



Arbor Consulting Partners

Social Science Research, Evaluation, Organizational Analysis

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**Evaluation of the Green Justice Coalition's
Community Mobilization Initiative
Chinatown and Chelsea Residential Energy Efficiency Pilots**

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**Evaluation of the Green Justice Coalition's
Community Mobilization Initiative (CMI)
Chinatown and Chelsea Residential Energy Efficiency Pilots**

I. Introduction

In July, 2008, Massachusetts Governor Deval Patrick signed into law the Green Communities Act, to promote energy efficiency measures throughout the Commonwealth. The Act created an entity charged with conducting strategic planning – the Energy Efficiency Advisory Committee (EEAC) – to oversee and support policy created by this legislation. Among the measures included in the Act is a mandate for utilities to offer rebates to customers to weatherize their homes through Mass Save, the state's utility-sponsored energy efficiency program. The costs of rebates are paid for via ratepayer contributions from all utility customers. While these rebates are available to all utility customers, they are significantly underutilized in communities referred to as “Hard-to-Reach, Hard-to-Serve” (HTR/HTS), including immigrant communities and communities of color.

Members of the Green Justice Coalition – a partnership of over forty community organizations – recommended to the EEAC that pilot initiatives be implemented in HTR/HTS communities *targeting households with incomes between 60-120% of State Median Income (SMI)*. These are households which are not eligible for dedicated low-income programs but nonetheless face income barriers to participating in energy efficiency initiatives.¹ In October, 2009, the EEAC approved a \$1.4B plan aimed at reaching 140,000 households which included a recommendation to implement these pilot efforts, called Community Mobilization Initiatives (CMIs). The pilots were charged with field testing a variety of community-based strategies to mobilize residents in HTR/HTS communities to participate in the Mass Save program. The pilots also included a jobs component, with the goal of generating weatherization jobs for local workers with good wages, benefits and career pathways.

In November, 2010, Arbor Consulting Partners was contracted by Community Labor United to evaluate the Pilot Community Mobilization Initiative (CMI) in Chinatown, led by the Chinese Progressive Association (CPA). Funds for this evaluation were provided by the Barr Foundation, which supports efforts to mitigate climate change. Shortly after, the Barr Foundation also contracted Arbor consultants to evaluate the Pilot CMI in Chelsea. This strengthened our capacity to generate meaningful findings through comparison of two community groups' strategies to engage and mobilize customers.

¹ Utility-sponsored programs for households under 60% SMI are implemented in Massachusetts through the Low-income Energy Affordability Network (LEAN).

In evaluating both the Chinatown and Chelsea pilot programs, we sought to deepen understanding of successful and unsuccessful strategies employed by these community groups, in collaboration with other stakeholders - the utilities, energy specialists (e.g., CSG, NSL), contractors and unions – to reach and serve those who have traditionally not taken advantage of the state’s Mass Save program. We documented the role that community groups’ linguistic and cultural skills played in marketing the weatherization program in their communities, as well as in supporting customers through the process of having their homes audited. This included addressing pre-weatherization issues and additional funding (as both Chelsea and Chinatown provide gap funding to customers), and helping customers to secure a contract to have their homes retrofitted.

In addition to our focus on weatherization, the evaluation also explored the effects of the pilots’ green jobs component in providing training to workers and, ultimately, in securing unionized weatherization jobs for local community residents. The aim of the jobs component was to show how high-quality weatherization work could be done by community-based workers at good wages with benefits and career pathways.

II. Methods

We conducted a process evaluation of the CMI’s, capturing the early or formative stages of implementation, in which key stakeholders developed a collaboration and community groups developed strategies to mobilize residents in hard-to-reach, hard-to-serve communities.

Process Evaluation

The process evaluation documented strategies and activities implemented through the CMI pilot, with attention to facilitating factors and challenges, in the following areas:

- ***CMI community-based outreach efforts***

ACP evaluators documented a) specific education and outreach efforts led or coordinated by the community groups, especially strategies and activities that focus on low to moderate income and linguistic minority residents and renters, and b) total numbers reached in these categories. Specific questions here included:

- Does the rootedness of CPA within Chinatown affect the implementation of the Initiative (strengths and barriers)?
 - What strategies were most effective with particular sub-groups or populations in Chinatown and Chelsea (e.g., elders, renters versus owners)?
 - What proportion of families who were reached by the CMI actually followed through with energy efficiency retrofits and why?
 - What type of support was needed to engage and sustain family/community involvement?
 - What barriers did CMI encounter in its efforts to engage and mobilize families to pursue energy-efficiency (weatherization)?
 - How does CMI address these barriers?
 - What are the universal learnings for program implementation that can be applied to implementation in other communities?
- ***Local hiring, bundling of retrofit work in neighborhood scale contracts and union-directed training***

ACP evaluators also documented how and to what extent retrofit work was bundled in neighborhood scale contracts, union-directed training was delivered through the CMIs, and local hiring took place. Specific questions here included:

- Who led these initiatives and who participated?
- What was the most effective training to achieve desired outcomes?
- What type of hiring took place, who was hired and in what numbers?
- What were the wages and working conditions in newly created jobs?
- What was the level of commitment and follow-through from state and energy companies to hire and train people from community?
- Was the hiring process perceived as fair/equitable by community members?
- Was there a planning effort to sustain jobs and job creation in Chinatown and Chelsea?

- ***Partnership and collaboration***

Since successful implementation of the pilot requires collaboration among multiple partners and stakeholders, the process evaluation also documented the nature and quality of relationships built and/or deployed during the pilot. Through a combination of interviews and participant observation, we sought to understand the perspectives of the utilities, the Chinese Progressive Association (CPA) and the Chelsea Collaborative (CC), the International Union of Painters and Allied Trades District Council 35 (Painters Union), the New England Regional Council of Carpenters (Carpenters Union), the City of Chelsea, and the weatherization contractors.

Outcome Evaluation

Outcome evaluation activities examined customer perspectives on energy and money savings, as well as the impact of the program on non-energy benefits, both at the individual level and in the communities served. Furthermore, we analyzed the following:

- Impact of specific community outreach methods on community participation;
- Effect of CBO support for community members on continued customer engagement in the program;
- Impact of CMI efforts to train and employ local workers in the weatherization industry.

Qualitative Methods employed

We employed a range of qualitative methods, including the following:

- Review of relevant background and other materials generated through the Chinatown and Chelsea CMIs related to planning and implementation of the CMIs;
- Interviews with individuals who played an important role in planning and implementing the CMIs, including relevant staff at CLU, CPA, CC, the Painters and Carpenters Unions, NSTAR and National Grid, Conservation Services Group and Next Step Living, the Aulson Company and Insul-Pro Inc., in order to monitor roll-out of the program and document perceived facilitating factors and challenges;
- Participant observation of the CMI in motion (e.g. planning meetings with key stakeholders, meetings with community members, audits/screenings, weatherization work);

- Interviews with two community leaders from Chinatown and Chelsea to hear leaders' perspectives on the CMI (education and outreach, worker training, implementation of retrofits, support for sustainable development in the community);
- Focus groups or interviews with a sample of residents (20 in all) who have been exposed to outreach efforts, including those who have followed through with an energy efficiency retrofit and those who faced barriers to pursuing energy retrofits, to document attitudes, behaviors and outcomes related to the CMI;
- Interviews and/or focus groups with individuals who have been trained for green jobs, including those who were hired as a result of the program, and those who were not hired;
- Interviews and/or focus group with trainers for green jobs.

III. CMI biographies

Chelsea Collaborative (CC)

Founded in 1988, the Chelsea Collaborative was initially formed as a collective of human service agencies that were charged with implementing a 5-year Human Services Plan for the City of Chelsea. Over the years, the Collaborative has evolved in response to the needs of its working class, largely Latino and immigrant community. The Collaborative's location in the center of town reflects the central role the organization plays in the community, through its on-the-ground efforts to effect change around social, economic and environmental justice issues.

Every year, the Collaborative mobilizes over 3,000 people for a variety of rights-based campaigns and projects, with a focus on civil rights and human empowerment. Organized around a committee/project infrastructure, the campaigns concentrate on environmental justice, immigrant rights, youth peer leadership, summer youth employment, an annual voter mobilization initiative, education reform, tenant rights, and a Somali community association.

CC's recent accomplishments include:

2001: Youth Employment Initiative: Program started in 2001 and still thrives today. Hires hundreds of youth for summer employment, provides worksites, youth organize Annual Youth Summit.

2004: In collaboration with partners, successfully abolished the City's 7-person at-large school committee in favor of a model with one at-large councilor and 8 district councilors, in order to encourage minority representation and to better represent the social and ethnic diversity of the city.

2006: Fundraised, designed and oversaw the construction of the \$1.5M Creekside Commons Park, Chelsea's most dynamic park with outdoor, year-round ice skating, bocce, horseshoes, a therapeutic garden and state of the art active play equipment.

2007: Successfully defeated a power plant proposal that would have sited a diesel-fired power plant along the banks of the Chelsea Creek and directly across the street from the city's only

public elementary school. CC mobilized thousands of people including residents, public officials, environmental organizations and youth. Hundreds of residents spoke out at public hearings, wrote letters to the state, participated in protests, rallies, meetings and signed postcards of opposition. CC successfully used grassroots community organizing strategies to empower the community.

Successfully pushed the City of Chelsea to create its own “environmental agenda” that will complement – at the municipal level – the advocacy work being done by CC’s Green Space and Recreation Committee.

Created a workers center that documents hundreds of worker’s rights violations each year.

2008: Through Chelsea Voter Initiative, registered over 500 new voters, of whom nearly half are Latino. Mobilized over 100 volunteers to work in Get Out The Vote efforts on Election Day.

Created a new community organizer position to work with the Shanboro Community Association, and members of the association attended a National Somali Bantu conference in Louisville, Kentucky.

2009: Raised more than \$2M in economic stimulus funding to implement major diesel emission reductions in the New England Produce Market.

Ensured that more than \$5M in community service payments from an oil spill settlement will be used for improvements to the watershed.

Launched the Leadership Institute, which teaches members about workers’ rights, employment law, how to organize a campaign and more.

2011: Held a hearing on the REAL Act, regulations for temp agencies that would provide protections for blue-collar workers around job assignments, safety requirements and more.

Successfully raised funds for and created the new Kaboom Park.

Reflecting on CC’s experience with the Chelsea CMI, Associate Executive Director, Roseann Bongiovanni, highlighted the critical importance of this initiative as a means to give low-income communities access to weatherization funds, as well as to create green jobs.

“The work we’re doing through the Chelsea CMI is central to our organization’s mission. Low income communities have a right to access weatherization funds, and through this project, we are able to mobilize the community to link the important issue of climate change with residents’ ability to do something about it in their own homes. The result is they have warmer homes and save money on their utility bills. And we’re starting to address the issue of green jobs, despite this tough economy. Lots of kudos go to the many partners who have worked together to make this happen.”

CC organizer Ricardo Sanchez comments on the value of the CMI in supporting the organization’s mission:

Sometimes it's through the back door and sometimes it's in the side window. But you're able to reach out to folks and continue to build your base in the community and you're doing something that is true to your organization and its mission. So that's why I say, this is important work to be done, and in keeping with a lot of other objectives of the organization. So if those resources were available, then I think [it would be good to continue].

Chinese Progressive Association (CPA)

The Chinese Progressive Association was founded in 1977 out of a series of community organizing campaigns around issues that included Chinese parents' input into the Boston school desegregation process and organizing for community control over land development in Chinatown. More than three decades later, CPA continues as a grassroots community organization working for the full equality and empowerment of the Chinese community in the Greater Boston area and beyond. CPA works on a range of social and economic justice issues: jobs, education, freedom from discrimination, a clean and safe living environment. Its core membership is comprised of Chinese immigrants and the Chinese-speaking; most are workers in low wage industries, working families, or low-income elderly.

CPA's recent accomplishments include:

2004: Worked in six Chinatown-area developments, totalling more than 500 units of housing, to help tenants remain in their homes, reduce proposed rent increases, and improve healthy living conditions and quality of life.

2005: Helped give Chinatown the highest increase in voter turnout of any Boston neighborhood, and worked with both the US Department of Justice and the City of Boston to secure bilingual Chinese and Vietnamese ballots for Boston voters.

2005: Organized laid-off electronics and rubber stamp manufacturing workers to win over \$400,000 in severance pay and seek increased job training opportunities.

2006: Supported youth activists to win City of Boston funding of a feasibility and siting study to revive a Chinatown branch library.

2007: Completed a four-year \$1.5 million capital campaign and fully paid off a mortgage to establish CPA's permanent center for grassroots organizing in Chinatown's Metropolitan project on Parcel C.

Asian American voter turnout surpassed the citywide average for the first time in Boston's history.

2008: Helped Chinese wait staff win a \$110,000 unpaid wage settlement affecting 80 tipped workers who were employed by Jin Asian Cuisine in Saugus.

Reflecting on CPA's experience in the Chinatown CMI, Lydia Lowe, CPA's Executive Director, emphasized the opportunity to collaborate with partners in the Green Justice Coalition (GJC) such as CLU and the Painters and Carpenters Unions.

When we want to impact big forces in real life, it takes a lot – grassroots organizing, advocacy, planning and partnerships, negotiation, direct service components. As a small local organization

[collaborating as part of GJC], we are able to influence an important and growing [energy efficiency] sector and gain access for our community.

Mark Liu, Green Justice Project Coordinator, reported that the CMI's focus on energy efficiency offered many benefits to CPA members and to the broader community: free weatherization, more comfortable homes, a healthier environment and also green jobs. An emphasis on creating high road jobs for Chinese workers is a thread that runs through all of CPA's work and is central to the approach that CPA took to the CMI pilot. According to Mr. Liu,

For many years, we have been involved in different campaigns for local hiring, looking at recent developments in Chinatown specifically and how the community can get access to those jobs. The CMI is definitely seen as a stepping stone for us to start an active campaign in Boston that would lead directly to those jobs.

IV. Importance of collaboration among stakeholders (during pilot and beyond)

Collaboration is a mutually beneficial and well-defined relationship entered into by two or more organizations to achieve common goals. The relationship includes a commitment to: a definition of mutual relationships and goals; a jointly developed structure and shared responsibility; mutual authority and accountability for success; and sharing of resources and rewards.

Dr. Paul Mattesich, Wilder Foundation

The success of both the weatherization component and the jobs component of the Community Mobilization Initiative depends on a successful collaboration among the key stakeholders. According to a review of the literature on successful collaborations,² some the key factors in achieving successful collaborations are:

- stakeholders' history of collaboration or cooperation;
- an appropriate cross-section of members, and mutual respect, understanding and trust among members;
- members who share a stake in both the process and the outcome;
- multiple layers of decision-making;
- open and frequent communication;
- concrete, attainable goals and objectives; and
- sufficient funds and a skilled convener.

While the Community Mobilization Initiative has created a new partnership, many of its members have a history of working together successfully, which provides a foundation upon which to build. This is the case for the utilities, CSG and NSL, who have worked together on energy efficiency issues for many years, and it's also the case for CLU, with its long-term strategic partnership with unions and community groups who have worked together on issues related to social and economic justice.

² Mattesich et al. 1992. Collaboration: What Makes it Work. A review of research literature on factors influencing successful partnerships. Wilder Foundation.

As discovered in the Hard-to-Reach, Hard-to-Serve Charrette,³ some of the partners may have entered this broader collaboration with some pre-conceived notions about each other. But through open communication at this two-day meeting, there was a greater recognition of partners' perspectives as well as their shared purpose and goals.

Indeed, each of the partners brings a unique framework to the larger collaboration, and with that framework, a set of core skills, resources and constituencies they can access. For example, the utilities provide energy to residential homes and businesses, and therefore have “the power” to offer/sell. Given their goal of serving all customers, they must find ways to identify and increase the number of customers among the “hard to reach” population. The utilities also want to balance achieving cost efficiency for the program with reaching the full spectrum of customers in the context of the broader goal to achieve climate mitigation.

CLU also brings a rights-based framework to its work on energy efficiency, both for the development of well-paid green jobs as well as the entitlement of energy services for community members. The organization is the convener of the Green Justice Coalition, and many of its founding partner groups have a history of commitment to climate mitigation. Both Chelsea Collaborative and Chinatown Progressive Association are skilled at engaging the “hard to reach” populations in their communities, and both approach their communities with a rights-based framework. This means that they believe community members have a right to energy efficiency services provided by the utilities, and incorporate this perspective into their outreach in the community. The mission of the Chelsea Collaborative is in sync with both the weatherization and green jobs components, while the Chinatown Progressive Association has a worker center and a strong history of promoting job creation for Chinese workers, although not necessarily green jobs. Both community groups are committed to promoting cost savings for community members and are explicitly focused on the broader issue of climate mitigation as part of how they frame the service provided through the CMI.

