 2 Hours

Curriculum Elements:

- ☐ Industry/occupation specific safety training and education
- ☒ Employability skill development
- ☐ Industry/trade specific skills and knowledge

- a. Topics – This session will cover preparing an effective resume, cover letter, and different application types.

#### 3. Digital Literacy - 2 Hours

Curriculum Elements:



- ☐ Industry/occupation specific safety training and education
- ☒ Employability skill development
- ☐ Industry/trade specific skills and knowledge

- a. Topics – In this session, participants will receive their laptops, and the instructors will cover digital literacy and how it can be used in the workplace.

#### 4. Research, Networking & Customer Service - 2 Hours

##### Curriculum Elements:

- ☐ Industry/occupation specific safety training and education
- ☒ Employability skill development
- ☐ Industry/trade specific skills and knowledge

- a. Topics – This session will cover workplace expectations, personal and work boundaries, program research (apprenticeship specific) and networking. In addition, they will cover leveraging informal interviews, dealing with difficult coworkers, and good customer service standards.

#### 5. Interview Preparation - 2 Hours

##### Curriculum Elements:

- ☐ Industry/occupation specific safety training and education
- ☒ Employability skill development
- ☐ Industry/trade specific skills and knowledge

- a. Topics – This session will cover the interview process from what employers cannot ask, bringing and building a growth mindset, dress code, and professionalism. It also covers types of interviews, behavioral questions, and the STAR technique.

#### 6. Mock Interviews - 2 Hours

##### Curriculum Elements:

- ☐ Industry/occupation specific safety training and education
- ☒ Employability skill development
- ☐ Industry/trade specific skills and knowledge

- a. Topics – In this session, participants will meet with an instructor to conduct mock interviews

#### 7. Mock Interviews Debrief and Feedback - 2 Hours

Curriculum Elements:

- ☐ Industry/occupation specific safety training and education
- ☒ Employability skill development
- ☐ Industry/trade specific skills and knowledge

- a. Topics – In this session, participants will meet with the instructor one on one and receive feedback from the previous session of mock interviews.

8. Resume Drafts and Workshop - 2 Hours

Curriculum Elements:

- ☐ Industry/occupation specific safety training and education
- ☒ Employability skill development
- ☐ Industry/trade specific skills and knowledge

- a. Topics – In this session, participants will finalize their resumes, review what they have learned so far, and contemplate two questions: Why did you apply to this program? And What do you hope to do with this training now that it is over?

Teri Gardner 5-19-25

RB

Preparatory Program Name:	HVAC Training and Career Preparation Academy	Total Number of Participants:	12
		Total Participant Graduates:	0
Reporting Period, Earliest Date:	3/17/2025	Total Withdrawals/Incomplete:	1
Reporting Period, Latest Date:	6/7/2025	Total Grad's Articulated into Reg' Apprenticeship:	0

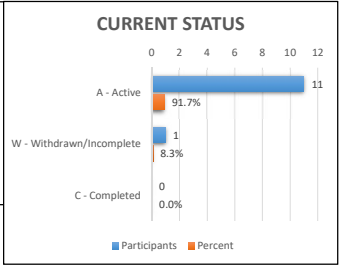
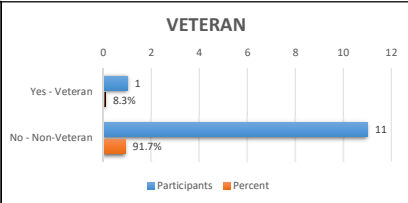
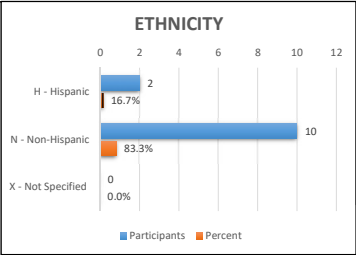
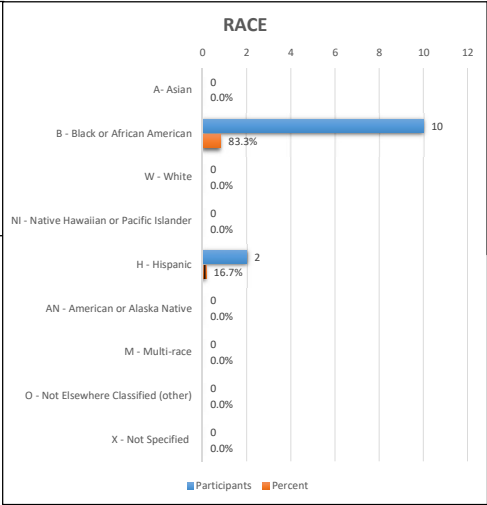
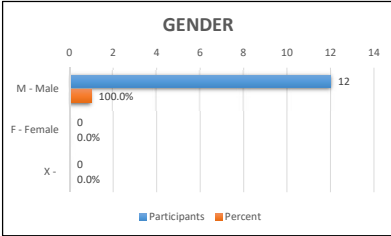


\*Please refer to the instructions tab for information on how to properly complete this document.

