

Berkeley Climate Equity Fund Pilot Resilient Home Retrofits Program

Lessons Learned on Residential Decarbonization
September 2026

Introduction

In 2021, the Berkeley City Council committed to achieving net-zero emissions citywide by 2045. With [buildings responsible for 39% of the city's emissions](#), accelerating decarbonization in the built environment is essential. To address this, the City of Berkeley adopted the [Berkeley Existing Building Electrification Strategy](#), which outlines a roadmap to equitable decarbonization, and developed the Berkeley Equity Guardrails, a framework designed to ensure that community benefits are a co-equal goal to emissions reductions.

In 2021, the Berkeley City Council also allocated \$600,000 for the Climate Equity Fund (CEF) pilot to spur equitable climate action across three program areas:

- Program Area 1: Home Electrification
- Program Area 2: Electric Mobility
- Program Area 3: Community Engagement

This report focuses on Program Area 1: Home Electrification. Information on Electric Mobility (Program Area 2) and Community Engagement (Program Area 3) can be found on the [City of Berkeley's Building Electrification](#) webpage.

Resilient Home Retrofits Program Executive Summary

This report outlines lessons learned from the retrofits supported by Program Area 1: Home Electrification. Program Area 1 received \$250,000 in funding to accelerate decarbonization retrofits in low- and moderate-income (LMI) residential buildings. Many LMI residents struggle to secure the upfront capital necessary for essential health and safety repairs, which often take precedence over decarbonization measures like heat pump water heaters (HPWHs), heat pump HVAC systems, or induction cooktops. The Climate Equity Fund pilot provided direct funding for decarbonization efforts and helped leverage other funding sources to complete any necessary safety repairs and install additional decarbonization measures. Pilot funding attracted additional investment in building decarbonization for LMI-serving properties while helping the City build capacity to support quality jobs and manage complex upgrades amid staffing and funding changes.

EQUITY GUARDRAILS

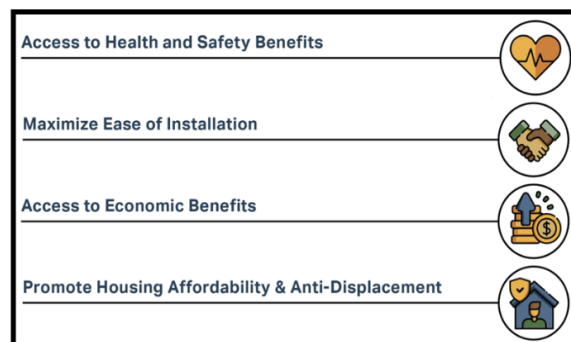


Figure 1: The City of Berkeley's four Equity Guardrails, meant to act as minimum standards that must be met in equitable electrification retrofit projects. The guardrails are a tool that can be used to inform policy and program design to maximize community benefits. Graphic adapted from the City's Electrification Strategy.

Pilot Goals 2023-2026

- Improve the health, safety, and comfort in homes of residents most impacted by climate change by leveraging building decarbonization that enhances resilience, supports residents, and reduces greenhouse gas emissions
- Identify interested, income-eligible applicants and buildings for electrification upgrades
- Develop cost-effective project scopes that integrated electrification upgrades while also improving health and safety conditions for residents
- Identify the optimal funding stack for each project
- Train contractors on heat pump technologies and installation
- Ensure economic benefits reached contractors and workers by requiring prevailing wage when Climate Equity Funds paid for labor costs
- Coordinate with building residents, contractors, and the program team, providing technical assistance and project management

Project Team

- City of Berkeley's [Office of Energy & Sustainable Development \(OESD\)](#), located within the Planning Department, served as a project manager and coordinator.
- [Association for Energy Affordability \(AEA\)](#) provided technical and construction management assistance for multifamily building electrification projects.
- [BlocPower](#) provided single-family energy and electrification retrofits.
- [Northern California Land Trust \(NCLT\)](#) completed comprehensive health and safety upgrades, installed a heat pump water heater in one of the units and is expected to complete full electrification of the eight-unit property on Tenth Street by 2027

Lessons Learned at a Glance

Establishing a Project Pipeline

- Partner with retrofit administrators with a pipeline of upgrade-ready properties and established, trusted relationships
- Be realistic: older homes may require significant health and safety retrofits before electrification upgrades can be completed
- Use existing income verification processes or develop flexible eligibility verification