During the pilot phase, the energy efficiency specialists – CSG and NSL – have mediated the relationship between the utilities and community groups, as assessors and case managers for customers. Climate mitigation is part of their core philosophy linked to the nature of their business. Contractors are the “end game” of this relationship, and depend on work generated from the CMI partnership, as do the workers who are trained by the unions to do weatherization work.

The experience of the Charrette highlights the importance of this broad collaboration, with the majority of the partners agreeing on problems in achieving goals, but perhaps less so on solutions to achieving those goals, due to their differing frameworks and orientations.

There has been another important collaboration during the pilot phase of the CMIs. Arbor evaluators have been in regular dialogue with evaluators from Evergreen Economics, who are sub-contracting to Opinion Dynamics Corporation (ODC) to conduct the evaluation of other pilot efforts for the utility companies. Recognizing that Arbor was already conducting a rigorous evaluation that could benefit them, ODC and Evergreen Economics decided not to collect data related to the Chelsea and Chinatown CMIs, at least for the period of the Arbor evaluation. As

³ Sponsored by participating utility Program Administrators (PAs), key stakeholders of the Mass Save program – including representatives of the PAs, community groups, Lead Vendors and contractors – came together at a Charrette on June 14, 2011, to consider strategies for engaging HTR-HTS customers in Massachusetts.

evaluators, we were pleased to share the information we had with ODC and Evergreen Economics and so limit the burden of research on CBO staff and other key stakeholders.⁴

V. Who Are the Hard to Reach and Hard to Serve (HTR/HRS)?

In the context of the Mass Save Home Energy program, the phrase HTR-HTS refers to classes of customers who have not traditionally participated in utility-sponsored energy efficiency initiatives. Categories of residential customers who fall into this class include those with low to moderate incomes (60-120% of State Median Income (SMI)⁵), the elderly, multi-family tenants and renters as well as those with other known barriers to participation such as limited English language proficiency. Recognizing that restricted participation in utility-sponsored initiatives is consistent with broader patterns of marginalization in their communities, both CPA and CC framed access to PA-sponsored programs as an issue of fairness. This “rights” perspective was integral to the strategies that both CBOs adopted in addressing the range of barriers that their constituents faced, including difficulty interpreting technical information, cultural as well as language barriers, and mistrust of mainstream institutions.

Below is a list of customer segments with unique needs and barriers, as identified by participants at the HTR/HTS Charrette.

- Condo owners (1-4 units)
- Ethnic/cultural minorities (many sub-segments);
- Generational (unplugged/overly plugged in);
- Government/Program averse;
- High income/no interest in Program benefits;
- Landlords/Property managers;
- Low to moderate income customers;
- Multi-family/generations in household;
- Poorly educated/generations in household;
- Poorly educated/illiterate;
- Renters, including young renters/students;
- Rural/Sparsely populated areas;
- Seasonal tenants (e.g., Chinatown, Cape Cod); and
- Senior Citizens.

⁴ As social scientists, Arbor consultants conducted a process evaluation with a ground-up “immersive” approach – collecting data from the full range of key stakeholders, including consumers, through participant observation, focus groups and interviews. Our time frame was relatively short – around 6 months – and our focus was only on two pilot CMIs. As market researchers and energy efficiency specialists, Opinion Dynamics Corporation and Evergreen Economics are also conducting a process evaluation, but their time frame is 2 years and their scope is broader, including a larger cohort of pilots, which allows them to make broader comparisons. Methodologically, ODC and Evergreen Economics are primarily focusing on interviewing leaders from organizations who can represent the perspectives of those affected by the pilots.

⁵ As noted earlier, the state Energy Efficiency Advisory Council supported a GJC proposal to implement the CMI pilots as a means of determining whether or not to create a financing mechanism that extends program access to households that the 60-120% income range.

Stakeholders at this Charrette acknowledged that barriers for HTR-HTS customers sometimes occur simultaneously. In our research, we confirmed that certain barriers also occur sequentially. Some impediments that CBOs were well-positioned to address, such as skepticism and mistrust, pertained primarily to the “reaching out” phase. In contrast, several barriers after customer sign-up required multi-step “trouble-shooting” in coordination with Lead Vendors, contractors and others. In this “service” phase, CBOs had relatively less control over the pace of progress and, ultimately, the outcome.

In sections to follow, we have preserved this distinction between the CBOs’ work to “reach” and their work to “serve,” beginning with a description of the two CBOs’ efforts to reach out and educate their constituents about the advantages of participating in the residential retrofit program and facilitating the process of customer sign-up.

VI. HTR-HTS in the context of the CC and CPA Pilots

In keeping with the terms of the Mass Save program they were contracted to promote, both CC and CPA targeted households with incomes between 60% and 120% of SMI. As acknowledged at the Charrette, multiple possible barriers to participation exist *within* the 60-120% SMI segment, including many of the barriers listed above. In order to assess the kind and quantity of barriers that CC and CPA constituents encountered, we asked CC and CPA staff to closely review their lists of CBO-recruited customers for the Mass Save program and distinguish between three types of community members: community members who required intensive guidance and support from the CBO, community members who progressed through the program with little need of CBO support, and community members who required help with translation only. Table 1 below describes the distribution of community members across these categories as reported by CC and CPA staff.

Table 1. Level of support required by community members signed up for the Mass Save program

	Category 1 Required Intensive Support	Category 2 Required Minimum Support	Category 3 Required Translation Only
Chinese Progressive Association	30% (n=31)	53% (n=55)	17% (n=18)
Chelsea Collaborative	80% (n=72) 42% (n=37) of this group require translation	20% (n=18)	NA ⁶

⁶ CC reported that all translation also included support, whereas CPA was more comfortable distinguishing support that was restricted to translation. To some extent, this may reflect differences in their organizing models. Still the proportion of people requiring intensive report in these two communities varied considerably, as reported by CC and CPA (80% v. 30%).

We also reviewed customer profiles within each of the three categories to identify factors that affected the degree of support needed.

In the case of CPA, community members in Category 1 tended to have one or more of the following characteristics: middle-aged or older, housing in poor condition with pre-weatherization issues that are multiple or costly to address, cultural as well as language barriers, and mistrust of “official” institutions. Community members in Category 2 tended to be younger on average, proficient English speakers, more comfortable communicating with “official” institutions and tended to occupy housing in better condition with fewer pre-weatherization issues. Customers in Category 3 are of Chinese ancestry with limited English proficiency but are otherwise similar to community members in Category 2.

In the case of CC, community members in Category 1 tended have one or more of the following characteristics: housing in poor condition with pre-weatherization issues that are multiple or costly to address, financial barriers that require support to overcome (e.g., applying for Heat Loan), cultural as well as language barriers, and mistrust of “official” institutions. Customers in Category 2 tended to be proficient English speakers, and occupy housing in better condition with fewer pre-weatherization issues. Customers in Category 3 have limited English proficiency but are otherwise similar to community members in Category 2.

Distributions above apply to community members *who registered for the Mass Save program*. As described in greater detail below, some community members also needed support *prior to sign up*, to review the terms of the program with a trusted source, clarify the terms of income eligibility, and secure appropriate documentation. CC and CPA staff confirmed that distributions during this pre-registration phase mirrored those above (i.e., between those needing intensive support, those needing minimum support and those needing translation only).

VII. Meeting Weatherization Targets

Both CBOs set out to secure a target number of residential units for energy efficiency retrofits in two categories: 50 retrofits in homes with 1-4 units and 4 retrofits of multi-family buildings with 5-20 units.⁷

At the time of this writing, both CBOs were close to meeting their target for the multi-family homes. Through mailings to both owners and tenants and by reaching out to landlords directly, CPA secured two multi-family buildings early in the pilot, added a third and, due to delays with a fourth, has recently reached out to sign up another multi-family facility. Energy efficiency work in the first three buildings has been completed. CC also made immediate progress with multi-family buildings. After only one mailing, CC received numerous calls of interest. At the time of this writing, energy efficiency work in two buildings has been completed, and two further jobs are scheduled.

In the case of 1-4 unit homes, the challenges have been greater and the process more protracted. Since November 2010, when both CC and CPA began their efforts to engage community members in the program, 12 retrofits have been completed in homes of

⁷ The Mass Save Home Energy Program offers different incentives to owners/tenants in buildings with 1-4 residential units and buildings with 5-20 residential units.

tenant/owners that CC recruited, with 4 scheduled for retrofit work; and 15 retrofits have been completed in homes of tenant/owners that CPA recruited.

Both CC and CPA anticipated from the outset that, of the total number of community members reached through their efforts, only a sub-group would qualify for the program and opt to sign on. They also expected that there would be some attrition in the number of active participants as community members moved through the multi-step process from initial income verification to determine eligibility for the program through to completion of weatherization work. The two charts below describe where CC and CPA “prospects” are currently located in the multi-step pipeline from customer sign-up to work completed⁸. Although both pilots are still short of their targets, CC and CPA staff are confident that they will ultimately reach their 50 I-4 unit goal as customers’ barriers are addressed, necessary paperwork is completed, and the work is scheduled and completed.

Status Overview of CPA Prospects

8.1.11

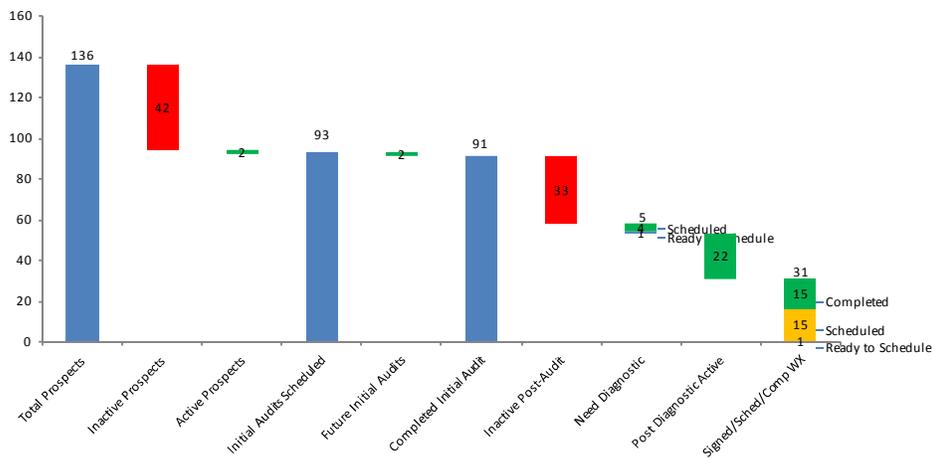


Figure 1 shows that, as of August 1, 2011, 136 units were signed up for the CPA pilot. Of the 136, 42 are not active. Tenant/owners in these cases did not qualify for the program, did not respond to Lead Vendor calls or decided not to proceed due to lack of interest. Of the 95 that remained interested, all but 2 units had an initial audit scheduled. Of the units which have been scheduled, 91 have completed an audit and 2 are upcoming. Those who are inactive post-audit include tenants/owners for whom there was no opportunity for weatherization under the Mass Save program and those who had opportunities but decided not to proceed. Of those that were active post-audit, 5 units require a further diagnostic screening to confirm that pre-weatherization issues have been addressed. The balance (n=53) qualify for weatherization contracts. Of these, 38 have signed a contract and have been scheduled for weatherization or are ready to schedule. As of 8.1.11, fifteen weatherizations have been completed.

⁸ The CPA “waterfall chart” is a production of Next Step Living. NSL charted CPA’s progress monthly in this way, providing a graphic representation of customer location in the process. We have used NSL’s template to produce a similar chart with data provided by Chelsea Collaborative.

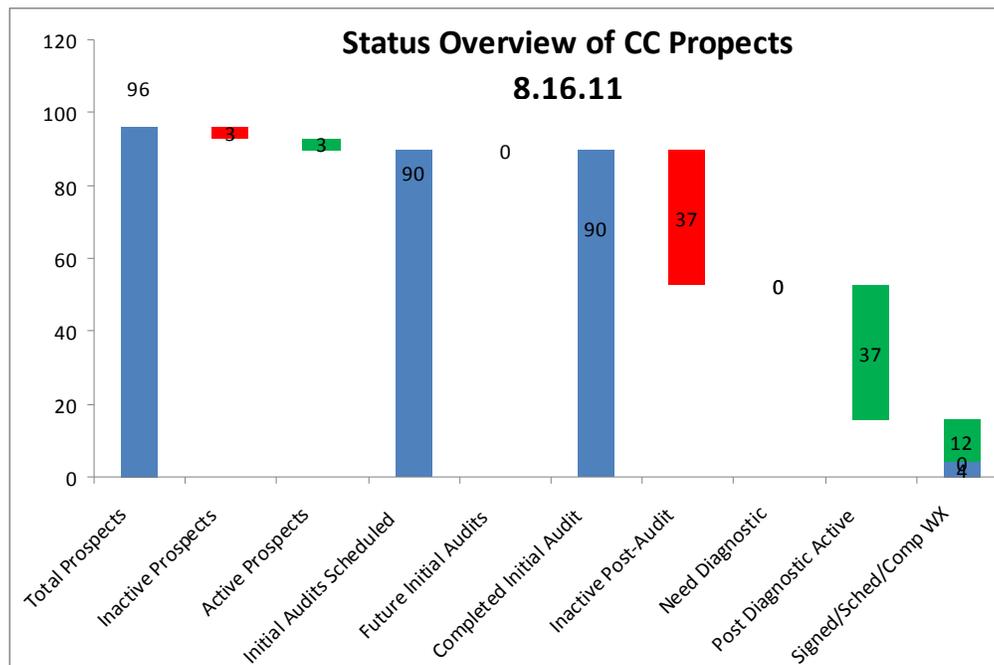


Figure 2 shows that, as of August 16, 2011, 96 units were signed up for the CC pilot. Of the 96, 3 are not active. Owners/tenants in these cases did not qualify for the program or did not respond to Lead Vendor calls. Of the 90 that remained interested, all have completed an audit. Those who are inactive post-audit include owners/tenants who were not able to proceed under the Mass Save program because their homes had major structural problems or other pre-weatherization barriers, their homes already had insulation, or they lost interest/decided not to proceed. Of those that were active post-audit, no units currently require a further diagnostic screening to confirm that pre-weatherization issues have been addressed. The balance (n=53) qualify for weatherization contracts. Of these, 37 are active post-diagnostically, including 10 units in which the owners have financial issues that CC is helping to address (e.g., via HEAT Loan), 3 units in which owners are waiting to sign a contract, and 24 units with roadblocks, in which CC is also providing support to owners to address. Thus far, 4 have signed a contract and have been scheduled for weatherization or are ready to schedule. As of 8.16.11, twelve weatherizations have been completed.

The charts above describe customer flow-through *after* sign up. CPA staff estimate that over the course the pilot, just under 2,000 residents were touched by CPA outreach efforts through mailings and phone-banking alone⁹, contributing to the 136 sign-ups of community members whose income qualified them for the program (60-120% SMI). At the time of this writing, CPA has suspended outreach efforts and is concentrating on moving community members through to a completed weatherization.

CC staff estimate that over the course of the pilot, well over 2,000 residents were touched by their outreach efforts through multiple mailings, presentations at numerous events, word-of-

⁹ CPA outreach also included media coverage - articles in the Tsingdao and World Journal in addition to a cable TV broadcast in Chinese – but CPA sign-ups were linked principally to their mailer and phone banking efforts.

mouth, and media coverage (e.g., cable TV and local newspaper), contributing to the 96 sign-ups of qualified community members. Staffers continue to publicize the program, but are concentrating their efforts on moving community members through to a completed weatherization.

VIII. CBO Outreach: From first contact to customer sign up

The unique role that CBOs can play in outreach was acknowledged by all stakeholders we interviewed. According to Monica Ibrahim, National Grid Program Manager,

Community groups are a useful “on the ground” presence. NGrid has only so many ways we can reach customers – billboards, direct mail. CBOs have a unique role as trusted community members – they do a good job educating customers as a trusted source.

Working to their strengths, both CC and CPA implemented outreach strategies that leveraged their existing relationships with residents and, especially, their standing as “trusted messengers.” CPA’s leadership in organizing the Chinatown community around issues of economic justice such as jobs and land use was a particular strength. CC leveraged its leadership in organizing around social, environmental and economic issues in Chelsea and was able to draw upon existing strategies it has employed in connecting residents to other resources and services (e.g., youth employment, support for immigrants, and providing support to first-time homebuyers).

Both organizations held community meetings, reaching out to core constituents to “jumpstart” local interest in the program. Both organizations also made use of public media, mailings, literature drops, and one-on-one appeals (CPA used phonebanking and door-knocking, and CC is considering doing door-knocking as this report is being written). Finally, CC and CPA approached all prospective participants in their native language. All meetings and materials were designed to be accessible to local residents, whether Chinese (Cantonese or Mandarin) in the case of CPA, or Spanish in the case of CC.

