Low Income Energy Efficiency (LIEE) Program
Workforce Education and Training Pilot
Final Report

LOW INCOME ENERGY EFFICIENCY PROGRAM WORKFORCE EDUCATION AND TRAINING PILOT FINAL REPORT

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LOW INCOME ENERGY EFFICIENCY PROGRAM WORKFORCE EDUCATION AND TRAINING PILOT FINAL REPORT

1. Workforce Education and Training Pilot Executive Summary

1.1. Recruitment Efforts

1.1.1. Please provide a narrative account of your recruitment effort during the course of this pilot, including the demographic breakdown of your recruit pool.

CityBuild Academy partners with a network of community-based organizations (CBOs) to provide recruitment and screening services to identify eligible San Francisco residents who are interested in the field of construction and green building. The CBOs are strategically selected based on geographic focus and ability to reach underserved communities, such as residents of public housing, the limited English-proficient population, and formerly incarcerated individuals. Each CBO maintains recruitment goals based on geography and neighborhood representation, female participation, and Workforce Investment Act (WIA) eligibility. As the pilot administrator, CityBuild staff provides overall coordination with its partners to ensure that these goals are met. CityBuild's partner CBOs include Young Community Developers, Mission Hiring Hall, Charity Cultural Services Center, and Florence Crittenton Services/Anders & Anders Foundation. Mission Hiring Hall acts as the overall sector coordinator on behalf of CityBuild Academy.

Cycle 10 of CityBuild Academy, which was the feeder into the first LIEE program, started with 38 students total. Of the 38 students, there were 7 women, 6 residents of public housing, 9 certified with the JobsNow Program, and 12 certified with the WIA Program. The ethnic/racial representation is consistent with the diversity of San Francisco: 16 Asian/Pacific Islander (API) students, 9 Latino, 9 African American, 3 white, and 1 student identifying as multi-racial. In terms of neighborhood distribution, 17 zip codes in San Francisco were represented in this class. Three students were dismissed during the cycle for attendance issues.

Cycle 11 also started with 38 students, including 7 female students. Seventeen students identified as API, 13 African American, 4 Latino, and 4 white. Fifteen zip codes throughout San Francisco were represented, with the largest cohort from the Southeast Sector of the City and the Chinatown/North Beach area. Throughout the course of the Academy, 4 students were dismissed for attendance reasons.

1.1.2. Please summarize the most successful practices utilized.

CityBuild Academy has evolved significantly over the past 5 years. It has expanded from 12 weeks to now nearly 18 weeks of training. It has continued to add certificate training programs to its core curriculum to ensure graduates are more marketable, including OSHA-10, forklift, scissor lift, fall protection, confined space, HAZWOPER, etc. It has expanded its recruitment base over the years and now engages with all corners of the City. CityBuild continues to increase the number of trades partners to provide a pipeline into a greater diversity of apprenticeship programs. Given this successful model, CityBuild proposed to

integrate a 2-week LIEE program within the structure of the Academy, which was unique compared to other WE&T initiatives.

1.1.3. Describe the recruitment challenges experienced during the course of the pilot. What modifications were made during the progression of this pilot to address those specific challenges?

CityBuild's CBO partners, selected for their track record in providing workforce services to our target population, conduct recruitment on behalf of CityBuild Academy, and did so for the LIEE pilot as well. Given the job placement support into union apprenticeships and engagement with LIEE contractors, along with the state of the economy and high unemployment rate, the last two cycles of the Academy saw tremendous interest. CityBuild staff, the Academy instructors, and CBO partners met periodically to assess the program in order to fine-tune our practices, including recruitment strategies.

Ninety-one students were recruited for Cycle 1, 129 for Cycle 11. The recruits participated in a week-long Job Readiness Training to assess their preparedness for the Academy, and then went through a panel interview process with CityBuild staff, labor representatives, and CBO staff. Upon completing those steps, 38 students of the recruited 91 in Cycle 10, and 38 of the 129 recruited for Cycle 11, were asked to join the Academy.

1.1.4. Based on the experience of executing the pilot, please provide your recommendations for future recruitment strategies. Please include a) the most successful and effective practices, b) foreseeable obstacles and challenges in implementing these strategies, c) proposed solutions to address each challenge including candidate prescreening recommendations (i.e. contractor/IOU requirements like clean DMV, ability to pass background check, etc.)