Balancing Scope, Budget, & Timeline

- Plan for complexity by building in flexibility for scope, timeline, and cost changes
- Fund project management for dedicated support from design through construction
- Simplify funding stacking and the associated reporting requirements
- Expand technical assistance for under-resourced buildings and provide clear, step-by-step information on how to decarbonize
- Set clear expectations on rebates and out-of-pocket costs

Workforce Availability, Trainings and High-Road Practices

- Provide sufficient funding to cover prevailing-wage cost premiums
- Support small contractors with training to navigate wage requirements
- Lower the cost of prevailing wage compliance through simpler verification

Four Project Sites¹



Casa Joaquin Murrieta (CJM) Student Housing

Building: Nonprofit student housing, owned by Greenlining Institute, for 40 low-income, first-generation UC Berkeley students of color

Lead Administrator: AEA

Retrofit: Heat pump installation, envelope efficiency improvements, new windows, and electrification-ready wiring upgrades.

CEF Funds: \$39,000 towards 3 Carrier Performance 38MURA heat pump HVACs with Carrier Performance Series FT4 air handlers and 3 SANCO2 heat pump water heaters



Walnut House Cooperative (WHC)

Building: 22-unit multifamily limited-equity cooperative

Lead Administrator: AEA

Retrofit: Heat pump installation, new refrigerators and kitchen upgrades, envelope and efficiency improvements, and updated wiring.

CEF Funds: \$62,000 towards 3 Sanco GS5 heat pump water heaters and circulation pumps, resistance heater swing tank and storage tank.



Low-Income Single-Family Home

Building: Single-family, income-qualified home

Lead Administrator: BlocPower

Retrofit: Heat pump installation, high-efficiency gas furnace installation, envelope improvements, electrical panel upgrade, and asbestos removal.

CEF Funds: \$10,000 towards a Mitsubishi Ductless PUZ Heat Pump and smart thermostats.



Tenth Street Apartments

Building: 8 unit subsidized affordable multifamily community land trust

Lead Administrator: Northern California Land Trust

Retrofit: Heat pump installation, new induction ranges and range hoods, new refrigerators, window replacements, electrical system upgrades, and building envelope and efficiency improvements.²

CEF Funds: \$83,300 towards electrification design, a Rheem ProTerra heat pump water heater and electrical circuit for unit G; R13 insulation in both buildings.

¹ Retrofits include scope beyond Climate Equity Fund dollars. See Table 1 for all retrofit measures.

² Tenth Street is continuing its scope, towards full electrification, beyond the CEF pilot timeline.

Major Implementation Lessons Learned

This pilot provided the City with an opportunity to catalyze much-needed investments in buildings that serve LMI residents while exploring how to integrate decarbonization measures within broader, holistic retrofits.

This report presents lessons learned in three key areas:

- **Establishing a Project Pipeline**
- **Balancing Scope, Budget, & Timeline**
- **Workforce Availability, Trainings, & High-Road Practices**

Establishing a Project Pipeline

This pilot focused on providing upgrades to residents earning up to 80% AMI. These parameters required the City and its partners to develop a project pipeline of homes that satisfied income eligibility thresholds, required retrofits that aligned with available incentives, and whose owners were able to cover any remaining funding gaps. Developing this pipeline required identifying buildings that met program criteria, assessing the level of interest from building owners and tenants for upgrades, creating an income verification process, and developing a viable proposed scope and budget.

Lesson 1: Leverage Existing Programs and Partnerships for Pipeline Identification

Both AEA and BlocPower began identifying potential projects via leads from existing programs. AEA is the administrator of rebates for several multifamily energy efficiency and decarbonization funding programs including the Low-Income Weatherization Program (LIWP), California's multifamily High-Efficiency Electric Home Rebate Act (HEEHRA) rebates, and the Bay Area Multifamily Building Enhancements Program (BAMBE), part of the Bay Area Regional Energy Network (BayREN) program offerings. AEA identified Berkeley properties from the LIWP and BAMBE waitlists to find potential candidates for the CEF.