As part of the outreach process, the CBOs also supported owners and renters in finding and filing information to confirm their eligibility for the program. As described below, many people in both communities needed considerable help to complete the multiple steps in the process from their first expression of interest to sign up to the final retrofit. CBOs played a central role in providing this support.

CPA Outreach

Early in the pilot, CPA developed a weatherization outreach workshop for its volunteers. Alice Leung¹⁰, who led the orientation, remembers that it was difficult for her to design and deliver a presentation that clearly explained the program and its benefits. “There is no word for “weatherization” in Chinese “, she reported, “This is a new concept, especially for recent immigrants and some of our elderly.”

CPA pilot staff carefully considered how they would work with their members and volunteers to meet CPA goals for the pilot including energy education for a population that is disconnected from global warming discourse and mobilizing around green jobs for Chinese workers. They also

¹⁰ Ms. Leung served as CPA’s Energy Efficiency Project Coordinator from July 2010 through April 2011.

considered how they could most quickly and efficiently meet the pilot's numerical targets: energy efficiency retrofits in fifty 1-4 unit facilities and four 5-20 unit facilities.

Outreach Phase I: Focus on Chinatown

CPA community outreach began with a CMI kick-off event in November 2010 followed by presentations at a selection of community meetings and cultural gatherings in Chinatown. Arbor researchers observed two of these events: one at a monthly meeting of a local Taishanese community group in December 2010 and another at the Josiah Quincy Elementary School in February 2011. Speaking Taishan at the first event, CPA coordinator Alice Leung reminded the group of elderly and retirement-aged listeners that the Chinese in Boston often do not take advantage of government resources and opportunities and that CPA and others are working to ensure that residents like themselves can access new government weatherization programs. Conversation was lively and the group was enthusiastic about the potential to reduce heating costs in winter, but only a small proportion of the people at this meeting turned out to be residents of Boston.¹¹ At the Josiah Quincy School, CPA's presentation included a slideshow delivered in Mandarin by Ms. Leung and a song written by a CPA member especially for the occasion. The song was based on a well-known Chinese New Year melody but with lyrics that extolled the benefits of energy efficiency retrofitting. In describing CPA's outreach at events, Ms. Leung confirmed that, although few sign ups resulted from these events, they attracted attention to the program. Like articles in Chinese language newspapers, program promotion at these initial community events were intended to create "buzz" and serve as the Chinese community's first introduction to the program's goals and offerings. According to Ms. Leung:

...the thinking was that, since [in] Chinatown ...there was probably no previous outreach done and folks weren't familiar with weatherization at all, it was good to gain more visibility and just do general public education work.

CPA's next step was to contact potential participants directly, drawing on a list of names and contact information for tenants and owners that the CPA and its CMI partners had compiled prior to the Chinatown launch. Lists were constructed based on the CPA's own inventory of Chinatown housing and the City of Boston residents' listings and record of property owners, cross-referenced with prior use data from NSTAR and National Grid and CPA's membership data. The result was a list of names and contact information for people in qualifying buildings who became the focus of more targeted phonebanking and door-knocking efforts. CPA's phonebanking and door-knocking, supplemented with literature drops, continued in Chinatown through January 2011.

While a good strategy in principle, phonebanking in Chinatown led to fewer immediate leads for 1-4 unit buildings than anticipated. Volunteers confirmed that many phone numbers on the master list were not good, tenants accounted for the majority of people they contacted (either through phonebanking or door-knocking), and the largest proportion of these did not qualify because their incomes were below 60% of SMI. Further, many Chinese immigrants and the elderly in Chinatown who are among CPA's core constituents either live in public housing facilities and did not qualify or are on the list for public housing and have no incentive to sign up and encourage their landlord to participate. CPA found through their door-knocking efforts that

¹¹ Many Chinese who reside in Boston outside of Chinatown (e.g. Allston Brighton) and in areas outside of Boston (e.g., Malden, Quincy) participate in meetings and celebrations in Chinatown. Chinatown remains the cultural center of the Chinese community in Massachusetts.

only small pockets of students and professionals met 60-120% SMI. By February, CPA volunteers had reached out to all owner/tenants on the master list for qualifying buildings and had only three audits scheduled. At this point, with the approval of the PAs, CPA expanded the Chinatown CMI to Allston-Brighton and the South End.

The Role of CPA Volunteers

Engaging CPA supporters as volunteers provided additional support for the pilot and diversified outreach workers to include people of different ages and backgrounds, speakers of English, Mandarin and Cantonese, as well as weatherization workers who had trained through the CMI and were able to explain many of the technical aspects of the weatherization process. All volunteers were invited to an initial orientation led by CPA staff that explained the program's relevance to CPA's mission and its importance to Chinese residents and workers. Adjustments were later made to include more training and to ensure that volunteers were comfortable with the work they took on.

I think from the very beginning we thought that we should just get everyone together, have everyone understand the reasons of why we're doing the project and why it's important and [get] people...motivated. And from then on it would just kind of work itself out in terms of finding people for phone banking, door knocking, mass mailing, etc. etc.

[We did]..do the orientation, the training, the practices, which was good. It definitely made people feel a bit more comfortable and a bit more familiar with our [outreach]. But I think as we got deeper into the process, what we realized was that not everyone feels comfortable doing all of those things and in the end...we just have to play on people's strengths. So...when we got to the Allston/Brighton outreach, a lot of the phonebanking was done by two volunteers [who] felt comfortable...doing that piece of the work. And all the other volunteers felt more comfortable doing mass mailing or maybe going with staff to do door-knocking.

Alice Leung, Chinatown CMI coordinator

Outreach Phase 2: Allston/Brighton and the South End

In February, CPA sent out a mailer to households with Chinese last names in Allston/Brighton and the South End.¹² Enclosed in the mailer was a short message on CPA letterhead that announced the availability of free home energy assessments and upgrades for qualifying customers. Benefits listed in the letter included: up to 25% in energy cost savings, free improvements, a more comfortable home year round, a healthier environment and job opportunities for the community. Also enclosed in the mailer was a newspaper clipping announcing CPA's participation in the Chinatown Community Mobilization Initiative, income guidelines for 60-120% SMI, and an informational flyer in English and Chinese produced by utilities for the Chinatown CMI, confirming that Chinese translation services would be available for the energy assessments.

In Ms. Leung's view, CPA's outreach methods complemented each other.

¹² CPA used voter registration lists in combination with the CPA members lists to build a master list of contacts for phone-banking and door knocking in these neighborhoods. CPA included all people with Asian last names on voter registration lists since some last names (e.g., Lee) are common in more than one Asian community.

...all [our efforts] are complementary. I think the order of how we did the outreach was helpful. We first did the mailing, followed up with the phonebanking, and then we did the door-knocking. I think doing the mass mailing first and having the material in the hands of the customers was a good way to introduce them to the program. And then when we did the phonebanking we would refer to the mailing and see if they received it. So it was a very convenient opening line for us.

In Allston/Brighton, phonebanking was immediately more successful than it had been in Chinatown since the pool of eligible participants was larger: a greater proportion of Chinese owners and renters in Allston/Brighton fall into the 60—120% of SMI range. On the other hand, according to project coordinator Mark Liu,¹³ door-knocking in Allston/Brighton yielded fewer results even when focused on streets with qualified buildings and a concentration of residents with Asian last names. One factor seems to have been the number of college students who reside in parts of Allston/Brighton. Despite this, outreach in Allston/Brighton ultimately yielded CPA's third multi-unit building and the bulk of CPA's 1-4 unit sign ups. CPA's efforts in the South End added a few qualified customers but met with many of the same obstacles as efforts in Chinatown: buildings targeted through phonebanking in the South End were occupied mainly by renters with incomes below 60% of SMI.

In Allston/Brighton, where CPA's phone banking efforts were ultimately most successful, volunteers were joined by regular CPA staff to ensure that every lead was pursued in their push to secure a critical mass of customers in 1-4 unit buildings. At this time, volunteers also started using a simplified script to guide their conversations with community members. The core message now focused squarely on access as a right.

With the 1-4 units I think what we found was helpful in the Allston/Brighton outreach was to emphasize the fact that this is a program that the city government and the utility companies are providing and it's for all Boston residents that are income-eligible. And that we realize that a lot of people aren't aware of it, so our goal is to help more people understand it and also apply to it. So the fact that we're trying to be that conduit or that bridge to help people have access to something that they should have access to. That resonated with people on the phone.

For some community members whom CPA contacted, instructions in the mailer combined with a brief further explanation were sufficient to launch them to the next step which was to gather documentation for income verification and, if qualified, sign up for the program and schedule an audit. Others were interested but hesitant to go further without additional information about the true objectives of the program and especially about the conditions and consequences of participation. According to community members we interviewed, CPA's standing as a trusted source made all the difference in these cases. In the words of one home owner in Allston/Brighton:

I saw a flyer at the CPA office and received a letter as well as a phone call from CPA. Then I came in person to ask and check. May explained everything well, I didn't trust it at first, why would they do this for free? So I'm very thankful she explained it to me.

Ms. Leung and her colleague May Lui were the primary points of contact for community members who might not have gone forward without CPA's help. In Ms. Leung's words:

¹³ Mark took over some of the responsibilities of Alice Leung when she left on maternity leave in April.

I think what was helpful was that we are very accessible in the sense that folks can come into the office if they have questions, if they don't know how to fill out the forms. And there was a lot of handholding.

...folks didn't understand how the process works or they don't know what documents to bring, or they don't know where to send it. So there were a number of barriers or challenges of why people can't sign up or they would have trouble signing up. And the fact that we have dedicated staff to help them, the fact that they can just drop by in Chinatown and leave their documents with us or show us their tax returns, was very, very helpful. And a number of them actually just wanted to stop by and maybe see the person that they're talking to. So I think being accessible in those ways was very helpful.

Network Strategies

The CMI design builds on the strengths of CBOs like CPA which have longstanding relationships with people in their community. A network approach – reaching out through existing connections to mobilize community members – was thus a very powerful strategy potentially.

There were at least three ways in which network connections played a role in CPA's outreach. The first was through CPA's engagement of its most active members and supporters. The second was through staff who reached out to residents served by CPA's programs. And the third was through word of mouth, as community members who heard about the program from CPA encouraged their family and friends to participate.

In the first case, CPA anticipated that, with little extra effort, all qualified contacts would sign up to participate in the program. Ms. Leung confirmed that, in the early days of the pilot:

...a lot of the folks that we signed up...were actually through CPA's immediate network. In the very beginning...a lot of the folks that we got to do audits were through our members, within our own network.

Within the category of current active prospects for weatherization are a number of CPA's closest contacts but, as anticipated, only a portion of those contacted initially had incomes in the qualifying range.

According to Ms. Leung, the lead organizer of CPA's worker center also reached out to people who were trained through the center and this resulted in a number of leads. Some people who were connected to the center and who later signed up for the program went on to tell their relatives about it– an example of further network impact.

Since “second degree of separation” network sign ups were not recorded by CPA as network contacts, there are no firm numbers to report but our interviews suggest that communication by word of mouth increased the number of people who signed up for the program as a consequence of CPA outreach. All 10 community members we interviewed who participated in the program reported that they had recommended the program to someone else. One resident of Allston/Brighton reported that she planned to spread the word to other members of the Parents Association at Boston Latin School. Ms. H said that she liked the program because she thinks “...agencies should do more for middle income families.” Many of her friends didn't believe she would qualify, she said, since it is unusual for programs to be available to middle-income people.

Addressing specific barriers to signup

Based on our interviews with CPA staff and with community members, two barriers to program signup stood out: income verification and landlord/tenant issues.

Income verification presents an obstacle for community members who are unsure whether they have or can obtain proper income documentation as well as for those who have the necessary documentation in hand but are hesitant to share personal financial information with the utilities. In both cases, CPA stepped in to serve as a “trusted source” of further information and support. Mr. Y’s home has recently been weatherized through the program. In his words,

...I needed to sort out my income documents. The first barrier is communication because there [are] a lot of technical terms that I don’t know or understand so CPA’s involvement was a great convenience. It would also have cost me a lot of time to try to figure things out on my own so CPA offered professional help and saved me time.

The process of income verification also caused delays and disappointments when people who *did* submit evidence of income to Mass Energy were not successfully signed up because they were missing important information or because their income did not in fact meet the 60-120% of SMI standard. For this reason, CPA began working with some community members to review their documentation first and then forwarded the documentation of qualifying customers to Mass Energy directly. Mr W’s experience is typical:

I’ve been wanting to weatherize my home for a while already so when I heard about this I definitely wanted to take part...[CPA staffer]May Lui called me and convinced me. And then Ms. Leung completed all the information...with me.

To make the process even more efficient, CPA held two events in Allston/Brighton attended by representatives of Mass Energy for income verification and representatives from Next Step Living who scheduled audits. A total of 20 community members were signed up in this way. Shortly after, the City of Boston approved a streamlined process in which community members can sign an affidavit stating that they are income-qualified rather than submitting full income documentation. According to Gabe Shapiro, Director of Community Programs for Next Step Living, the use of affidavits has substantially increased rates of signup for CPA and other CBOs that are supported through Renew Boston.¹⁴

Landlord/tenant issues are common barriers in utility-sponsored energy efficiency initiatives mainly due to “split incentives.”¹⁵ Related to this, CPA identified a sub-group of Chinese landlords in Allston/Brighton who were hesitant to sign up because they were unsure how to approach their English-speaking tenants – either to request that the tenant become income-verified where the tenant paid utility bills or to ask them for permission to open their homes for energy assessments and for weatherization. Ms. Leung described this as both a language and cultural barrier:

¹⁴Renew Boston is a network of energy efficiency providers that provides funds to assist qualified Boston homeowners and landlords make energy improvements to their properties.

¹⁵In addition to financial barriers to participating in energy efficiency programs, households with rental units face a further barrier: tenants who pay their own utility bills have an incentive to participate but must obtain landlord permission. Landlords who do not pay utilities often do not recognize energy efficiency as a priority for short-term investment while tenants must live in the unit long enough to recoup their retrofit investment.

In Allston/Brighton...a lot of the homeowners initially were very hesitant or reluctant or don't know how to talk to their tenants. One middle-aged woman who was the owner of a two-family home called me to say that she didn't know how to talk with her tenant about his income information. In cases like these, we sometimes stepped in to communicate with tenants on behalf of landlords.

I think we definitely played a very helpful role in making sure that [homeowners] have the right resources to do that.

Outreach Results

CPA outreach evolved over the course of the pilot, reflecting both a shift in focus from Chinatown to Allston-Brighton and the South End and continuous learning about what outreach approaches were most effective. For example, CPA soon learned that door-knocking which seemed fruitful in Chinatown was less effective in Allston-Brighton due to the more dispersed nature of the Chinese community in that area.

Next Step Living's records show that 31% of CPA's "total prospects" did not schedule audits. Gabe Shapiro confirmed that an unusually low number of these were referred by NSL to other programs. This suggests that CPA did a thorough job helping community members with income verification. Most "inactive prospects" in CPA's case were customers who did not respond to NSL's calls.

CPA has kept a record of the outreach methods that have brought community members into the program. According to these records, of the community members who are still active or have had weatherization work completed, 53% were reached through phonebanking, mainly in Allston/Brighton. Another 30% were reached through CPA's network. Much smaller percentages were reached by the other outreach methods (mailer alone: 8%, door-knocking alone: 8%, literature drop 1%).

About 30% of owners/tenants who signed up through CPA required intensive support from CPA staff, with the balance of owner/tenants requiring little or no support. Mr. L. is an example of a community member who required minimum support. He reported that he received a mailer from CPA at his home in Allston/Brighton and that he called Ms. Leung at CPA who confirmed he should fax his income information to Next Step Living. When the fax didn't go through, Ms. Leung scanned his documents and sent them to NSL. Mr. L. commented positively:

Alice [Leung] was great! She really pushed things along. I got a quick response every time I emailed her.

As noted earlier, homeowners who were hesitant to approach tenants or who were wary of the program overall benefitted from greater levels of CPA support. Participants at a focus group we conducted in July 2011 attended by people who had completed weatherization work confirmed CPA's role in their case:

CPA is a great help to the Chinese community and I've also joined CPA. I was suspicious of the program at first, but now I totally trust CPA.

Mr. L

Communication is a big barrier (because I only speak Taishanese). I would have no idea what they were talking about without CPA and I would not have found out about the program without CPA.

Mr. Y

I wouldn't know who to call or ask about it and my children are not around to help.

Mr. W

In the largest majority of cases signed up through CPA efforts, community members' first encounter with the Mass Save program was through CPA's bilingual mailer. Ms. Leung believes that many people who required further support from CPA understood the content of the flyer but were most comfortable getting advice in a culturally appropriate form and setting. She noted that, even when CPA organized the events in Allston/Brighton to combine income verification and audit scheduling with Mass Energy and NSL, some people from Allston/Brighton still made the trip to Chinatown.