The integration of LIEE into CityBuild Academy facilitated a broader instructional and hands-on teaching model than one that would have focused strictly on energy efficiency. It also provided a number of certificates that enabled graduates to be more marketable upon graduation. For students entering into traditional construction trades, it broadened their thinking around home performance and weatherization practices. The requirements set for forth the Academy worked well in screening LIEE participants as well, with the only exception being the more stringent background check requirement for LIEE job placement.

Challenges emerged as students weighed the possibility of entering into the LIEE field as an Energy Specialist (ES) or Weatherization Specialist (WS), or joining a union apprenticeship program. Given the salary structure of an entry-level ES and WS worker, whereby employees earn income based on the number of homes serviced, many students opted to stay on the traditional construction apprenticeship path. In looking ahead, CityBuild CBOs should conduct recruitment specific to students interested in the LIEE track, where their skills may translate more readily into ES and WS-type positions, as opposed to traditional construction. The work cultures between the two are quite different, and some students may thrive in an environment where there is greater flexibility, involves travel and independence, and is more dependent upon sales and marketing savvy. Ultimately, though, it may require that the energy efficiency market matures to a point where salaries and benefits packages are more competitive.

1.2. Prerequisite Education/ Soft-Skills Training

1.2.1. Please identify any issues or concerns experienced with the recruiting class in terms of attendance, behavior, incoming level of education, and soft skills preparation.

CityBuild Academy maintains a strict attendance and punctuality policy, modeled after a traditional construction work schedule and environment. Attendance is required at all scheduled classes, and written verification and advance notification is necessary to excuse any absences. CityBuild also utilizes a "ding" system, which penalizes students for conduct that would be unacceptable on a construction site: being 5 minutes late for trainings, use of cell phone during training hours, disruptive behavior, and inappropriate dress. A pattern of "dings" or absences will result in a disciplinary action or dismissal from the Academy. CityBuild works with the support of our partner CBOs in monitoring attendance, and intervening with student when necessary. As CityBuild has refined its practices over the course of 11 cycles, our attrition rate has improved.

1.2.2. Identify the most crucial soft-skills that were instrumental and helpful for your recruit cohort.

CityBuild Academy features a robust soft skills and life skills component that addresses decision-making, time management, setting priorities, money management, and understanding job expectations and work culture. The high level of stress and physical nature of the construction and energy efficiency sector requires employees with inter-personal skills, confidence, and principled decision-making in order to thrive. CityBuild Academy addresses these components through formal classes, but also builds these principles into all of the training components of the Academy.

1.2.3. Identify any pre-requisite or level-setting courses that were instrumental and helpful for your recruit cohort.

CityBuild Academy students must possess a high school diploma or GED, but does not require any particular pre-requisite coursework. Prior to enrollments, incoming students take a math and ESL assessment to determine the appropriate coursework within the Academy. All CityBuild students were eligible to participate in the LIEE course, though we did advise participants that the background check for employment with LIEE contractors would be very rigorous.

1.2.4. Based on your experience, please identify, going forward, a) which soft skills training courses should be provided/required prior to enrolling in such a pilot or curriculum, and b) which pre-requisite or level-setting courses should be provided/required prior to enrolling in such a pilot or curriculum.

CityBuild Academy incorporates a soft skills and life skills training, described in more detail above. Given that the field of construction, green building, and energy efficiency are one of the few remaining for those jobseekers who lack a college degree and face other barriers to

sustainable employment, CityBuild attempts to minimize the number of hard requirements, while maintaining those that are necessary for the field.
The application for employment for LIEE contractors are quite detailed, and one contractor made a suggestion that filling out applications completely and accurately should be a component of the Academy. This will be shared with the CityBuild instructors and industry specialists to build into the soft-skills component of the class. Also, there needs to be a more robust sales and marketing component of the Academy to develop the skills necessary to be a successful ES.

1.3. Logistical Efforts

1.3.1. Please describe the logistical challenges (curriculum delivery delays, enrollment issues, other complications, etc.) experienced during the course of the pilot. Specify any collaborative efforts between your program and IOU training personnel. What modifications were made during the progression of this pilot to address those specific challenges?

There was strong collaboration between the partners engaged in the pilot. The department chair and faculty of CCSF's Engineering and Technology Departments adapted its existing curriculum and course structure to create a 2-unit course entitled Residential Energy and Efficiency Measures, and taught both cycles of the LIEE training. Representatives from PG&E's Energy Partners Program, the CPUC, and faculty from the Training Center in Stockton were all engaged during the training, visiting the classroom to talk the students and encourage them on a career path within green construction, home performance, and energy efficiency.