Similarly, BlocPower served as the program administrator for Ava Community Energy's Health-E Communities Program and was already conducting outreach on behalf of the Health-E-Communities Program for residents across Alameda County. While the Health-E-Communities program accepted homeowners earning up to 120% AMI, CEF focused on serving residents at 80% AMI or below. As a result, BlocPower also cross-referenced potential projects with customers enrolled in CARE (California Alternate Rates for Energy) or FERA (Family Electric Rate Assistance) income-qualified utility rates. For BlocPower, the Health-E Communities Program was the most productive channel for outreach, generating 19 leads.

BlocPower also conducted significant outreach through traditional marketing channels, such as phone banking, press releases and media stories, direct customer referrals, and website intake form. These methods, however, proved to be less effective in generating leads for pilot participation, particularly in identifying potential households who met income eligibility qualifications. Even so, these efforts remained important to ensure transparency and broaden awareness of the opportunity.

Ultimately, the project BlocPower secured for the CEF came through a referral from Spectrum Energy, as the implementer of the Low-Income Home Energy Assistance Program (LIHEAP). This site was subsequently also enrolled in the Health-E Communities program to leverage additional rebate funding for the project. Partnerships with repair programs already serving income-eligible households proved especially effective for identifying qualified projects.

Casa Joaquin Murrieta (CJM) entered the pipeline through an existing relationship: the Greenlining Institute, which owns the building and had previously worked with AEA. CJM is a student housing building that also offers a residential leadership program designed to advance racial equity for UC Berkeley students. The Greenlining Institute, a nonprofit advocacy organization focused on delivering benefits of climate action to communities of color, owns CJM and had previously worked with AEA on reports and policy recommendations for equitable building decarbonization. Greenlining approached AEA seeking rebates for window upgrades. With guidance and funding stacking, including CEF funding, AEA helped expand the window-replacement concept into a comprehensive electrification and efficiency project. This illustrates the importance of longstanding partnerships in identifying eligible and motivated project sites.

Lesson 2: Income Verification in Regulated Affordable Housing

Income verification was most straightforward for deed-restricted, subsidized affordable housing properties as they are required to regularly report tenants' income eligibility. At the Tenth Street Apartments, which are permanently affordable housing, owned and operated by the Northern California Land Trust (NCLT), the City relied on existing income documentation, making the verification process simple and efficient.

Lesson 3: Income Verification in Unregulated Affordable Housing

For market-rate properties, income verification was more challenging because tenants and owners were often hesitant to share private information. Various income eligibility verification methods were used, depending on the housing type and ownership structure. Cooperation from mission-driven owners helped avoid tenant privacy concerns. Owners who had already collected tenants' income information or who could verify eligibility using proxy methods made it possible to confirm income eligibility with minimal intrusion.

At CJM, Greenlining provides affordable student housing and a leadership academy for 40 students per year. The UC Berkeley student residents who live at CJM are selected because they are low-income, multi-racial first-generation college students. Greenlining was therefore able to gather documentation based on their own internal eligibility criteria to ensure that students in the building met 80% AMI guidelines.

The WHC does not have income eligibility requirements but is considered affordable due to its structure as a limited-equity cooperative building. The WHC Board was concerned with requiring residents to share personal income information and supporting documentation directly with AEA. To address these privacy concerns, AEA partnered with the Cooperative Board, which

worked with residents to collect income information, anonymize and aggregate the data, and obtain residents' self-certification within AMI brackets. The Board then certified that at least two-thirds of residents met the CEF income requirements.

Finally, BlocPower was able to qualify the single-family household via their participation in a proxy income-qualified program. The household was already enrolled in CARE (California Alternate Rates for Energy), a utility rate assistance program for income-qualified residents, and was referred to BlocPower from Spectrum, which provides energy efficiency upgrades to CARE recipients. Using the CARE program enrollment as a proxy for income verification eliminated the need for BlocPower to collect and store sensitive income documents and helped streamline the administrative process for BlocPower and the customer while also expanding access for income-eligible households. It is important to note, however, that enrolling in the CARE program may only initially require self-attestation rather than full-income documentation.

Moving Forward

To ensure public dollars for building retrofit programs targeting LMI residents flow to the intended populations, future programs should aim to reduce administrative burdens related to project pipeline identification and income verification.