It was interesting because we had those two income verification scheduling sessions in Allston/Brighton and my thought was if we made that offer to the folks and not have them come into Chinatown, it would be just a lot more convenient. But there were a decent number of people who would say, "Oh, I'm going to stop by Chinatown anyway, so why don't I just come into CPA" and would prefer to come to our office and hand in their documents that way.

[I thought] it was really interesting because at the Allston/Brighton site they could have had their income documents looked at and get an appointment at the same time. But they preferred to make a special trip into Chinatown to drop it off at our office.

Mark Liu estimates that up to 20 community members from Allston/Brighton made the trip to Chinatown for a quick in-person consultation with a CPA staff member before submitting their income documentation.

Both Mark Liu and Alice Leung confirmed that community members came forward primarily to take advantage of a "free" program for which they were eligible – one that would help them reduce their energy costs and improve the comfort of their homes. As noted earlier, some people whom CPA engaged were already interested in weatherization but did not know how to proceed or how to access available resources. In such cases, CPA's role was to link them in to the Mass Save program. Others whom CPA engaged were not interested in energy efficiency and knew little about it, however. Here CPA mobilized its strengths in grassroots organizing and followed up closely with community members. These comments by two Chinese residents of Allston/Brighton reflect those efforts.

I decided to do it because May talked me into it, I didn't really want to do it at first but she was persistent and told me I'd save money and my house would be warmer.

CPA was great and very responsible, they did a lot of follow up. Originally I didn't want to do it but then they called me and told me they were doing screening in Allston/Brighton and said they could come to my house. I said I wasn't available for that time because of work so instead they offered me to go to CPA's office on my day off to complete the forms. The process would

definitely have been difficult without CPA; since I don't know English, who would be free to help me do all the translating and paperwork?

CC Outreach

Given its long history in the City of Chelsea, CC has developed a solid reputation as a trusted organization that stands up for people's civil and economic rights, particularly for those who are marginalized in our society. Much of CC's work provides a strong foundation for its work on the weatherization program. For example, CC has worked with the Neighborhood Development Corporation, providing support to first-time homebuyers and educating them through the entire process. Through its Green Space and Recreation Committee, CC has been in the forefront of addressing many of the city's environmental hazards, including toxic emissions from trucks and nearby planes. Its efforts around immigration reform, and in opposition to workplace abuses, have also been a central focus of the organization.

Network Strategy

The organization's infrastructure, based on membership-driven committees – and focused on immigration, education, jobs and more – provided numerous venues to spread the word about the weatherization program. CC has also developed strong working relationships with numerous other non-profits in the community, and has strong links to the City of Chelsea government, as CC's Associate Executive Director, Roseann Bongiovanni, is also a local City Councillor. Through her leadership on the Council, she was able to engage the City Manager in the project, resulting in the use of federal stimulus¹⁶ monies to provide gap funding for weatherization work. Indeed, CC was well-placed to utilize its networks in its outreach efforts. As Bongiovanni said,

A great many of the folks [involved in the weatherization program] would not be taking advantage of the program, if not for the fact that they know of and trust the Chelsea Collaborative. Having this organization involved makes it okay for people to open their doors, that something good is happening here. It's not somebody intruding on their privacy. There's a lot of trust that we receive, having the program under the organization's banner.

This sentiment was reiterated by many of the residents and beautifully captured by a Latina resident who said,

I think this program is better for having the Collaborative because they have the confidence of an entire community.

Multiplicity of outreach strategies

CC aggressively marketed the weatherization program, employing a wide range of outreach strategies, which included:

- five mass mailings out of CC's office, the last one in June, 2011;
- a mailing from the City, sent to 5,000 residents via their water bills;
- presentations at over ten events;
- a media presence, including three cable TV presentations and a presentation on Univision, the Spanish language cable station;
- articles in print media, including five in the English-language *Chelsea Record*, and one article in *Siglo 21*, a New England Spanish-language news source; and

¹⁶ ARRA (American Recovery and Re-investment Act) funds.

- a notice placed in the *Chelsea Record* by the City Manager in August that included a full-sized flyer about the weatherization program.

As stated earlier, messaging was critical to CBOs strategies, and clearly, homeowners were drawn to the opportunity to have warmer homes and lower utility bills. The Chelsea pilot was able to promote an additional funding opportunity. For this year – and this year only – CC received economic stimulus funds through the City of Chelsea, which allows \$500 to be applied towards the cost of weatherization for each homeowner. In marketing the program, CC organizers took advantage of this prospect, emphasizing to prospective “customers” that this funding opportunity was “one-time-only”, in hopes of creating a sense of urgency about pursuing participation in the program. This strategy turned out to be effective in creating more of a “buzz” of interest within the community. Following is a chronology of CC’s lively marketing efforts:

Starting in November, 2010, CC hit the ground running, doing presentations about the weatherization initiative at meetings of all their standing committees. Organizers described the program as a way to conserve heat in their homes and save money on their utility bills. They also explained that utility customers pay for the program and therefore have a right to access it, encouraging people to take full advantage. Roughly 60 members heard this initial message and 15 people signed up, saying they wanted to learn more about the initiative.

Throughout the life of the project, CC has continued to take every opportunity at meetings and events to make presentations about the initiative, to use their networks for mailings, to utilize English- and Spanish-language media, and to encourage members, particularly those who benefited from the initiative, to educate others through word-of-mouth. For many residents it seemed that hearing about the program through multiple sources helped to mobilize them. For example, one resident whose home was weatherized said she initially saw an announcement about the program in the city’s English language newspaper, but the message was reinforced through personal contact.

But me and my husband both work. We didn't think we would qualify. But then someone I work with said he was getting work done through (the CC). He said to try, so I called here!

In November, CC did their initial mailing to 406 households – using bilingual, colorful “eye-catching” flyers – and as a result, signed up 49 individuals who wanted to learn more about the program. That month, they also attended a number of meetings where they presented the initiative (e.g., FUEL 2 meetings, at a Thanksgiving Day lunch and dinner). In November, the organization also sent out its first press release, and then followed up with press releases several more times, including in December and April.

In November, the CC Director and project organizers were interviewed on Spanish-language Cable TV, and then again in March. A number of articles were also published in the *Chelsea Record*, starting in December, and the initiative was also promoted in *Siglo 21*, a popular Latino newspaper in New England.

In December, CC held an Open House in which 45 community members, government leaders and lenders were invited to celebrate the start of the program. As a result of this event, ten people signed up to learn more about the initiative. CC also distributed flyers to the local micro-lenders in the city, which were then disseminated by bank tellers. That month, the organization – through the support of the City Manager – was able to tap voter mailing lists and

send out a mass mailing, detailing the CMI and its benefits. They targeted 330 households, which resulted in 49 people contacting them for more information. Another mass mailing was sent out by the City Manager's office to city residents along with their water bills.

CC held a membership retreat in January of 2011 at the local high school, in which all of the organization's committees met to do planning and then enthusiastically rallied in the main auditorium to present their strategies to the entire group. The weatherization project was first discussed during the small meeting time by the Green Space Committee and then presented to the entire group. Again, members were encouraged to take advantage of this opportunity to conserve energy, have warmer homes and save money on their utility bills. Following this event, a mass mailing – the third so far – was done to over 400 households in Chelsea. CC continued to disseminate flyers in February at various meetings, including the City Council meeting and at the Board of Health.

In March, CC used the occasion of its first weatherization job to bring increased media attention to the initiative. Held at the home of Alejandrina Rodriguez on a mild end-of-winter day with around 50 people in attendance, speakers got up one by one onto her small cement porch to celebrate the official launch of the project as the actual weatherization work began. In attendance were the PAs from NSTAR and National Grid, the City Manager, energy specialists from Conservation Services Group (CSG), Insul-Pro, Chelsea Bank, Boston Climate Action Network, Green Justice Coalition, CPA, the Carpenter's Union, and organizers from the Chelsea Collaborative. And of course, the two Chelsea workers who were on the job, and Alejandrina, whose house was being weatherized at that very moment.

In her comments, Alejandrina told the audience that as a member of the Collaborative, she was a part of the organization's parent group, and heard about the project through one of its lead organizers, Jovanna Garcia Soto, who came to her Committee to discuss the program.

At that time, I first learned (that) I was paying in my utility bill an amount of money every month for the weatherization program and that I was entitled to obtain this benefit. Everyone at the meeting shared the same problems of high bills and cold houses. Many showed an interest in participating.

The importance of this project, she said, is that,

It gave us access to information in our own language and access to a benefit that we are entitled to. It also offers financial assistance for up-front costs, [without which] many could not access the home weatherization. I felt comfortable going through this process with CSG technicians...and with the support of Ricardo and Jovanna, who were always by my side.

Following this program "launch", CC followed up with targeted mailings to this particular Chelsea neighborhood. They also continued to flyer around the city in the spring at an Earth Day celebration and at a parents' forum at the local high school, and in early summer, at the launch of a new park, in which the organization has played a key leadership role. In August, CC plans to do another mailing utilizing the City of Chelsea's data base, and may begin door-to-door canvassing.

The mixed methods approach to outreach – using mailings, media, presentations at events and word-of-mouth – combined to form a successful outreach strategy. CC organizers were unrelenting in their effort to create a "buzz" in the City of Chelsea, and literally thousands of

people became aware of its benefits. Nonetheless, while potential “customers” heard about the weatherization project through these means, it was the reputation of the Chelsea Collaborative that gave them the confidence to move forward. Here are the comments of several customers” who pursued getting their homes weatherized:

*I heard about it at a CUDE meeting (CC’s committee to address education issues).
Latino Resident*

I was at a meeting. I was very interested. I met with Jovanna and she began explaining the process to me and then I called her and said, remember I’m ‘number one’ (when the program starts).

Latino Resident

I’ve never been here (CC) before but I know that (CC) is a good organization, that it has a good reputation.

Latino Resident

The issue of trust was never far from the surface for many residents. When asked if she would have pursued the program without the involvement of the Chelsea Collaborative, one Latino resident said,

No, definitely not, because I would think that ‘they’ were trying to’ get me’ one way or another, that they would trick me in some way.

One English-speaking resident who had his home weatherized said he first heard about the program through Jay Ash, the City Manager, because he was on his mailing list. Years before, he had crossed paths with the Collaborative, when he was running several non-profits in Chelsea. He comments,

I would not have known about it without Jay Ash, but I would not have done it without the Collaborative.

The success of the CC in its outreach efforts was noticed and commented upon by a number of stakeholders we interviewed. On more than one occasion, Monica Ibrahim, PA from National Grid, commented publicly on what a “great job” Chelsea was doing with outreach; and following CC’s recognition at Community Labor United’s annual Salt of the Earth Awards Ceremony, she commented,

It’s great to see Chelsea following up with the leads and following all the way through to insulation. Keep up the good work!

And Sam Nutter, of CSG, says,

They know their community; they know their constituent; they know how to outreach their constituents. They’ve proven that without a shadow a doubt.

Addressing Income Verification in Chelsea

Once individuals were contacted, the next step was to verify that they qualified for the program, based on their incomes. Initially, Chelsea residents were required to produce information confirming their incomes (e.g., tax returns, pay stubs), but relatively early on in the process of

implementation, the utilities asked them to stop collecting income information from potential clients because CC was not set up to collect non-public information, as defined by state law.¹⁷

At that point, CC organizers began to employ a second strategy to verify income, providing potential clients with the income guidelines for participation in the program, and asking people to self-determine their eligibility. Residents were told that if they earned below 60-120% of the SMI required for participation in the program, they would be eligible for completely free services via CAPIC, the agency serving low-income residents in Chelsea. It was presumed – or hoped – that people would choose free services if they were eligible, over having to pay something for getting their home weatherized.

In addition, residents had to fill out an intake form that asked if they were receiving any type of government assistance, listing ten possible programs, such as fuel assistance, food stamps and refugee assistance. These programs acted as a proxy for identifying low-income status. In order to sign up for the program, residents had to fill out an intake form, which they did either in the office with a CC organizer, or on the phone. The organizer helped people understand the form, which was written in English, providing translation as needed.

If low-income “customers” were not identified even at that stage, CSG also has information about customer participation in fuel assistance, which provides another check-point to weed out low-income customers from the program, and to alert CC that they require referrals to CAPIC, the city’s low-income agency.

There was discussion at the HTR/HTS Charrette about another strategy, which was to determine the neighborhoods that were most likely to have large numbers of eligible residents by census tract, and cross-reference this data available from the City about their housing. Another approach – adopted in the City of Boston – was to have people who were not able to show a tax return to sign affidavits stating that they were income eligible. While this approach was floated, it was never fully discussed among CMI partners. According to CC staff, at the time of this writing, the income verification policy has not been fully resolved. Commenting on this need, CC organizer Ricardo Sanchez raised some important questions about the organization’s role in verifying residents’ incomes.

What’s the definition of an eligible household, and how do you determine that, being an organization that is not set up or established to collect income information from your clientele? How should we treat [the issue]? Should we take people at their word for what they say is their income? How do we push it? That’s still largely unclear. I don’t think we’ve ever come to a satisfactory conclusion.

Delays due to tenant issues

Sometimes when homeowners had tenants who were eligible to be served through CAPIC, the low-income program in Chelsea, the process was delayed. It appears that the delay is related to CAPIC’s capacity to serve the tenant, but it may have slowed down the process for the entire home. One homeowner expresses her frustration, saying,

¹⁷ NSTAR legal counsel advised that CC was out of compliance with state law with respect to the protection of non-public information (NPI). Entities that handle NPI, such as SSNs and tax information, need to have a written information security program (WISP) established which CC did not. NSTAR referred CC to this link for more information:

http://www.mass.gov/Eoca/docs/idtheft/compliance_checklist.pdf

I signed up in December and I still don't have the weatherization done. It was supposed to happen in March, but I have this low-income tenant and so (CAPIC) would pay for it all, and I wouldn't have to pay for anything. But with CAPIC, it takes time.

The tenant was planning on moving in late summer, after which CC plans to help move this process along.

Learning Curves

Throughout the process of implementation, PAs have pulled together all the key stakeholders on bi-weekly conference calls to provide updates and problem-solve. At times, there was a bit of tension in the Chelsea conference call check-ins, which may have emanated from the perception early on by CC that the PAs wanted to over-supervise the development of marketing flyers. Given CC's history in the community, organizers felt confident in presenting materials in ways that would engage its members, and didn't feel the advice from the PAs was on target. The PAs were invested in the success of the program and closely monitored the rollout of the initiative in the biweekly calls, asking for detailed updates, which may have reinforced a supervisory message. Perhaps, given the very different orientations of the two groups, it is not surprising that there were occasional tensions. In fact, all stakeholders had a learning curve in this process. Ultimately, CC developed a flyer that worked for its community and the PAs recognized that the CBO was having success in developing messaging for its community.

CC organizer, Jovanna Garcia-Soto, says that she also had a learning curve in understanding the language of weatherization, but as she became more knowledgeable, she was able to explain the issues more clearly to community members in terms they would understand. At the very start, she also felt that CSG wasn't convinced that CC needed to be in on the screenings.

We were trying to prove that if we participate, (it will) improve the process.

But after one week, she said, "CSG understood that it's very important (for CC to be there). It's an iterative process. Together, we discussed it". Sam Nutter from CSG confirms this growth in their collaboration, saying,

The #1 definitive lesson learned is that these community groups can reach into these neighborhoods, with these populations... I think that without a doubt they've proven an ability to reach into those neighborhood – where the traditional marketing had not been as successful.

Nutter cites the community groups' social networks, their relationships in their communities built over time, and their ability to break down the language barrier and the cultural barriers.

Outreach Results

CC's outreach can be characterized as a multi-pronged strategy that built upon the organizations' networks and maintained a persistent and constant presence throughout the community. It is only now, at the time that this report is being written, that CC organizers are considering doing door-to-door canvassing to achieve their goal. According to their records, out of 96 "total prospects", only six did not schedule an audit. In addition to this number, CC referred 58 individuals to the free weatherization program at CAPIC, the city's low-income program.

CC has kept a record of the outreach methods that have brought community members into the program. According to these records, of the community members who are still active or have had weatherization work completed, 40% were reached initially through mass mailings, 15% through word-of-mouth, 12% through Chelsea Collaborative meetings, 9% through presentations on cable TV; 8% from the open house; 7% from newspapers; 3% from meetings of other organizations and events in the city; and 1% through a mailing that went out with residents' water bills. In addition, almost one-half (48%) were also involved with the Chelsea Collaborative, as active members of or participants in various events and activities.

According to CC organizers, 80% of owners/tenants who signed up through the CMI required intensive support from CC staff, with the balance of owner/tenants requiring little or no support. This issue will be more fully explored in the next section.