In preparation for the second LIEE cycle, PG&E and CCSF further collaborated to refine the curriculum in order to best prepare for the ES training in Stockton. The LIEE contractors with contacts to service homes in San Francisco, QCS and Synergy, were also active during the training, visiting the classrooms to talk about job opportunities, accommodating ride-alongs with their staff, and coordinating during the application, interview and hiring process. The extent to which the partners were responsive and engaged helped mitigate any potential delays or complications.

1.3.2. Based on the experience of executing the pilot, please provide best practices including potential solutions for any of the logistical concerns described above for future cohorts.

(1) Continued curriculum refinement consistent with the standards of DOE, CPUC and PG&E
(2) Early engagement with LIEE contractors during the class, including early screening of students with background check concerns
(3) Building-in time for job shadowing/ride-alongs either prior to the LIEE course to increase student knowledge of the work
(4) Tailored outreach for students interested in the weatherization field, who have an understanding of the salary structure for ES and WS positions
(5) Expand the program beyond low-income eligible measures, to increase opportunities through the training and in the field of energy efficiency

1.4. Curriculum Design

1.4.1. Please present your latest LIEE pilot curriculum, complete with course description, class summaries and length of each course. Please include the IOU specific training courses with course description, class summaries and length of each course that supplemented your pilot curriculum.

Please refer to the attachments.

1.4.2. Please identify any changes or diversions from the originally envisioned and implemented curriculum.

The curriculum for the first LIEE cycle was created by CCSF's Engineering and Technology Department faculty based primarily on the PG&E Energy Partners Program's California Conventional Home Weatherization Installation Standards Manual, a 5-part CD Instructional Series developed by the Department of Energy as part of their Weatherization Assistance Program Standardized Curriculum, and from existing CCSF curriculum.

Following the completion of the first cycle, CityBuild coordinated a meeting between the CCSF instructors who taught the LIEE class, and instructors with the PG&E Energy Training Center. They shared curriculum that is utilized at the Training Center and provided guidance on how best to integrate materials that would prepared students for the Energy Specialist testing. The curriculum for the second cycle of LIEE reflected these changes. As with the first cycle, all students who attended the 3-day ES training in Stockton passed the ES test.

1.4.3. If a statewide Community College-level Low Income Residential Energy Efficiency and Weatherization curriculum were to be implemented, please identify your recommendations on how to structure the course curriculum.

Curriculum for a statewide program should mirror as best as possible the instructional materials utilized at PG&E's Training Center. The curriculum at the Training Center best prepares students with the practical knowledge necessary to be successful in the field. The curriculum should also be expansive enough to address fundamental principles around energy use and green building, so that employees in the field are equipped with the substantive knowledge-base of the broader green movement.

1.4.3.1. Please include the recommended a) pre-requites courses, b) Soft skills training courses, c) full community college curriculum and d) any additional off campus training. (Please include full descriptions, summaries and recommended length of each course/training identified above.)

Discussed in other sections.

1.5. Classroom to On-the-Job Experiences

1.5.1. Please explain how in-class skills were applied in recruit on-the-jobs internships. Also, include a narrative summary of the on-the-job training/shadowing (hours required for completion) and any employer/student feedback.

All 14 students in the first cycle of LIEE participated in job-shadowing with either QCS or Synergy. Students accompanied crew supervisors in visiting between 1-3 homes that were participating in the LIEE program and receiving installation of weatherization services. For the second cycle, the timeline for CityBuild Academy, the LIEE course, and the scheduled 3-day ES training in Stockton was extremely tight. Given that the ride-alongs usually took 1 full-day and took students out of class, CityBuild staff and instructors opted to bypass the ride-alongs and invited QCS and Synergy staff to class directly to initiate the application process.

In terms of student feedback, one of the students hired from the first LIEE cycle had this to say about the program:

> LIEE taught me all about energy usage in a home and how to reduce energy usage. This course taught me everything I needed to know to become an Energy Specialist. The LIEE course, along with Citybuild Academy, looked really good on my resume. During my interview, my knowledge of energy savings impressed the employer so much that he hired me over several other candidates. Now, as an Energy Specialist, I am making extremely good money in a stable field. This would not have been possible without the LIEE course.