Recommendations for future programs include:

- Rely on existing program pipelines -- such as home repair programs -- and partner with CBOs working directly with underserved communities.
- Where possible, partner with existing programs that already have income verification processes in place, such as affordable housing, and ensure local program rules can accept these to verify eligibility. Establish verification approaches rooted in flexibility, efficiency, and fairness that allows for the ease of fund distribution while ensuring that funds reach their intended recipients.
- At a regional level, move toward a universal application approach for income verification to streamline processes across programs and avoid duplication and burden on the individual tenants or owners.

Balancing Scope, Budget, & Timeline

Delays and scope creep are chronic issues that occur across the buildings industry; they are even more likely in holistic retrofits in existing buildings serving lower-income residents where there is a lot of deferred maintenance. The retrofits completed through the CEF were no exception. While the program was originally intended to be completed within two years, beginning in May 2023, the City and project teams needed to be more flexible, in order for the City and project team to maneuver through funding changes and delays, ensuring the goals of the pilot could be achieved and that a retrofit measures were installed.

(See Table 1 for full list of retrofit measures across projects).

Table 1: Retrofit Scopes- Retrofit scopes listed include all upgrade measures covered by the entire funding stack, not solely Climate Equity Fund dollars. Items funded fully or in part by the CEF are indicated by an asterisk (*).

	CJM Student Housing	WH Cooperative	Single Family Home	Tenth St. Apartments³
Electrification	Ducted heat pump HVAC system* Central heat pump water heater*	Central heat pump water heater*	Ducted heat pump HVAC system*	Heat pump water heater* HVAC heat pumps Induction stoves
Energy Efficiency	Variable speed recirculation pump Wall insulation Attic insulation Windows	Variable speed recirculation pump* Refrigerators Windows	Attic insulation Floor insulation Air Sealing Windows Smart Thermostats* High-efficiency gas furnace	Wall insulation* Windows Lighting upgrade Refrigerators
Electric Readiness	Electrical wiring & pre-wiring for future electrification	Electrical wiring	Panel upgrade	Electrical wiring* Panel upgrade
Health & Safety	N/A	N/A	- Asbestos removal	Seismic upgrades Foundation repair Balcony removal Plumbing upgrade Hardwired smoke/CO detectors Kitchen range hoods
Other	N/A	N/A	N/A	Resident relocation

Lesson 1: Integrating Health & Safety Retrofits

A barrier to upgrading existing buildings to be all-electric is significant health and safety repairs that need to be addressed, and that under-resourced building owners may struggle to afford.

At the Tenth Street Apartments, early project assessments revealed that to meet health and safety standards and maintain HUD voucher eligibility, balconies needed to be removed. As the project progressed, additional building health and safety issues arose requiring seismic safety retrofits, new stucco and concrete masonry unit (CMU) replacement, new plumbing pipes, panel upgrade, electrical rewiring, and foundation repair. Each remediation increased project costs and resulted in significant project delays. These delays were exacerbated by additional complications associated with a longer project timeline, such as staff attrition, design team and contractor turnover. In addition, during the design phases, the project team initially chose not to

³ The Tenth Street Apartments project has encountered several delays, and scope is subject to change.

hire a general contractor to save funds, but this meant that NCLT had to manage the project internally with limited capacity, which led to slower subcontractor coordination and delays in submitting permit applications. The necessary health and safety upgrades consumed much of the budget and the initial goal of full electrification seemed financially infeasible. Fortunately, additional funding was secured, and the project still aims to achieve full electrification, including upgrading the building electrical panel and installing heat pump water heaters, heat pump HVACs, and induction stoves in residents' units.

Tenth St. was not the only site with significant deferred maintenance, reflecting a broader trend across Berkeley's aging housing stock. BlocPower's single-family home project also required asbestos abatement once ducts were removed as well as a panel upgrade to accommodate the additional electrical load, which are both common health and safety barriers to full electrification.

Lesson 2: Building Owner & Tenant Considerations

For multifamily buildings, the CEF project team learned the importance of dedicated time for owner engagement and anticipating tenant impacts. Working in occupied buildings created challenges and potential disruptions for residents. For example, the CJM Student Housing retrofit required unoccupied unit access, and therefore required closing the housing to students for an entire year and timing the project to be completed by the end of summer break, to minimize tenant disruption and relocation costs. Due to the interior work for the upgrades, the Tenth St. project will also require tenant relocation for at least a portion of the retrofit. NCLT is working with residents to prepare them for construction and its associated impacts, while providing relocation assistance and covering the cost of temporary off-site housing for up to three months. In addition, one unit was kept vacant and served as temporary housing while upgrades are completed in the other units.