IX. From Audit to Retrofit

Once a community member was income-verified and scheduled for an initial energy audit, CC and CPA staff also supported tenants/owners through the audit-to-retrofit pipeline. In many cases, this was a protracted process with steps that, in the case of a 1-4 unit home, might include:

- An initial screening by weatherization experts to inspect and test mechanical systems, determine if weatherization opportunities exist in the home, and to identify any barriers to weatherization (e.g. knob and tube wiring, asbestos).¹⁸
- Owner secures funding to address pre-weatherization issues, if any, and work to address barriers is completed.
- Inspection of the home to confirm that pre-weatherization issues have been addressed.
- A second screening (diagnostic) that includes further testing to identify specific opportunities for weatherization. The customer reviews a proposal for weatherization work and signs a contract. (After 2011, the two screenings – initial and diagnostic – were collapsed into one)
- A work order is completed and the work is scheduled.
- A weatherization contractor comes to the customer's home and completes the weatherization project.

In practice, the audit-to-retrofit pipeline had many possible drop-off points and it was the job of a group of stakeholders – PAs, CBOs, Lead Vendors, and contractors – to address roadblocks and ensure that the maximum number of community members who signed up for the program ultimately benefitted from it.

Some of the coordination necessary was achieved through regular check-in calls attended by representatives of the CBOs, the PAs (NSTAR and National Grid) and weatherization

¹⁸ In households with 1-4 units in the building, initial screening includes the installation of various energy efficient items free of charge, such as CFL light bulbs and programmable thermostats.

experts/Lead Vendors (CSG and, in the case of Chinatown, Next Step Living). Arbor consultants monitored these calls and confirmed that, while the principal purpose was to update PAs on progress with the pilot, the check-ins also provided CBO reps with an opportunity to report on customer problems as these arose and explore remedies with other stakeholders. An example is the difficulty that many customers experienced reserving time for two screenings (initial and diagnostic). Once this was brought forward as a factor that significantly delayed progress through the pipeline for some customers, steps were taken to gather additional information about the condition of the home on intake, allowing the double screening process to be collapsed into one.

CC and CPA staff served as advocates in many other ways to make sure that community members did not fall through the cracks or lose their motivation to proceed. They shadowed individual screenings, translating as necessary. They worked with Lead Vendors to confirm that customers' paperwork was completed, received and acted upon in a timely way. Finally, both CBOs also played an important role in helping community members address pre-weatherization issues which turned out to be significant for many.

CPA: From Audit to Retrofit

At the time of this writing, energy audits have been completed at the homes of over 90 qualified customers who signed up for the Mass Save program as a consequence of CPA's efforts. Once an audit was completed, CPA's work focused on troubleshooting details of individual cases to ensure that participants progressed through the audit-to-retrofit pipeline as smoothly and as rapidly as possible.

CPA staff supported the process in three principal ways. Staff were present at the homes of community members when energy audits were conducted to translate and provide other support as needed; staff provided advice and support to community members who did not pass the audit because of health and safety or other pre-weatherization roadblocks; and they served as a third eye identifying opportunities to improve or speed up the process, coordinating directly with Next Step Living.

CPA did not shadow the weatherization work itself since staff were confident that community members were in the good hands of Chinese workers who had trained through the CMI and were employed by CMI partner The Aulson Company (see Jobs Component below).

Supporting Audits

An initial energy audit conducted by a weatherization expert is the first step toward a completed weatherization. Audits determine what weatherization opportunities exist in the home, what weatherization costs may be covered under the Mass Save program or other financing mechanisms, and what pre-weatherization barriers, if any, must be addressed before weatherization work can begin. In the first phase of the pilot, adjustments were made to the number of steps in the audit process in order to lessen the burden on residents who interrupted their workday to be present for screenings that could take several hours to complete. At the time of this writing, the usual case for a CMI pilot customer is a single audit followed, if necessary, by a later inspection to confirm that pre-weatherization barriers have been addressed.

Arbor researchers observed an initial audit at the home of an elderly man and his wife in February 2011. CPA staff member Alice Leung translated into Cantonese for Mr. L. and into English for the auditor from Next Step Living. The auditor explained the purpose of the screening, the nature of the tools used and the rationale for different elements – for example, testing for latent carbon monoxide, assessing insulation and wiring in the attic, testing the fuel efficiency of the heating system and insulation in the walls. Like other Chinese homeowners whom we interviewed, Mr. L. was impressed with the number of steps, the five hours it took, and the auditor’s willingness to answer questions about what he found. Ms. Leung reported later she thought this audit was very thorough and informative but was surprised that NSL deemed that there were “no opportunities” for weatherization in this home. Ms. Leung confirmed that, in this case, the customer sought a second opinion from a weatherization contractor.

Since most homeowners who signed up through CPA seemed comfortable with the audit process and mainly needed translation, CPA ultimately decided to hire translators for this work. Given the extraordinary time commitment (dozens of audits lasting many hours apiece), it was more efficient for CPA staff to concentrate on post-audit phone calls to address any new questions or concerns that community members had and, if necessary, follow up further with Next Step Living.

Addressing Pre-Weatherization Roadblocks

More than a third of all community members who signed up for the program through CPA and who completed an initial audit had conditions in their homes that needed to be addressed before weatherization work could take place. Individual roadblocks might include one or more of the following: the presence of knob and tube wiring, asbestos, problems related to combustion safety, and/or moisture (mold). For people with low to moderate incomes, costs associated with remedying these conditions constitute an additional barrier to participation. In the case of the two CMI pilots, CC and CPA were able to secure additional funding from philanthropic sources which they used to subsidize pre-weatherization work. To date, CPA has paid out over \$20,000 to 22 community members for pre-weatherization work, mostly in smaller amounts (\$300-400 range) but also including more costly work (e.g. \$7,000 to replace a boiler).

While the availability of funding to address pre-weatherization issues ensured that more people with incomes in the 60-120% of SMI range were able to take advantage of the Mass Save program, some community members recruited by CPA also needed help to find bilingual contractors, complete the weatherization work and get back into NSL’s schedule for re-inspection in a timely way. Community members living in housing in poor condition might have more than one pre-weatherization issue to address. CPA support for such a community member could mean the difference between a customer who dropped out of the pipeline for long periods, perhaps definitively, and a customer who got back into the schedule quickly. As the pilot progressed, this mattered increasingly since scheduled weatherizations through the pilot built up relatively slowly and workers trained through the CMI were on line for the jobs that the pipeline was producing.

Mark Liu and Alice Leung offered several examples of community members whom CPA helped in this way. Some required relatively little assistance:

- Mr. L had mold on his ceiling. CPA worked with NSL to identify and schedule a company that specialized in mold removal to remove the mold. CPA then helped the customer find a bilingual contractor to complete the work necessary. The contractor

repaired holes in the ceiling caused by the mold removal and replaced sheet rock. CPA used pre-weatherization funds to cover the cost of this work.

Other pre-weatherization cases were more difficult to resolve and took many weeks to ultimately address:

- Mrs. C's unit failed an initial combustion safety test. The auditor informed her that her boiler was not drafting properly and that she should hire a specialist to conduct an inspection. Mrs. C. hired an HVAC specialist to look at the chimney. He informed her that the flu pipes on her chimney needed to be re-attached. When this work was complete, Mrs. C scheduled another audit but once again failed the combustion safety test. This time the auditor told her that she needed to sweep the chimney. Mr. C. found a chimney company to do the work. They told her that her chimney needed a new liner.

At this point, Mrs. C called CPA to see if they could help sort out the problem since the company's estimate for the liner was very high and she suspected that the chimney contractor was dishonest. CPA helped her find a second opinion on a new chimney liner and provided \$3,000 in pre-weatherization funds to cover the cost. Mrs. C. admitted that she had little means to assess what appeared to her to be conflicting advice from diverse specialists. When we interviewed her, Mrs. C said she would have not gone through with the process had it not been for the funding and the guidance provided by CPA.

Monitoring Progress through the Pipeline

CPA's workers were vital throughout this whole process; they kept calling to check up on things and anything that I wasn't able to communicate (with the other parties) I would tell them and they would follow up (with the other parties). Very good and helpful.

Chinese resident of Allston/Brighton

CPA keeps a detailed independent record of where each community member is in the audit-retrofit pipeline. This allows staff to advocate for community members at different points – by working to clarify apparent inconsistencies in auditor assessments, for example - and to double-check the progress of customers as documented within the Mass Energy and NSL systems. We function as a squeaky wheel, says Mark Liu. “Sometimes we know documents have been submitted [e.g. results of a health and safety tests] but that's not appearing in Mass Energy's and Next Step Living's status reports.”

Gabe Shapiro of Next Step Living acknowledges the role that CPA has played:

CPA was really successful in getting [customers] through the process. They put more effort into it than any other group. They were directly engaged.

Mark Liu reported that the addition of customer case managers to NSL staff and CPA's closer coordination with them has contributed to a reduction in “lag times.” Still, he says, keeping people moving through the pipeline continues to be challenging. CPA reports that there have been at least two cases in which the process has been drawn out so long, tenants move. Work with the new tenants must start once again from scratch with outreach and income verification.

Even after weatherization work is proposed and a contract is offered, CPA stays in touch with community members. Some factors that contributed to delays in completing the actual weatherization work were beyond the control of CPA, such as winter weather. In some instances, however, customers themselves continued to hesitate. This was the case with two community members who were concerned about the appearance of their homes post-weatherization. To address this final hurdle, CPA put them directly in touch with other customers who had successfully completed similar work.

So far, CPA has not helped community members with HEAT loans¹⁹ to cover weatherization cost beyond the total subsidy offered to Boston Residents through the Mass Save and Renew Boston programs. According to Mark Liu, customers have either been able to pay the additional amount or have decided to split their weatherization work over two years.²⁰

Cost of energy efficiency work for CPA homeowners²¹

In addition to incentive funds provided by the utilities, Renew Boston has provided up to \$1,500 in gap funding to each customer to complete the weatherization work.

- Thus far, of the 15 residents who have had their homes weatherized, 14 residents paid nothing.
- Of the 14 residents who paid nothing to have weatherization work done in their homes, a third (4) received both air sealing and insulation.
- Of the 11 others who paid nothing, 9 had insulation only and 2 had air sealing only.
- In addition to the four residents who paid nothing for air sealing and insulation, one other customer had air sealing and insulation that required a co-pay of \$656.

Further:

- The average cost of weatherization work for the 15 homeowners was \$2,389; the median cost was \$2,723;
- The least expensive work was \$293 and the most expensive was \$4,166;
- The average incentive provided by the utilities was \$1,649; the median amount was \$2,000;
- One homeowner used the full amount of funding offered by Renew Boston (\$1500);
- The average amount of Renew Boston funding used was \$697; the median amount was \$694.

CPA reflections on the results of the pilot thus far:

In a recent interview, Lydia Lowe, CPA's Executive Director, acknowledged that, for CPA, results of the pilot are mixed.

It took a lot more time and energy than we expected...There were delays that we had no control over...For the amount of time and energy invested, the impact on our community was

¹⁹ The HEAT Loan is a 0% interest loan from participating lenders, available to those who are part of the Mass Save Program and in the process of pursuing home weatherization. The loan provides up to \$25,000 for "qualified" energy efficiency measures, such as attic, wall and basement insulation, high efficiency heating systems, digital programmable thermostats, and "Energy Star" qualified replacement windows.

²⁰ Every calendar year, a customer can access the Mass Save subsidy (75% off up to \$2000).

²¹ Calculations based on weatherizations completed as of August 1st, 2011.

fairly small. [But] the learning was great and the advocacy on broader issues [access to energy efficiency programs, green jobs] was really important.

The CPA proposal for the CMI projected that staff would spend a total of 2,225 hours on the weatherization project. Thus far, CPA has spent a total of 1,624 hours and they continue to work on the project.

We also learned that some of this time invested is strengthening CPA's relationships with its constituents and so also community access to the services and support that CPA provides. Mark Liu reported that CPA's service to the Chinese community through the pilot has made some community members more interested in CPA and its work. CPA plans to invite community members whom they have met through the pilot to future CPA events. Based on our research, it seems likely that many will attend. Community members we interviewed - CPA members and non-CPA members – had high praise for the weatherization initiative and CPA's role in it:

I would stay involved with CPA and I have a very strong, positive impression of CPA.

I wasn't a member of CPA before but now I've even signed up for the membership

CPA is a great help to the Chinese community and I've also joined CPA. I was suspicious of the program at first, but now I totally trust CPA.

I would stay involved with CPA. In fact, in the next week or so I'm going to join CPA as a member because, after all, they've helped me so much.

CC: From Audit to Retrofit

"It's a great experience, in my opinion. It's great that an agency is on top of what's happening, the things that usually only the wealthy benefit from... This is like a light behind so much darkness. So it's beautiful to know that people are helping us with these things, who understand that we don't have everything."

Latina Resident

The first step towards a completed weatherization in Chelsea is the energy audit, conducted by an energy efficiency specialist from CSG. The purpose of the audit is to identify weatherization opportunities in the home, including insulation and air sealing, ascertain if there are pre-weatherization barriers that need to be addressed before weatherization work can begin, and determine what can be covered by the Mass Save program or through other financing mechanisms. In the first phase of the pilot, the audit was a two-step process, but adjustments were made to combine the steps into one visit, thus lessening the burden on residents and streamlining the process for CC staff and the CSG energy specialist.

At the time of this writing, energy audits had been completed in the homes of 90 qualified Chelsea customers who signed up for the Mass Save program as a result of CC's efforts. As with the Chinatown CMI, once the audit was completed, CC's work shifted to troubleshooting the details of individual cases, including structural roadblocks and financial barriers, so that community members could progress through the audit-to-retrofit pipeline as smoothly and rapidly as possible.

CC staff supported the process in five principal ways: staff coordinated scheduling of the audits with Conservation Services Group; a CC organizer was present at the homes of community members during every audit, to translate and provide other support as needed; staff provided advice and support to community members who were not approved to progress beyond the audit due to health and safety or pre-weatherization roadblocks, and they coordinated an effort to overcome these obstacles where possible; staff worked with community members who had financial obstacles, supporting the process of applying for a HEAT Loan or local bank loan; staff helped people sign contracts.

Once a contract was signed, CC did not shadow the actual weatherization work, as staff organizers were confident that community members were in good hands with Insul-Pro, the contractor, and the local Chelsea worker who had trained through the CMI and employed by the contractor (see Jobs Component below).

Supporting Audits: Coordination between CC and CSG to schedule the audit

The process is not easy. People have to call us or come here. Then we need to explain the project, and we need to see if they qualify or not. Then we have to schedule the first visit [with the auditor], and the second visit, [and then bring in an] electrician or plumber if they have roadblocks. People don't have time. They have to work. Some people have two jobs. They know English...still ask me to repeat (what the auditor) says to make sure they really understood or to check if we are on the same page. The previous process lost people. Now there's just one visit (which is) good, but the process is still complicated for people.

Jovanna Garcia Soto, CC organizer

Once residents had been income verified and were ready to schedule an audit, the biweekly conference calls among key stakeholders became the venue through which CSG staff would inform CC organizers about the number of available slots in the following few weeks. Following the conference call, Garcia Soto and Sanchez from CC would do the leg work to schedule the audit, which involved coordinating with residents and then informing CSG.

Before the auditing process was modified, it was challenging for CC organizers to schedule two 2-3 hour visits with interested homeowners, given that many of them were unable to take off so much time from work. But after the process was streamlined to one visit, it was easier for CC organizers to do the scheduling.

Nonetheless, CC organizers felt they worked very well with CSG, and that over time they were able to develop systems that facilitated the process.

Presence of CC organizer at every audit

The majority of the prospective homeowners who entered the program are Latino, and many depended both on Spanish-language translation and on the cultural comfort of working with CC organizers whom they trusted. As stated earlier (in the HTR/HTS section), CC organizers estimate that 80% of the people who completed an audit required intensive support, of whom 42% required translation support.

A significant number of interested homeowners shun formal programs and don't feel comfortable having "outsiders" in their homes, either because they are undocumented immigrants or because they have a relative or friend living in their home who is undocumented,

and fear being exposed and deported. Describing the importance of having a trusted messenger, Jovanna Garcia Soto says,

Because we work on immigrant rights, they trust us. They know we will protect them. They know we will not put them in a vulnerable position.

Often, homeowners who speak English as well as Spanish turn to the CC staffers to clarify in Spanish what the auditor said, or to rephrase it in language they can understand. Organizer Garcia Soto says that not only is language, per se, a problem for some prospective homeowners; the weatherization language itself is foreign to many of them. Therefore, Garcia-Soto says she never does “just” translation (e.g., interpretation), and people often follow up what they hear with questions that they direct to CC organizers.

I never say [to homeowners] just what CSG says. We try to explain [the audit] in a simple way. We answer all the questions they have...After CSG says something, they want to talk with us about it, to say the same thing again in different words to make sure they understand what he said. It's not just the language; it's also the weatherization language.

Garcia Soto says that they are also “trusted messengers”.

“They feel comfortable asking us any questions or [for] clarification that they need [during the audit], and also calling [us] after with more questions”.