Another student, also hired through the first cycle, echoed the benefits of the program in preparing him for the field:

> Green thinking is the future, and if you are looking for a long term career, then Energy Specialist is a solid choice. LIEE was a course that prepared me for the rigorous Energy Specialist training in Stockton. Citybuild Academy was also a great tool because they provided the opportunity to enroll in the highly competitive Energy Specialist training program to get you certified. After being certified as an Energy Specialist, I found a job within a week. While the economy is in a recession, this green field is growing and the demand for Energy Specialists are rising. LIEE is your chance to get your foot in the door to a booming field where the possibilities are endless.

1.5.2. If applicable, identify any challenges faced on the job but not addressed through the in-class skills learned. Were these skills addressed through other means (IOU specific training, other pre-requisite courses, etc.)?

One of the primary skills necessary to be an Energy Specialist is the sales and marketing aspect. While CityBuild Academy builds in a component to prepare students for interviews, it does not address skills such as building customer rapport. Moving forward, this should be a component of the soft-skills training. While the program was able to provide some

practice for the hands-on duties of a WS, such as conducting the blower door test, attic insulation, etc., these practices are taught on-the-job by the LIEE contractors.

1.5.3. Please provide the participation rate of students who went on to complete the on the job training/shadowing.

All 14 students in the first cycle of LIEE participated in job-shadowing with either QCS or Synergy. Students accompanied crew supervisors in visiting between 1-3 homes that were participating in the LIEE program and receiving installation of weatherization services. As discussed above, there were no ride-along during the second cycle.

1.5.4. Based on the experience of executing the pilot, please provide your recommendation for the on the job contractor training/shadowing experience. (Include the specific areas and measures that each cohort should experience, the length of the training/shadowing, and the timing of the experience within the overall curriculum (mid course, before or after the IOU specific training, etc.?)

Ideally, the job shadowing would take place during the CityBuild Academy itself, prior to start of the LIEE course. Students do visit construction projects and get a feel for a construction worksite during the hands-on portion of the Academy. The day-to-day responsibilities of an ES or WS worker differ greatly from a traditional tradesworker, and gaining exposure to that early on could encourage students to go down that path. Students who spent the entire day with a QCS or Synergy WS crew gave positive feedback on the experience. A ride-along with ES workers would also be beneficial. However, given the average size of CityBuild Academy, with between 35-40 students, and that a WS crew can typically accommodate only 1 student at a time, the logistics would be challenging.

1.6. Enrollment Levels

1.6.1. Please comment on whether enrollments have decreased since the beginning of the semester, and explain.

The enrollment for Cycles 10 and 11 of CityBuild Academy experienced a normal rate of attrition compared to past cycles. Cycle 10 started with 38 students, and graduated 35. For Cycle 11, the figures were 38 and 34. As the LIEE course was an accelerated 2-week course, the enrollment figures remained steady throughout both cycles. The first cycle of LIEE had 14 participants while the second cycle enrolled 9.

1.7. Final Hiring Information

1.7.1. Please present the final hiring data of the pilot participants. Include any recommendations on ways to increase these numbers and reduce barriers to LIEE employment.

In Cycle 10 of the CBA, 14 students took the 2-week LIEE course at CityBuild Academy. Seven students attended the 3-day ES training in Stockton, and all 7 passed the exam. Of

the 7, 4 were offered positions with QCS (2 ES, 2 WS), and 3 with Synergy. Two of the QCS hires remain with the company and are now ES, WS and NGAT-certified. The other 2 hires chose to accept positions in other fields; one of the students joined the ironworker's apprenticeship program and is now performing rebar work, while the other is a Project Controls Specialist with Jacobs Engineering at the PUC's Sunnydale EPB Tunnel Project. The three Synergy hires started work as an ES, but all three eventually transitioned to full-time work as Environmental Field Technicians with Shaw Environmental at the Naval Shipyards Project in San Francisco. To date, 28 of the 34 graduates of Cycle 10 were placed into jobs, primarily into union apprenticeship programs.

In Cycle 11, 9 students participated in the LIEE course. Of the 9, 6 students attended the 3-day ES training in Stockton. Three students did not attend; one student was living in a transitional housing facility with strict living conditions and did not provide him permission to leave San Francisco for 3 days, another students went to work as an apprentice waterproofer with Local 40, and a third student was supplementing his CityBuild Academy instruction with other courses, and had to complete his final exams during that week. The six students who attended the training in Stockton and all passed the ES exam. Of the six students, one student was hired by QCS as a telemarketing specialist. Of the remaining five, four chose to join the Laborers apprenticeship program, while the fifth joined the Carpenters apprenticeship.

2. Appendix: LIEE WE&T Tables

LIEE- Table 1- WE&T General + Schedule

LIEE- Table 2- WE&T Budget