Even when resident relocation is not required, clear and consistent communication with residents was critical to a successful retrofit. In most multifamily buildings, a single property owner or manager has the authority to make capital project decisions on behalf of the building and its residents. At the WHC however, major project decisions required approval from the resident Co-op Board, which only met once a month. While this governance structure enabled tenant buy-in of these important upgrades to their homes, the timing of the board meetings contributed to delays, particularly as the project scope pivoted from the initial concept of installing a heat pump HVAC system to the ultimate decision of installing a centralized heat pump water heater. Throughout the process, AEA's dedicated project manager maintained close communication with the Co-op Board, the Co-op's maintenance team, and the contractor hired to install the heat pump water heater, helping to coordinate approvals and keep the project moving forward.

In the single-family sector, not only were there delays in identifying income-qualified homeowners in Berkeley, but there was also significant stalling between scoping and contracting. The homeowner worried that rebates might not fully cover the cost of the install and delayed the start of the project until they could find sufficient funding to cover the entire scope. The BlocPower team invested significant time addressing the owner's concerns, managing cost expectations, and relying on consistent follow-up to complete the project. Ultimately, the

homeowner chose to install a high-efficiency gas powered HVAC installed rather than a second heat pump HVAC for another floor in their home as the gas HVAC cost was fully covered by Spectrum's Low Income Home Energy Assistance Program (LIHEAP), another income-qualified energy-efficiency and weatherization rebate program. These dynamics varied by property type but consistently required intensive project and relationship management to build trust, maintain transparency, and adjust scopes in real time.

Lesson 3: Optimizing the Funding Stack

While the Bay Area has a wide range of effective efficiency and electrification incentive programs, the CEF team anticipated that public funding alone would not fully cover retrofit costs, particularly when significant health and safety repairs were required. The team therefore worked to optimize the available funding sources into a stack (see Table 2) that could cover enough of the costs to ensure financial feasibility, which proved difficult for single family and multifamily buildings alike.

Table 2: Retrofit Project Costs These amounts include full renovation costs, beyond just electrification. Amounts are rounded to the nearest \$500.

Funding Sources Leveraged		CJM Student Housing	Walnut House Cooperative	Single Family Home	Tenth St.
Program Name	Entity				
Climate Equity Fund	City of Berkeley	\$39,000	\$62,000	\$10,000	\$83,000
Bay Area Multifamily Building Enhancements (BAMBE) Program	Bay Area Regional Energy Network (BayREN)	\$61,500	\$81,500	-	\$40,000
TECH Clean California	California Public Utility Commission (CPUC)	-	-	\$1,000	-
Home+ Program	Bay Area Regional Energy Network (BayREN)	-	-	\$400	-
Health-E Communities Program	Ava Community Energy	-	-	\$13,500	-
High-Efficiency Electric Home Rebate Act (HEEHRA)	California Energy Commission (CEC)	-	-	-	\$112,000
City FEMA Funds	Federal Emergency Management Agency (FEMA)	-	-	-	\$77,000
Housing Trust Fund	City of Berkeley- for acquisition and rehab	-	-	-	\$3,324,000 (includes acquisition)
Solar on Multifamily Affordable Housing (SOMAH) Program	California Public Utility Commission (CPUC)	-	-	-	TBD if completing solar
Resilient Communities	Resilient Cities Network	-	-	-	\$53,000
Low-Income Weatherization Program (LIWP)	California Department of Community Services and Development (CSD)	-	-	-	(On waitlist \$72,200)
Total Funding Leveraged		\$100,500	\$143,500	\$25,000	\$3,689,000 (to date)
<i>Total Project Cost</i>		<i>\$241,000*</i>	<i>\$244,000</i>	<i>\$28,000</i>	<i>TBD</i>
<i>Funding Gap</i>		<i>\$140,500</i>	<i>\$100,500</i>	<i>\$3,000</i>	<i>TBD</i>

*This Total Project Cost number encompasses eligible energy scope measures under the BAMBE program. Casa Joaquin Murrieta did a more comprehensive remodel that included replacing custom windows that totaled ~\$1 million.