In an audit conducted in June, 2011, which an Arbor researcher observed, all conversation between the homeowner and CSG was in English, but all conversation between the homeowner and the CC organizer was in Spanish. The CSG representative explained everything he was doing in great detail, and after providing explanations, the homeowner would reply to him in English. But he would then turn to the CC organizer to process in Spanish what he had heard, in order to understand it better.

Throughout the audit, the homeowner’s four-year-old son followed the adults around the house, focusing his attention the most on the CC organizer. She was able to balance providing information and support to the homeowner, while responding playfully to the child. And in fact, a couple of times, when the homeowner needed to leave the room to get something, he comfortably left the child with the adults. This phenomenon – of providing language support as well as creating a comfortable environment – is something that CSG supervisor, Mark Pignatelli, has noticed and appreciates.

Doing energy audits can throw you off – having other bodies in the house...It's been helpful [to have CC in there]. The guys [who do the audits] feel the same way. [CC organizers] can help explain a little better in people's first language and be able to relate it. There's the comfort factor in the house too. It has helped facilitate getting the work done.

Pignatelli says “it’s been awesome working with the Chelsea Collaborative”. It would be “tough”, he says, doing the audits without the presence of a CC organizer.

We run into language barriers all time in the field – and it's difficult – it's awkward. Depending on who's in the home, [people] don't feel as comfortable in the home [with the energy specialist/auditor] to communicate. You don't want to go somewhere where you shouldn't go [in the home]. It wouldn't be impossible [to do it without CC], but it would be very challenging. We'd have to pull in more qualified bilingual services if we were targeting these communities.

At the June audit, the homeowner was very pleased with the attention to detail provided by the CSG energy specialist, and he particularly appreciated the twelve new light bulbs that were installed on a chandelier, as well as two new showerheads including one in a rental unit. In this audit, the experience was successful because of CSG's highly competent worker and the language skills, the ability to pare down complicated weatherization language, and cultural comfort provided by the CC organizer.

Alejandrina Rodriguez, whose home was the first to be weatherized through the program in Chelsea, said that she was able to take the day off from work to "watch everything" the CSG worker did. She described him as extremely professional, kind and respectful. She also expressed great appreciation of the CC organizers, saying,

They give you a lot of assistance and trust in the process.

In summing up, Ms. Rodriguez said that they all "have incredible people skills; they're super-professional. I love all of them!"

Following the audit, organizers advise and actively support homeowners to address physical roadblocks

They are like intermediaries working behind the scenes of the program. They facilitate the process and create a sense of trust so that you feel more comfortable with the process.

Latina homeowner

To move every contract, it takes a lot of time.

Jovanna Garcia Soto, CC organizer

Out of the 90 homes that were audited, 37 are still "active," meaning that CC is still helping them overcome some type of barrier. Out of the 37 units, 24 have physical roadblocks that CC organizers are helping to address; ten of the homeowners require some kind of financial assistance to pay for the weatherization work; and three are simply waiting to sign a contract. As stated earlier, the CC organizers estimate that 80% of the homeowners require intensive support to address physical and financial roadblocks, in order to move forward with the weatherization work.

As noted earlier, common pre-weatherization roadblocks include knob and tube wiring (active and non-active), combustion safety problems, moisture and asbestos. For each of these problems, CC organizers play an active role in contracting an electrician, scheduling his visits to people's homes, coordinating with CSG regarding the outcome of these visits, and scheduling a return visit for CSG. In between calling the electricians and CSG, CC organizers also spend hours responding to phone calls and emails from homeowners who are asking for help in navigating the process.

CSG's Mark Pignatelli, who supervises energy specialists, notes that it takes time to address roadblocks, which slows down the process.

In our case, where we're doing [work on] single-family homes, you find a lot of safety issues – combustion safety – [that] will hold up the whole process, and you need the money to correct that problem. Or if there's older electrical wiring, or if there are moisture issues...

CC organizers often find themselves troubleshooting challenging situations. For example, the electrician they initially hired turned out to work only on basements, so they now need to find another electrician. In one case, a homeowner in the program hired a plumber who didn't speak Spanish, so Garcia Soto had to intervene and provide support. After speaking with him in English, she says "we think they gave [the homeowner] the wrong boiler!" In another case, the contractor wasn't able to complete the work because the homeowner needed to first clean out the area, which moved slowly. Given all of these roadblocks, some people get frustrated and lose their motivation to go forward with the work. Garcia Soto comments,

Sometimes we have to convince people to move things forward, to schedule, to get roadblocks addressed. When they don't speak English, we have to interpret, not just with CSG, but with the plumber too!

Organizers advise and actively support homeowners to address financial roadblocks

As stated above, there are currently ten homeowners who require financial support in order to move ahead on doing the weatherization work. The two sources homeowners are turning to are a Mass Save HEAT Loan or a Chelsea Bank loan.

CC organizer Ricardo Sanchez says that while the HEAT loan program "can help some people", the process of getting the loan is "convoluted." Here's how he describes it: When CSG completes the audit, they leave an intake form with the homeowner. If the homeowner identifies a piece of work they want to do that isn't included in the weatherization work – for example, replacing windows or the heating system or changing from oil to gas – they need to go out and get estimates from contractors, a process that requires managing. Once they get estimates, they have to select a contractor, and then submit a bid – along with the form CSG originally left with them – back to CSG for review. They need to wait for CSG to issue another form that has to go to the lender, and then – at that point – the homeowner can complete their HEAT loan application.

Sanchez says that in addition to the work the bank has to do, they're "layered with the underwriting guidelines". No more than 40% of the homeowner's gross monthly income can be spent on housing costs and all other debt, which includes all their other debt, store cards, credit cards, student loans, plus the HEAT loan. He says the guidelines "aren't super-stringent, but in down times it's an issue."

Not everybody is able to do [that process], and I don't think we currently have the staffing resources to work on those issues. It's time-consuming to deal with... We didn't have to push and prod them to do the loan, but there were all of these steps they had to do in the meantime, and lead their daily lives, do their jobs.

Scheduling the work with Insul-Pro

While CC organizers spent a great deal of time coordinating with CSG, they would like to see more time spent developing systems of communication and coordination with Insul-Pro. Garcia-Soto says,

Now finally, when we have houses ready to do the work, Insul-Pro enters the picture. So it will take time to define a process that will work. We know that CSG is open to define or create the process. I don't know yet how we will do that with Insul-Pro. We need to work on the process and make improvements; it will take some time as well.

CC organizer Sanchez expresses a need for communication around the work that is being scheduled,

We need to have regular communication with Insul-Pro about the work they've scheduled and who they've hired to work on the jobs.

Completed or scheduled weatherization work

As stated earlier, as of 8.16.11, twelve weatherizations have been completed and another four are ready for scheduling. Of the twelve weatherizations, the vast majority of homeowners (nine) paid \$0; two paid under \$100; and one paid \$695. The total for this last job was \$3,195, and included insulation in four walls, the floor and the attic.

The CC proposal for the CMI projected that staff would spend a total of 1,850 hours on the weatherization project. In reality, thus far they have spent a total of 1,840 hours and they continue to work on the project.

Homeowner interest in doing additional energy efficiency work

Interestingly, four homeowners who successfully moved through the process and had their homes weatherized are now interested in pursuing additional energy efficiency measures with support from the HEAT Loan program. One homeowner whose HEAT Loan was approved wants to replace windows, and another – who is still awaiting approval of the HEAT Loan – wants to switch from oil to gas. Two other homeowners whose homes have been weatherized through the program have expressed interest in the HEAT Loan, and are working with CC on the application process.

Cost of energy efficiency work for Chelsea homeowners

As mentioned earlier, in addition to incentive funds provided by the utilities, the City of Chelsea has provided one-time-only gap funding of \$500 to each customer to complete the weatherization work.

- Thus far, of the 12 residents who have had their homes weatherized, two-thirds – or eight homeowners – paid nothing.
- Of the eight residents who paid nothing to have weatherization work done in their homes, three-quarters (six) received both air sealing and insulation.
- Of the two others who paid nothing, one had air sealing done and the other had insulation done in their homes; and
- In addition to the six residents who paid nothing for air sealing and insulation, there were three others who had air sealing and insulation done and paid the following: \$695, \$97 and \$1,602.

Further:

- The average cost of weatherization work among the twelve homeowners was \$1,909; the median cost was \$1,927;
- The least expensive work was \$798, and the most expensive was \$4,102;
- The average incentive provided by the utilities was \$1,377; the median amount was \$1,456;

- Four homeowners used the full amount – or \$500 – of ARRA funding provided by the City of Chelsea;
- The average amount of ARRA funding used was \$403; the median amount was \$485.

CC reflections on the results of the Pilot thus far.

The Chelsea Collaborative joined this project with a belief in the goal of the project, and the means to mobilize Chelsea residents to pursue weatherizing their homes. In the process, CC staffers also learned a lot about weatherization, in general, and the business of moving people through a very complicated process. Organizer Ricardo Sanchez notes that the time involved in getting residents through the process is time-intensive and therefore, more costly, than he expected.

I think we quickly came to a realization that the work involved and the timelines involved were much longer than were expected...simply in terms of scheduling the first appointment and the second appointment. Before you could even get to the point where you could sniff a contract! So I quickly realized that it was costlier in terms of process alone, never mind working with the clientele.

Ricardo Sanchez, CC organizer

Sanchez emphasizes that the process itself is time-consuming, in general, but then adding to this are obstacles faced in serving the HTR/HTS population. That said, Sanchez believes that the initiative “fits” the organization’s mission, and “if those resources were available” would be good to continue.

If you could put the issue of resources aside or [if you] had the resources - this is a very good program to be involved in and promoting...because you're out there, in a personal way in people's personal space. They're allowing you in; they're trusting you; you're building relationships with them. I believe you get through to people in a variety of different venues.

Ricardo Sanchez

Garcia-Soto says the campaign is “like an octopus campaign”. But as Sanchez says, the organization is beginning to see individuals getting involved in other CC-related work, as a result of their involvement with the weatherization program.

For example, the [guy who came in] today...He's trying to weatherize his house and he was part of the training with unions... I [first] met him when he was fighting for his house [to avoid foreclosure] through [the Collaborative], and he was [just] a volunteer with the benches (at the volunteer day at the park). I think that's important.

Other homeowners we interviewed said they planned to work with the Collaborative as a result of their participation in the program. For example, a mother was impressed that CC had a summer youth employment program, and planned to encourage her son to apply next year. Another resident said he had no idea how many great programs CC had. And two of the homeowners we interviewed – who were not able to have weatherization work done in their homes – said CC was like a family, and they were committed to continuing their work on parents’ committees, on the Green Space Committee, and on immigration issues.

Sanchez notes that some of the slow start and time-intensive work on the project may be attributed to typical start-up issues.

Any time you are starting a program, you're bound to not immediately have all the information available to you or systems in place, to be able to properly do the work. And on our end, it's just kind of understanding what the program is, getting trained on it, getting documentation together, getting forms and those kinds of things.

CC staffers recognize that the PAs are considering what role the utilities and the CBOs should or could play in the weatherization initiative. Sanchez jokes,

... [that] if the utilities were to do [the program] themselves, they would quickly find out that they have a number of underperforming employees...who were not meeting their expectations!

Moving forward, CC staffers are heartened by the positive experience they had in the Charrette. At the same time, they are worried that the positive sharing of the problems and brainstorming of solutions may not be incorporated into next steps. Garcia Soto questions who should be in charge of programs like the CMI.

In other states, they have a non-profit or separate agency that doesn't have an interest in energy profits, like the utility companies do. The agency takes the money for [energy efficiency] and works separately. I believe that Massachusetts should consider something like this.

X. Regarding the cost-effectiveness of the CMI model

Determining the cost-effectiveness of the CMI model is not within the purview of the current Arbor evaluation. Nonetheless, we have chosen to address the issue as part of our process-oriented evaluation because it was cited by a number of PAs as a measure of the initiative's success. In particular, we were interested in the varying views regarding measures of cost-effectiveness and whether and/or how they might be applied to the CMI model. In sharing these perspectives, we hope to encourage open dialogue about the meaning of cost-effectiveness in this context.

Reflecting on the success of outreach strategies in Chelsea, Monica Ibrahim of National Grid says that there is “no doubt that the Chelsea CMI has driven up participation in the communities” and that outreach “has had an effect.” However, she asks:

What's the cost been to get those additional savings? If the cost is the same as the general cost to get our energy efficiency savings through the Mass Save program, then we know it's cost-effective because we spend X cost to get X savings.

Likewise, Bill Stack from NSTAR says,

The overarching definition of continuing a pilot is if the pilot has been deemed to be cost-effective.

Ibrahim notes that the community groups were provided a total of \$50,000 (\$25,000 from both NSTAR and National Grid) to administer the CMI and conduct outreach and marketing in their communities. Additional dollars were provided to the contractors to pay for “Davis-Bacon” wages and benefits; that is, to ensure that green jobs created by the CMIs paid on-site workers

no less than the locally prevailing wages and benefits paid on similar projects. Given these costs incurred, Ibrahim questions whether the project is still cost-effective.

Others, like Jan Gudell from NSTAR, comment that “it takes a while for cost savings to manifest....Projects in the pipeline can take a while to materialize as finished jobs”. Gudell notes there are two ways to view energy efficiency savings. “Deemed savings,” as defined by the U.S. Department of Energy, are estimates of energy savings “for a single unit of an installed energy-efficiency or renewable energy measure that have been developed from data sources and analytic methods that are widely considered acceptable for the measure and purpose, and may be applied to situations other than that for which it was developed.” In other words, the unit savings estimate has been deemed acceptable for other applications. The U.S. Department of Energy advises that while deemed savings are useful for program planning, “they should not be used for evaluation purposes when a program-specific evaluation can be performed.”²² Examples provided by Gudell include energy efficiency measures such as the use of compact light bulbs or more efficient water usage.

The other way to view energy efficiency savings is through “calculated savings,” which measures savings on a household-by-household basis, taking into account different consumption patterns which may be affected by personal circumstances such as the number of children in a home or a resident’s job loss.

A PA evaluation staffer from National Grid notes that if she and her colleagues were to do a “straight cost-benefit for this program, we’d look at the savings from the Mass Save program because that’s really what it is for us. It’s just funneling people into [(their) program]”. This PA rep also raised some important questions regarding the future of the CMI model. For example, she asks,

Would it be more cost effective to [implement the program] through the utilities, or would [utilities] face the problem of not being able to reach the population because of all the different cultural issues you might see in smaller hard-to-reach communities?

If the utilities were to play a larger role in marketing and outreach, she said, they too would be faced with cost questions.

We don’t have unlimited people or resources at the utilities either. Saying we could run the program ourselves is one thing, but having the manpower to oversee it....These outreach efforts are very time-consuming. [At Chelsea, they have] 1 ½ people working already and they could use another.

Likewise, Darlene Lombos from Community Labor United (CLU) questions how cost-effectiveness of the CMIs can be measured, saying,

You can’t compare the marketing work that CBOs are doing to the utilities’ marketing work. If utilities tried to this level of outreach and education work, it would be even more costly.

One problem, she says, is that the utilities’ marketing money comes out of a different budget, and in fact, “utilities’ marketing is not held to the same cost-effectiveness test.” Lombos argues that there needs to be a broader definition of cost-effectiveness that takes into account “non-

²² http://www1.eere.energy.gov/ba/pba/program_evaluation/glossary.html

energy savings,” which include social and economic benefits within the communities served. The work of accessing HTR/HTS populations may be more labor-intensive, but she says, “we pay into it. We should be able to access it!”

Ibrahim comments that “we are waiting on the final evaluation, and seeing where that goes, and then we’ll solidify our next steps.”

Bill Stack of NSTAR says it’s important to look at the broad picture in determining cost-effectiveness, commenting,

We know the model [of updating heating systems and adding weatherization] is cost-effective. On top of that model, now we’re spending additional dollars for outreach. That will be the defining mechanism as to whether the pilots are continued. But if it’s close and we have a whole story to tell, not only about the participant level, but good will created in the community....There’s a whole dynamic that we need to make sure is expressed, as opposed to a plus b plus c, divided by such....We want to have the whole story to tell.

As stakeholders consider the results of this evaluation report and other data relevant to the impact of the CMIs, it is important to note that the pilots themselves were not designed to be replicated across the state and continue in this way. Rather the pilots were designed to surface barriers and best practices that could inform the design of statewide programs going forward.

XI. Jobs component

The CMI jobs component promised to meet core goals for a range of key stakeholders: trade union experts would prepare local Chelsea and Chinatown workers for well-paid, stable green jobs in the weatherization industry; weatherization work would be generated through the initiative in Chelsea and Chinatown; and experienced, union-approved contractors would benefit from economies of scale to provide stable, well-paid employment to local workers.