Participant Information - Total of Cohorts										Registered Apprenticeship Articulation Information			
		YYYY/MM/DD	M,F,X	A,B,W,NI,H,H,AN,M,O,X	H,N,X	Yes,No	YYYY/MM/DD	A,W,C	YYYY/MM/DD	YYYY/MM/DD			
Last Name	First Name	Birth	Gender	Race	Ethnicity	Veteran	Cohort Start Date	Current Status	Graduation Date	Registered		Apprentice	
		Date								Apprenticeship Name	Occupation	Date of Registration	ID Number
12	12	12	12	12	12	12	12	12	0	0	0	0	0

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Articulation Rate  
0.00%



*Teri Gardner 5-19-25*

## Memorandum of Understanding

Between

Construction Industry Training Council of Washington

And

Emerald Cities Collaborative Pre-Apprenticeship for HVAC

This agreement between the Construction Industry Training Council of Washington (CITC) and the Emerald Cities Collaborative (ECC) is made to provide pre-apprenticeship HVAC graduates with the option to receive direct entry into CITC's HVAC apprenticeship program. It is the intent of this cooperative effort to provide the student with a streamlined and expedient application process. Now, therefore, it is agreed by and between the parties as follows:

1. Waiver of application requirements specified in Section 3 of this agreement will be granted to ECC graduates by CITC's HVAC apprenticeship committee.
2. Waiver of application requirements means that ECC program graduates who meet the criteria identified below in Section 4 of this document may bypass the standard apprenticeship application prerequisites and selection process in CITC's HVAC apprenticeship standards.
3. Waiver of standard apprenticeship application prerequisites and selection process is contingent upon the cooperation of the two institutes.
4. Requirements for waiver of application requirements include:
  - a. ECC will appear on the transcript and application.
  - b. Direct Entry of the following application requirements will only be given for students who complete all ECC program courses.
5. Students must complete the ECC program in its entirety and completion certificates to be eligible for the waiver of application prerequisites stated in Section 3 of this agreement.

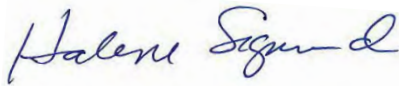
6. Both parties agree to evaluation this agreement every 3 years and in the contact of students benefits, program efficiency and effectiveness. ECC will maintain its level of quality as determined by the CITC program evaluation.
7. This agreement shall begin November 1, 2024.

The undersigned parties accept and approve THIS AGREEMENT

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Winnie Wakaba, Economic Inclusion Manager  
Workforce Development – ECC

Date



10/10/2024

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Halene Sigmund, President  
Construction Industry Training Council of Washington

Date



*Teri Gardner 5-19-25*

595 Monster Road SW, Suite 100 Renton WA 98057 425 .271.5900 Fax 425.271.4985 seattlepipetrades.org

## Memorandum of Understanding

Between

Seattle Area Pipe Trades Apprenticeship

And

Emerald Cities Collaborative Pre-Apprenticeship

This agreement between the Seattle Area Pipe Trades Apprenticeship (SAPT) and the Emerald Cities Collaborative (ECC) is made to provide pre-apprenticeship graduates the option to waive the math prerequisite otherwise necessary to apply to the Seattle Area Pipe Trades Apprenticeship program. It is the intent of this cooperative effort to provide the student with a streamlined and expedient application submittal reflecting the confidence in ECC's screening and training.

Now, therefore, it is agreed by and between the parties as follows:

1. Waiver of application requirements specified in Section 3 of this agreement will be granted to ECC graduates by Seattle Area Pipe Trades Apprenticeship. Waiver of application requirements means that ECC program graduates who, because of the quality of the screening and preparation at the ECC program, meet criteria identified below in Section 2 may bypass the standard Seattle Area Pipe Trades Apprenticeship application prerequisites.
2. Waiver of application requirements does not constitute direct entry, because the candidates must demonstrate skills and abilities acquired through the ECC program in hands-on testing and interviews. Waiver of application requirements is contingent upon the joint cooperation of the two institutes.
3. Requirements for waiver of application requirements include:
  - a. The ECC HVAC Training and Career Preparation Academy will appear on the SAPT application.
  - b. Waiver of the following application requirements will only be given for students who complete all ECC program courses, graduate, and receive a completion certificate.
  - c. Students must demonstrate proficiency in basic math fundamentals as taught by ECC— specifically fractions and decimals (Or waived if received an 80% on ECC's completion of program).
4. Students must complete the ECC program in its entirety and submit a graduation certificate and sufficient documentation of math grade in lieu of submitting application prerequisites as outlined in Seattle Area Pipe Trades' program standards to be eligible for the waiver of application prerequisites stated in Section 3.
5. Both parties agree to evaluate this agreement every 3 years and in the context of students benefits, program efficiency and effectiveness. ECC will maintain its level of quality as determined by the Seattle Area Pipe Trades Apprenticeship program evaluation.
6. This agreement shall begin October 7, 2024.

The undersigned parties accept and approve THIS AGREEMENT



01.21.25

Date

Meishka L. Mitchell, AICP, PP  
President & CEO  
ECC



3/31/25

Date

PJ Moss  
Training Coordinator  
Seattle Area Pipe Trades