Braiding funding from multiple programs enabled deeper retrofits with bigger scopes and allowed programs to address additional building owner and tenant priorities, however navigating the logistics can also add significant complexity to a retrofit project. The braided funded streams introduced conflicting installation requirements, deadlines, reporting requirements, and labor standards. In addition, the availability of incentive opportunities varies with funding cycles,

political dynamics, and public demand, creating confusion and delays among some CEF participants.

Even after the CEF team leveraged as much available funding as possible, every project still faced a funding gap that had to be covered by capital reserves, loans, or homeowner contributions. All projects were budget-conscious, and some had to limit their scopes when the additional costs made original scopes unaffordable. CJM, for example, limited electrification upgrades to avoid triggering a panel upgrade that was not covered by incentives. Conversely, funding can also enhance the overall scope of a project. When the CEF team initially engaged with CJM Student Housing, the project was scoped solely for window replacements. The layering of additional funding sources later enabled the inclusion of electrification measures but also expanded the cost, requiring Greenlining to draw on capital reserves to complete the full scope. This affected the project timeline and prolonged the period during which the student housing remained vacant during construction but ultimately addressed a significant number of issues within the building and made the building consistent with Greenlining's climate goals.

Although BlocPower's single-family home benefited from LIHEAP funding, the program's strict cost parameters and per-household spending caps meant it could not support a fuel-switching conversion. As a result, the project installed a high-efficiency gas furnace instead of a heat pump, illustrating the trade-offs between resident preferences and program rules.

Moving Forward

The time required to braid funding streams, finalize project scopes, and reach "construction ready" status was significantly longer than anticipated for every CEF project. Ultimately, programs in the Bay Area serving LMI residents still have program design limitations that need to be addressed, including easier funding stacking rules, flexible and more generous incentive amounts, and dedicated navigation services to allow for optimized incentives to increase project feasibility and lessen the administrative burden.

Recommendations for funding for future projects include:

- Where possible, plan ahead for scope creep, changes, and timeline extensions. This is common across LMI buildings with complex retrofit needs, and ensuring flexibility is built in from the beginning will allow the project team to integrate owner and tenant needs and address critical repairs within the building, integral to achieving climate goals as well as improving housing quality for all.
- Invest in a dedicated project (or construction) manager, who can interface with the building owner, work with the design team, apply for permits, coordinate subcontractors, and navigate scope, timeline and budget changes. This project manager role is not necessarily required in-house but should be secured for the entirety of the project, from design through construction. This role is particularly important for multifamily buildings and/or buildings with complex ownership structures, such as cooperatives.

- Consider redesigning energy efficiency programs to value additional benefits beyond energy savings and ensure that programs have matching goals around fuel switching.
- Programs should aim to streamline reporting, requirements, and coordination, while offering dedicated technical assistance that is accessible to under-resourced buildings and can support jurisdictions to conduct similar retrofit programs. Just as importantly, assistance should emphasize transparency, clearly communicating what can realistically be achieved with available rebate funding and helping homeowners and property owners better anticipate potential out-of-pocket costs.

Workforce Availability, Trainings, & High-Road Practices

The Climate Equity Fund's workforce-related goals were two-fold: (1) improve job quality for the contractors and workers who installed retrofit measures, and (2) build capacity and learning for workers and contractors to advance the residential decarbonization movement. BlocPower's contract included funding dedicated to workforce training aimed at increasing equitable access to, and the number of, qualified electrification contractors in the single-family decarbonization market. The Climate Equity Fund also piloted the implementation of prevailing wage requirements for funding applied toward labor costs and analyzed the cost differentials between prevailing wage and market rate contractor pricing.

Lesson 1: Prevailing Wage

The pilot guidelines stipulated paying prevailing wages to contractors for all installation projects using CEF funding for labor costs. A key objective of the pilot was to evaluate the cost differential between standard market rates and prevailing wages to determine how prevailing wage affected total project costs. The Tenth Street Apartments were required to pay prevailing wage as mandated by multiple funding sources utilized for their upgrades including the City of Berkeley's Housing Trust Fund loan and HEEHRA funds. HEEHRA also required certified payroll, enrollment with the State's Department of Industrial Relations (DIR), and apprenticeship compliance. Conversely, the CJM and WHC projects only used CEF funds to purchase equipment rather than to cover labor costs and therefore were not required to pay prevailing wage. These multifamily projects had limited budget and their other funding source used—BAMBE—also did not require prevailing wage. The City aims to continue testing how to integrate prevailing wages into multifamily retrofit projects and finding funding sources sufficient to cover the difference.