Trainings conducted for CPA by the Painters Union and for CC by the Carpenters Union were designed to increase workers’ familiarity with U.S. building standards and prepare trainees specifically for weatherization jobs, including ways to recognize and address common health and safety issues related to weatherization work. All CPA and CC workers trained by the unions received OSHA as well as lead certification – a level of training that is essential to the maintenance of health standards in the industry but not what most workers doing weatherization receive.

Successful training

By all accounts, the ten-week training programs were successful. Eric Reading of the Painters Union reported that CPA lead staff, union trainers and the CMI’s employer/contractor, The Aulson Company, collaborated to ensure that the training was thorough and adapted to the needs of the trainees. Both Painters and Carpenters Union trainings included in-class lectures as well as comprehensive hands-on work in well-equipped union facilities. The Aulson Company brought in their own equipment to Painter Union facilities for the hands-on components. Chelsea trainees went to another facility for air sealing training.

For the first time, the Painters Union conducted a bilingual training co-led by a Chinese-speaking trainer, providing monolingual Chinese workers with an opportunity to access an industry that they had not in the past. In the words of one CPA trainee:

The good thing about this program is that it's led by Chinese people so even if you don't know English you can still find a job.

Worker/trainees whom we interviewed also emphasized the benefit of having the OSHA and lead training and certification. Carlos, who has been working with Insul-Pro in Chelsea, opened his wallet and proudly spread out his new cards. Commenting on the usefulness of this aspect of the training, a CPA trainee confirmed,

It was very, very important to learn about the safety practices. For example, a lot of old houses have lead in the paint so we learned about how to protect ourselves and wear appropriate masks.

Once trainees are hired, they are able to receive union cards, which ensures that they will be paid at the higher union rate. All the workers we interviewed expressed satisfaction with this opportunity. In the words of one worker who is currently employed doing weatherization work:

It is good because it's a better paying, stable job. Now I don't have to work at restaurants or drive buses. And, with this job, I can pay taxes and have insurance.

Finally, CMI workers who are currently on the job received high praise from their employers, a further testament to the quality of the training as well as the trainees. Insul-Pro's Victor Cimino says,

They just want to work, and they get along with my workers. I've been trying to get the guy (Chelsea trainee) to work. He's a regular guy. He speaks awesome English. He seems very educated...He bangs it out so fast. I love to see inner-city projects be busy.

Aulson's Joan Ryan also had nothing but good things to say about the CPA trainees:

I hear no complaints at all about our Chinese workers. They want to work.

Poor economy affects the industry

While important strides were made by the unions in strengthening the jobs training they provided to workers, a combination of factors negatively impacted the number of actual jobs created. One important factor affecting employment through the CMIs was the broader economy. Mark Erlich, President of the Carpenter's Union, describes the weatherization industry as "a mom and pop" industry that typically doesn't provide a career path. The CMI was intended to create a swell of work by bundling jobs, thus creating enough work for weatherization companies to provide stable, steady work to local workers. In retrospect, Erlich says,

The bottom line is that a job creation program within the trades industry during an economic recession is bound to run up against difficulties.

Victor Cimino from Insul-Pro, contractor for the Chelsea CMI, confirmed that the economy has hit the weatherization industry hard. As a company that specializes in insulation work, Insul-Pro is dependent on one industry. "All we do is weatherization", he says. In 2009, Cimino says the

company did “really well”, with seven to nine jobs per day, in contrast to their current average of three to five jobs a day.

The profit level in insulation [is such that] three jobs are just covering the bills... And with the green [jobs], we're in and out of work. You have to do these jobs in a day and be perfect! If these guys are taking three days [to do one job], you're not making any money!

Given the effects of the poor economy on the industry, Insul-Pro has broadened its base by generating more government sector work with state and local agencies that serve low- and moderate-income residents.

The Aulson Company, which is contracted to work with the Chinatown CMI, offers a broad portfolio of industrial contracting services but had not been active in residential energy efficiency retrofitting prior to the pilot. In part as a consequence of the CMI, Aulson has also succeeded in broadening its base and now secures contracts through state and local agencies in New England that serve low to moderate income households. The number of contracts has not met company expectations, however. According to Aulson's Safety Officer, Joan Ryan, there were three “values” that the Aulson Company had going in to the CMI: “giving people jobs, having enough work, and being a profitable company.” “There was lots of enthusiasm in the beginning,” said Ms Ryan, “[We thought there would be] all kinds of programs to get.”

Old housing stock, pre-weatherization issues and finances inhibit the work flow

Nearly one-half of Boston housing stock is over 70 years old. Common problems found in old housing – such as knob and tube wiring, moisture and combustion issues – have significantly slowed down the contracting process. The pilot community groups have funds from various private foundations to address pre-weatherization issues, and the Massachusetts HEAT Loan can also be applied to address these issues. But all of this takes time. Consequently, the work flow has been much slower than originally anticipated, which has a domino effect on the availability of work created for Chelsea and Chinatown workers. Steve Falvey, an organizer with the Carpenters Union, comments,

You don't want to insulate a home that doesn't have a roof! If there's mold or other problems, there's a lot of work before you get to insulation. That eliminates a lot of houses that have structural barriers, knob and tube, mold, exhaust spillage.

For some residents, the cost of doing the pre-weatherization work is prohibitive, even with financial support provided by the utilities, private foundations, and the HEAT Loan.

Not enough work generated from the program to bundle jobs and provide steady work

In the original CMI design, it was anticipated that bundling jobs would reduce costs and contribute to a steady stream of jobs for workers. Because of the slow trickle of contracts signed through the CMI and the staggered supply, it has been impossible for contractors to bundle jobs. As a consequence, costs for contractors have not been reduced as anticipated and the amount of contract work available to the CMI trainees has been disappointing. Workers are now frustrated because there is not enough work. CLU and the CBOs are also disappointed because they wanted to provide good-paying green jobs to local workers in Chelsea and Chinatown.

While ten Chelsea workers started the training, five completed it, and only one worker has regularly been hired. In the case of the Chinatown CMI, twelve workers have completed the

training and four workers have been hired by The Aulson Company. CC and CPA workers who have been hired have received union cards and will be eligible to receive health and other benefits once they have completed six months of work.

It was originally anticipated that there would be enough work to benefit from an economy of scale, allowing workers to complete multiple jobs in a single area. But with work generating at a slower pace, Chelsea and Chinatown workers have not had steady work. In Chelsea, only one worker, Carlos, has been regularly hired, and the work has been sporadic. He might have one or two days one week, and then nothing for a couple of weeks. Carlos comments,

You go in there with high hopes that there will be work everyday. It's annoying! Since my first day, I loved the job. It feels like I picked it up like this (finger snap) and then nothing happens. And then they called me back and I'd work two days out of the week. And it's been two or three weeks since I've last worked.

Carlos is committed to making it work though. Rather than looking for another full-time job, he juggles other part-time jobs, and has just completed training to be a firefighter, a profession that allows for part-time hours. But it's not easy.

To do this, you have to like it! Not a lot of people are going to sit around for a phone call about work. I was lucky I had money saved up. I have two kids and it's more stressful for me. If I'm not working, I'm not providing for the family. I'm struggling here. It's not for everybody.

Another Chelsea worker was a journeyman contractor in his home country of Cape Verde, and had high expectations about being able to do weatherization work in the U.S. After completing the training, he was unemployed for a few months, and ultimately found a full-time job working in a hotel at a decent wage.

There wasn't enough work. I have my mortgage to pay. I have my family to take care of. At least I have eight hours a day. \$18 an hour...

Initially, CC organizer, Jovanna Garcia Soto, tried to advocate that the contractor hire more of the Chelsea workers, but soon realized that work wasn't being generated quickly enough through the program.

In contrast, the Chinese workers we interviewed were mostly optimistic, as exemplified in these comments by employees of the Aulson Company:

It is very important for Chinese workers; for Chinese people who have just arrived in America, they don't know anything or anyone, this job is a very good opportunity.

For me this job definitely pays more than my previous jobs; it's better than before because I just made \$11 an hour but now I make \$19

Reflecting on the job component of the Chinatown CMI, Lydia Lowe, CPA's Executive Director, nevertheless expressed concern for the bulk of trainees and workers:

I worry about the workers we trained. Will they have enough work? It's connected to the larger economy.

At the time of this writing, all CMI partners acknowledge that the goal of creating a pipeline for weatherization work through the pilot is not being met as anticipated. Elements over which CMI partners have had direct control – such as the training program – have been very successful. But the slow generation of retrofit work due to pre-weatherization and other issues, and the consequent impossibility of bundling, has left contractors and workers in a difficult position. According to Darlene Lombos of CLU:

What was not under our control was the pace at which contracts were signed. ..The small number of jobs at higher pricing simply didn't allow for companies who took part in the pilot to have steady work.

Lombos also noted that one of the barriers to creating high road jobs in the weatherization industry is pricing. We've been able to set the floor in relationship to job standards and OSHA," she said, "But we have not yet been successful in raising the ceiling." According to Lombos, Green Justice Coalition partners are working to show that a well-paid workforce can be cost-effective but, until that happens industry-wide, it is unlikely that companies will create the number of jobs for workers that are needed.

Davis-Bacon wages and benefits²³[1]

When the CMI was in the planning stages, CLU negotiated with Mass Save to increase the wage rate by 30% over what they typically pay for weatherization work, bringing it into parity with Davis-Bacon wages and benefits, the same as the residential union rate for this work. Because both Chelsea and Chinatown CMI's have been partially funded through public funds, with Chelsea receiving ARRA funds from the City of Chelsea, and Chinatown receiving ARRA funds through Renew Boston, Davis-Bacon wages are triggered and applied to the work done by CMI workers. Thus, the weatherization work that Chelsea and Chinatown workers are doing is paid at the Davis-Bacon, union, rate.

The total package for a carpenter on weatherization work is based on the Davis-Bacon rate of \$25/hour, including wages and benefits. The benefit rate is \$6.15/hour per individual. Mark Erlich, the President of the Carpenter's Union said that out of the three companies they were looking at seriously, they concluded that Insul-Pro would be the best company to work with on this project.

Everybody else would have had to re-jigger themselves and establish a new wing of their company at a time when everybody is freaking out about whether the company is surviving – to make the cap – cap investment in trucks, and equipment.

When Insul-Pro initially signed on to the CMI, Victor Cimino said they were asked to look at the pricing and "see if it would be possible to do it union." At the time, he concluded that it was doable, saying "we came up with pricing to do it union." Insul-Pro pays its own workers \$18.21/hour, and also includes health insurance and vacation.

Cimino recognizes that all of his workers need a 40-hour week to pay mortgages and buy food for their families. While he would like to put CMI workers on his non-CMI jobs, the agreement made with the union requires CMI workers be paid Davis-Bacon rates for all the work they do

²³ Davis-Bacon wages and benefits derive from the 1931 federal law which requires that prevailing wages and benefits be paid to workers on government construction contracts to private contractors.

with the company, and not differential rates depending on the source of the work (public vs. private). Cimino says he can't afford to pay the Davis-Bacon rates, but because of the tight economy, doesn't plan to leave the CMI.

Monica Ibrahim from National Grid says that going forward, “contractors need to participate under our set program pricing within the Mass Save program for National Grid.” She doesn't see “any more of this contractors getting preferential pricing because they happen to be that lucky contractor partnering with the community groups and CLU.” She envisions that in the next iteration of this initiative, contractors will participate in the Mass Save program, “offering Mass Save, National Grid-approved pricing.”

Clearly, the issue of whether Davis-Bacon (or union) rates will prevail moving forward brings forth very different perspectives. CLU staffers point out that contractors would be in a much better position to pay higher wages if the unit pricing offered by the utilities were higher.

Says CLU organizer Keith Wrightson,

Ultimately, we have to pressure Mass Save to get them to increase their pricing.

XII. Impact of Charrette

As discussed earlier, a successful partnership requires collaboration among key stakeholders. The PAs took the initiative to hold a Charrette led by outside consultants, in order to engage key CMI players in a strategic planning process around key questions related to the Hard-to-Reach/Hard-to-Serve population (HTR/HTS). Forty individuals, representing many of the key stakeholders, were in attendance. Through a combination of sub-group and full-group discussion, the facilitators encouraged open dialogue aimed at generating conceptual program ideas, identifying what in the existing regulatory arena would need to change and who would need to be involved in permitting these changes.

For two days, the group took on a range of critical issues related to the HTR/HRS population, including: defining HTR/HTS, discussing barriers that limit or prevent program participation, defining strategies to resolve these barriers, and the articulating the pros and cons of various solutions. Given the myriad perspectives of people in the room, it was critical that people were able to hear and understand one another's views, as well as work together to find solutions.

According to participants, the Charrette was extremely successful on a number of counts. First, the design of the Charrette – in which open discussion of problems and solutions was encouraged – succeeded in allowing participants to better understand one other's individual perspectives and organizational missions. Says Sam Nutter of CSG,

One of the most valuable aspects was the communication and people understanding each other better, and where they're coming from...I think the community groups got a better idea of where utility administrators are coming from; and certainly program administrators got a better understanding of where community groups are coming from.

Monica Ibrahim of National Grid says,

The HTR Charrette was a huge success where a lot of us got to meet face-to-face. Our relationships are good and getting better all the time.

Jovanna Garcia Soto of Chelsea Collaborative says,

A lot was said. Everybody felt that overall it was extremely beneficial. It was a great opportunity to get together and understand the perspectives of the different groups.

Moreover, the Charrette provided an opportunity for participants to share their best ideas for addressing problems in reaching and serving the HTR/HTS population. Ibrahim comments that “we’ve come a long way from the beginning”. She cites the experience of the Charrette as an indication of that progress, noting the benefits of a forum for key players to share best practices. She was also grateful to have an opportunity to talk with community groups about some of the constraints faced by the utilities.

Honestly, I do think the Charrette helped. We talked about regulatory challenges like using HEAT loans for pre-weatherization. [Danielle Rathbun, from] the Attorney General’s office, was there as well. It was good for her to hear.

Garcia Soto notes that “everyone agrees on the problems, but we have differences around the solutions.” While everyone was pleased to put the solutions on the table, the differing perspectives are far from resolved. And in part, that is because they reflect the diverse perspectives of each of the stakeholders. For example community groups pushed for ways to create more equity for moderate income customers, reflecting their social justice perspective. The energy specialists suggested ways to more efficiently coordinate the system for serving the HTR/HTS population, reflecting their expertise in stream-lining service delivery. And the utilities articulated their support of the work being done by the community groups and shared the limitations they face, reflecting their desire to promote the CMI model in a “cost-effective” manner. Ibrahim says,

There have been some challenges of course. But we are here to play fairly with all our partners. We are here to support community groups to be there facilitating the calls, in meetings, trying to be good partners in providing training and advice to CPA and Chelsea.

As noted in the Final Report on the Charrette, some of the solutions offered are defined as relatively easy to address, like improving data collection among collaborators and hiring multilingual energy assessors; others are defined as more complex, like implementing a tiered incentive plan or a case manager program, requiring more discussion and possibly research and analysis, to consider the implications. One interviewee noted that “we need local contractors to work with local people,” and another said “the utilities need to be more transparent.”

One interviewee commented that while everyone was able to express their views at the Charrette, it was “only two days,” and the structured format limited discussion. That said, all eyes are on what happens next. Nutter comments he’s been to similar retreats over the years “where everybody gets jazzed up for two days and [then] nothing happens.” He adds,

I certainly hope in this case there are enough people active and passionate about this stuff that something will happen...I guess time will tell.

XIII. Reflections and Recommendations

Following are reflections informed by results of Arbor evaluation research. Recommendations follow.

Addressing Hard-to-Reach/Hard-to-Serve households within 60-120% of SMI

Clearly, both CBOs played a critical role in addressing the needs of HTR/HTS households within 60-120% SMI in their target communities. Because both organizations are well-established and have strong credibility in these communities, they were met by prospective “customers” with openness and trust. Both CBOs were persistent in their attempts to identify pockets of opportunity during the marketing stage, as they tested out different strategies to engage residents in the program. And they were persistent troubleshooters during the audit-to-retrofit process, as CBOs provided intensive support to homeowners to overcome physical and/or financial barriers to weatherization.

Differential proportions of community members in CC and CPA need intensive support

As noted in Section V, the Chinese Progressive Association reported that 30% of those who signed up for the Mass Save program required intensive support, compared to 80% of individuals signed up by the Chelsea Collaborative, of whom 42% required language support. What accounts for the differences? Based on our analysis, both organizations provide intensive support to those with pre-weatherization roadblocks related to the old age of the housing stock; and both organizations worked with individuals with linguistic and cultural challenges who needed help navigating through the audit-to-retrofit process.