Prevailing wage requirements are uncommon in the small, single-family residential market and as a result, many smaller contractors were unfamiliar with how to administer prevailing wage requirements, even when market rate wages for certain professions, like electricians, were comparable to prevailing wages. For BlocPower's single family home project, the Health-E Communities program funding required prevailing wages. BlocPower found that many local, small, residential contractors were hesitant to adapt to prevailing wage requirements and required additional outreach to find interested contractors. The contractor ultimately selected-- Fuse, based in San Jose-- who proved to be a flexible partner with sufficient resources to meet

wage standards. However, even this project had to implement workarounds--the homeowner had insufficient funds to cover two heat pump heating systems and utilized LIHEAP's income qualified program for one heating system. That program unfortunately does not require prevailing wage and has strict program cost caps that did not allow for fuel switching, leading to the installation of a high-efficiency gas furnace on one floor of the home. This outcome highlights the trade-offs while navigating complex and contradictory program rules, especially when funds are short. This is a challenge the City and other regional experts and implementers are aware of and working to address as programs evolve over time.

Lesson 2: Workforce Training

The CEF pilot initially planned to provide a series of workforce trainings on installing heat pump technologies for residential contractors. The objective of these trainings was to increase access to well-paid decarbonization jobs for women and individuals from harder-to-employ communities. Revalue, a subcontractor to BlocPower on the project, conducted one contractor training session at the Mandela Training Center, attended by 45 contractors. While this session was successful, the broader workforce training goals were not achieved due to BlocPower ending its partnership with Revalue because of a lack of clarity on roles and expectations between the two firms. This challenge highlights the importance of clearly defining program administrator roles and ensuring subcontractors have explicit deliverables from the outset.

Moving Forward

Paying fair wages to workers advancing building decarbonization remains essential.

Recommendations for future programs include:

- Ensure there is sufficient public funding to cover cost differential of prevailing wage.⁴
- Set aside time and resources to work with smaller contractors, as additional support may be needed to help navigate prevailing wage requirements and qualify for publicly funded retrofits. This approach was tested in Berkeley's Just Transition Pilot, which provided public funding, aggregation of small decarbonization retrofits, and contractor support to meet labor standards.
- Advocate for program cost cap reforms to enable fuel switching so additional public dollars can be leveraged in LMI electrification retrofits.
- Invest in workforce training and business development support for local firms to deepen electrification expertise and public program requirements.
- Consider more flexible systems to meet prevailing wage levels, rather than full California Department of Industrial Relations (DIR) certification process.

These learnings directly informed the principles of the Bay Area High-Road Training Partnership (H RTP), a group of partners working to advance high-quality jobs in building decarbonization regionally. While Berkeley could not implement all the High-Road Training Partnership Principles into the Climate Equity Fund pilot, Berkeley is working to include additional goals in the City's Just Transition Pilot.

Conclusion

Ultimately, the Resilient Home Retrofits Program pilot demonstrated both the promise and the complexity of implementing equitable, City-led residential decarbonization retrofits. By collaborating with trusted partners and strategically braiding diverse funding sources, the pilot provided valuable insights into how public investments can support deep, holistic upgrades in low- and moderate-income housing. It also highlighted persistent challenges related to project scoping, pipeline development, funding gaps, workforce capacity, and project management. Beyond successfully contributing to four holistic retrofits, the CEF pilot uncovered lessons learned that will be applied to City initiatives as well as existing regional programs.

Contributors:

Marna Schwartz - City of Berkeley, Office of Energy and Sustainable Development
Caytie Campbell-Orrock, Viri Nguyen-Santoyo, Sophie Wolfram - Building Electrification Institute

⁴The [Bay Area H RTP](#) has further explored the impacts of high-road policies across the region, including the report [Economic Impacts of a Wage and Benefit Labor Standard for the Bay Area Residential Decarbonization Industry](#), and workforce-specific recommendations for program design in the [Public Programs Best Practices Guide](#).