We hypothesize that in addition to these issues, there is an additional layer of discrimination in Chelsea related to the minority status of Latinos in our broader society. The most obvious manifestation of this added layer is the immigration status of many Latinos as undocumented and therefore vulnerable to deportation. Given the majority Latino population in Chelsea, reflected in participation rates in the CMI, a significant number of prospective “customers” are either undocumented immigrants or living with family or friends who are undocumented. Even when these individuals have no undocumented immigrants in their homes, people have friends and families who may be undocumented. We suggest that the discrimination experienced by many Latinos in our culture has a spillover effect that is felt in the CMIs, contributing to alienation from mainstream programs – particularly those that require home visits – and resulting in low expectations of what mainstream programs can do for them.

The opportunity to work with an intermediary organization that is well known for its advocacy on behalf of immigrants is an enormous plus for prospective customers as well as the utilities, and the amount of work required in addressing roadblocks creates an additional challenge given Latinos’ status and experience in the U.S.

Certainly in the case of Chelsea residents, these factors suggest that there is a subset of the HTR/HTS population that require more intensive support from a non-mainstream, trusted partner. We suggest that there may be other subgroups that require this level of more intensive support in moving from audit to retrofit.

CMI jobs component

A poor economy has provided a less-than-ideal environment for a pilot employment initiative. But a protracted process for generating weatherization contracts also contributed to disappointing opportunities for CMI employers and workers. To the extent that the audit-to-

retrofit pipeline is made more efficient and funding is available to address pre-weatherization issues, the pipeline will likely generate more work at a higher and more predictable pace.

An additional barrier to creating high road jobs in the weatherization industry more broadly is pricing. Working to raise unit prices continues to be high on the agenda of CLU and other CMI partners.

Mid-course corrections

The process of implementing a pilot affords the opportunity to test strategies. It is a testament to the responsiveness of the pilots that the two-part audit process was collapsed into one. Both CBOs had reported problems with having such a time-intensive auditing process, and all parties – including the CBOs, the Lead Vendors and the customers – were pleased with the outcomes.

As expected, both CBOs were on a learning curve in terms of developing a deeper understanding of weatherization, as well as figuring out the most effective methods to market the CMI in their communities. CPA began with a strategy that employed volunteers, but modified this strategy to involve more time and effort from CPA staffers. CPA also began in Chinatown and learned fairly soon that the population they were reaching had incomes below 60% of SMI. They completed their outreach activities there to confirm what they suspected, and then shifted their entire operation to Allston-Brighton and the South End where they correctly gauged that they would find people who were eligible and interested in the program. CC began with two new part-time staff, but quickly discovered that the work was more labor-intensive, and ultimately involved more time than expected from a lead organizer and the Associate Executive Director. When CC staffers felt they had reached the threshold of opportunity in one Chelsea neighborhood, they moved to another.

In any pilot, it is to be expected that the startup phase will be labor-intensive as all parties learn to collaborate and some of the challenges are ironed out. We would assume that a continuation of the CMIs in these neighborhoods would run more smoothly, given lessons learned.

Tracking data

In any pilot, it is to be expected that the start-up phase will be labor intensive, as all parties are developing systems to communicate and collaborate, and some of the challenges are being ironed out. The process of moving from the audit phase to having one's home retrofitted is complex and includes many stages and a cast of characters. ACP developed tracking tools for CBOs to monitor the process of outreach leading to individual customer sign-ups. A data tracking system was developed by CSG as an interim measure to help CC track customers in the process. But this system was never intended as a case management tool. NSL updated tracking data in monthly charts that were easy to interpret and helpful to PAs as well as to CPA staff on the ground.

Organizational structure of CMI

The objective of the CMI collaboration is for each stakeholder to focus on its core strengths. Gabe Shapiro of NSL observed that CBOs' strengths lie in the area of community outreach, whereas Lead Vendors and contractors are best placed to coordinate work during the service phase. At the Charrette, Sam Nutter of CSG proposed that CBOs find local contractors, to

whom they bring leads, and the contractor brings those leads to the program. Once an assessment is done, it would be given back to the contractor and the contractor would work with the community groups as needed.

This and other possible arrangements to leverage CBO's competencies while reducing transaction costs should be discussed jointly by all stakeholders.²⁴

The importance of utility-sponsored targeted program for moderate income families, given high costs of weatherization

Evaluation results show that the average cost of weatherization for homeowners served by CPA and CC is high (\$2389 and \$1909, respectively). In addition to community members' testimonials that they would not have weatherized their homes but for support from CC and CPA, these elevated costs confirm the importance of utility-sponsored programs for low to moderate income families within 60-120% of SMI.

Broadening the calculation of cost-effectiveness of CMIs

A straight return-on-investment calculation of the CMIs would not fully reflect its broader impacts. Many of the non-energy benefits of the program are indirectly related to the energy benefits. These include the good will towards the utilities in the community where the program is implemented, and the longer-term effects of the program on the health and well-being of the community.

Increasing the efficiency of outreach efforts

Finally, we note that the two CBOs might have been far more efficient in their outreach efforts had they had more information about which buildings and households to target. This includes information regarding the condition of housing in target areas and information regarding which homes had already been assessed and weatherized.

Recommendations

1. Continue support for CBO participation

The purpose of the pilots was not to replicate CMIs across the state but rather to surface information that could inform program design going forward. Based on the results of this evaluation, we recommend that the EEAC incorporate best practices surfaced through the CC and CPA pilots into the overall statewide program. We further recommend that CBOs receive ample funding to perform marketing and outreach functions in local communities as well to support community members through the audit to retrofit pipeline.

2. Engage community partners in decision making

We believe that the partnership created by the CMI pilot has provided an excellent opportunity to bring together community groups, the utilities, unions, contractors and CLU. We recommend that this partnership continue, and that the important voice of community partners is maintained throughout the planning and implementation process.

3. Continue to seek ways of creating an effective pipeline

²⁴ For example, the Massachusetts Alliance of Portuguese Speakers (MAPS) is an NSTAR contractor for its energy efficiency program for small businesses. MAPS is a CBO that serves local Portuguese-speaking communities in Massachusetts.

Creating an efficient pipeline that minimizes barriers for HTR/HTS customers will generate more weatherization contracts and result in more jobs for workers who are newly trained to do weatherization work. Conversations among stakeholders about how best to address pre-weatherization issues, including securing sources of funding to provide subsidies to customers with incomes within 60-120% of SMI, should continue.

4. *Attend to differential need for support*

In light of our findings of differential levels of support needed in Chelsea and Chinatown, we recommend that very careful consideration be taken in the next planning phase to determine the levels of intensive support needed to ensure true participation in the program, and to incorporate this concept of differential levels into the planning process. This determination must include input from community organizations/partners.

5. *Utility-funded energy efficiency programs targeting low- to moderate-income families should be funded at appropriate levels*

In order to maximize potential for customer participation in HTR/HTS communities, utility-sponsored energy efficiency programs should be funded at appropriate levels to subsidize associated costs.

6. *Create a user-friendly data tracking tool*

Attention must be given to develop a user-friendly tool that will help CBOs track customer progress from the initial audit to completed retrofit work.

7. *Broaden the calculation of cost-effectiveness of CMI*

We recommend that “indirect benefits” be included in any calculation of cost-effectiveness of CMIs. Although more difficult to measure, these indicators of program impact, including good will generated towards utilities and the longer-term effects of the program on the health and well-being of communities, are important. Efforts should also be made to incorporate these measures into any future evaluation efforts.

8. *Hold a facilitated conversation among stakeholders to confirm roles going forward*

Key stakeholders will shortly begin developing a three-year plan, the next iteration of the project beyond the pilot. The problems and solutions articulated in the HTR/HTS Charrette provide an excellent foundation for this planning process. All stakeholders agree that each participant in this collaboration should reflect their core strengths. We recommend that this evaluation report provide a jumping off point for a facilitated conversation to discuss the role of CBOs going forward and other key issues raised here.

9. *Sharing of information to improve efficiency of outreach*

We recommend that utilities share all relevant information that could lead to more targeted outreach by CBOs, including information related to units and buildings that have previously been surveyed for weatherization opportunities.

About Arbor Consulting Partners

Arbor Consulting Partners (ACP) is a collaborative of three experienced social science researchers with strong evaluation skills, a commitment to working collaboratively with its clients, and expertise that is directly relevant to this project. As a collaborative, ACP draws

upon and combines expertise in areas that include environmental health promotion and research, impact of training initiatives, social network analysis and campaign impact evaluation. Examples of other relevant research we have conducted include a multi-year evaluation of an NSF-funded project designed to build the capacity of environmental organizations to teach quantitative literacy skills to the socially and economically marginalized populations they serve, and an evaluation of a multi-year global health campaign led by Physicians for Human Rights.

Appendix I

A. Interview Protocol: CBO Leaders

1. Why did your organization decide to get involved in the CMI?

Probe:

- To what extent does the program fit into your organization's overall mission?
- What were you hoping to achieve with the CMI in your community?

2. What experience did your organization have with climate change mitigation prior to the CMI program funding?

Probe:

- How did the CMI build on climate mitigation activities within the organization?
- Did you have experience with weatherization prior to the implementation of the CMIs?
- How would you describe your learning curve in implementing this program?
- What is your staffing for this program?
- When you hired new staff for the program, what experiences and skills were you looking for? (e.g., experience in weatherization, language and cultural skills)
- Are you pleased with the staffing hires you made?

3. What are you hoping to achieve in implementing the CMI in Chinatown/AB-SE/Chelsea?

Probe:

Shorter-term goals?

- Increase the number of residents who have access to and complete energy retrofits (e.g., particularly those who have historically faced barriers to being adequately served by rate-payer and taxpayer funded retrofit programs)
- help community members realize increased energy savings
- help community members realize increased money savings
- help community members avoid relocation due to inability to pay utility bills

Longer-term goals?

- Promote economic and community development in community
- Increase community interest in and capacity for climate change mitigation
- Improve public health in community
- Generate new knowledge about engaging low income communities and communities of color in environmental justice-oriented climate change mitigation
- Increase involvement of residents in other CBO initiatives
- Engage new constituencies or types of residents in CBO initiatives
- Develop CBO outreach skills
- Increase numbers of local workers are doing retrofit work in neighborhood
- Strengthen the local infrastructure to undertake & support community education and action around climate change and other community goals

4. How would you describe your outreach strategy to find potential candidates for energy retrofits? (e.g., meetings, presentations, door-to-door visits, mailings, phone banking)

Probe:

- What have you learned are the most effective strategies to identify likely candidates for the program?
- Why do you think these strategies are most effective?
- Are there strategies that you pursued that were less effective? If so, why?

5. What is the effect of having a community based organization conduct outreach in your community for energy retrofits?

Probe:

- What skills and/or assets do you bring to this effort that helps engage community members?

6. What have you learned about outreach to the community that is essential for engaging residents in climate mitigation?

Probe:

- messaging
- materials
- translation and cultural connection
- coordination with other key stakeholders (e.g., auditors, contractors, utilities)

7. What barriers did you encounter in your outreach efforts?

Probe:

- finding people who fit the AMI guidelines
- getting people to go beyond expressing interest to getting an audit
- other

8. How would you describe your collaborations with the auditors?

Probe:

- Did they welcome your presence in audits?
- Was there a timely exchange of information?
- Were you able to trouble-shoot based on information you received from auditors?
- What was the outcome of this collaboration?

9. How would you describe your collaboration with the utilities?

Probe:

- Did they welcome your knowledge of the community?
- Did they understand your approach and allow you to independently pursue it?
- Did you engage in information-exchange, as needed and on a timely basis?

10. Does your organization plan to continue to do work around climate mitigation in your community?

11. If your organization aims to continue work promoting residential energy efficiency retrofits in your community, how will the work be supported? What is your organization's 'sustainability plan'?

B. Interview Protocol: People whose homes have been weatherized via CMI

1. How did you find out about the weatherization program?

Probe:

- personal contact with CBO
- found out at CBO meeting
- found out at non-CBO meeting
- flyer
- CBO came to door
- Cable TV (or other media)
- Via landlord
- Via tenant
- Other

2. Why did you decide to pursue weatherization via this CMI?

Probe:

- CBO told me that it (trust factor)
- opportunity to save money on heating bills
- wanted my home to be warmer
- other

2. When and where did you sign up for weatherization?

3. If tenant, how did you approach your landlord to have the home weatherized?

Probe:

- Did CBO contact them for you/with you?
- What was their response?
- Were you involved in the process, once a decision was made? Please describe.
- Was your landlord involved in the process, once a decision was made? Please describe.

4. If landlord, how did you work with tenants through the process of weatherization?

Probe:

- Did you involve them in the process?
- Did CBO play a role in coordinating efforts between you and your tenants?

5. Could you please describe the experience of having your home audited?

Probe:

- How long did it take?
- Do you feel the auditors were thorough?
- What role did the CBO play during the audit? (e.g., explain what's going on, translate)
- Did you feel that your questions about the process were answered sufficiently?
- Did you tend to turn to the auditors and/or to the CBO to get answers to your questions?
- Did they (e.g., auditors/CBO) communicate clearly about what kind of work needed to be done, and what to expect? (Timing, disruptions, etc.)

6. Were there any problems that needed to be addressed before weatherization could begin?

Probe:

- If so, what were they?
- Who did the work to fix these problems? (e.g., your contractor, CSG/Next Step Living)
- Who paid for this work, to get your home ready for weatherization?
- What kind of coordination was there between the auditors and contractors and YOU?
- Did the CBO play a role in this process? If so, what role do they play?

7. What had to be done to weatherize your home?

Probe?

- Where the contractors able to do all the work recommended by the auditors?
- If so, are you pleased with the results?
- If not, did they prioritize the work they would do?
- If they prioritize the work they would do, what influenced their decision about what to do first?
- Is there more work that will have to be done in your home?
- If so, are you hoping that the program will pay for this work?

8. What role did the CBO play throughout this whole process?

Probe:

- How closely did you work with them throughout the process?
- Do you think you could have gone through this process without the CBO?
- What do you think it would have been like if you hadn't worked with the CBO?

9. Are you pleased with the results of weatherization?

Probe:

- Is your home warmer?
- Are you paying less in your heating bills?

10. Will you get involved/stay involved with the CBO?

Probe:

- How did this experience affect your feelings about the CBO?
- Will you stay involved/get more involved in other activities being conducted by the CBO?

11. Have encouraged any your friends or family to explore weatherization? If not, why not? If yes, why did you encourage? How many people in all did you encourage?

12. Anything else you want to add?

C. Interview Protocol: People who did not complete weatherization

1. How did you find out about the weatherization program?

Probe:

- personal contact with CBO
- found out at CBO meeting
- found out at non-CBO meeting
- flyer
- CBO came to door
- Cable TV (or other media)
- Via landlord
- Via tenant
- Other

2. Why did you decide to pursue weatherization via this CMI?

Probe:

- CBO told me that it (trust factor)
- opportunity to save money on heating bills
- wanted my home to be warmer
- other

3. If tenant, how did you approach your landlord to have the home weatherized?

Probe:

- Did CBO contact them for you/with you?
- What was their response?
- Were you involved in the process, once a decision was made? Please describe.
- Was your landlord involved in the process, once a decision was made? Please describe.

4. If landlord, how did you work with tenants through the process of weatherization?

Probe:

- Did you involve them in the process?
- Did CBO play a role in coordinating efforts between you and your tenants?

5. Could you please describe the experience of having your home audited?

Probe:

- How long did it take?
- Do you feel the auditors were thorough?
- What role did the CBO play during the audit? (e.g., explain what's going on, translate)
- Did you feel that your questions about the process were answered sufficiently?
- Did you tend to turn to the auditors and/or to the CBO to get answers to your questions?
- Did they (e.g., auditors/CBO) communicate clearly about what kind of work needed to be done, and what to expect? (Timing, disruptions, etc.)

6. Were there any problems that needed to be addressed before weatherization could begin?

Probe:

- If so, what were they?
- Did the auditors recommend that you get this work done before getting your home weatherized?
- Did the auditors and/or CBO refer you to a contractor to do this work?
- Did you pursue getting this work done?
- If yes, did you find someone to do the work to fix these problems? (e.g., your contractor, CSG/Next Step Living)
- Who paid for this work, to get your home ready for weatherization?
- What kind of coordination was there between the auditors and contractors and YOU?
- Did the CBO play a role in this process? If so, what role do they play?

- If you didn't pursue getting this work done, what barriers did you run into? (e.g., cost, time, landlord resistance)
- Are you hoping to do this work in the future?
- What kind of coordination was there between the auditors and contractors and YOU?
- Did the CBO play a role in this process? If so, what role do they play?
- How about cost barriers? (Estimates? To what degree a problem?)

7. What had to be done to weatherize your home?

Probe?

- Are you hoping to do this work in the future?
- If so, will you pursue it through this program?

8. What role did the CBO play throughout this whole process?

Probe:

- How closely did you work with them throughout the process?
- Do you think you could have gone through this process without the CBO?
- What do you think it would have been like if you hadn't worked with the CBO?

9. Will you get involved/stay involved with the CBO?

Probe:

- How did this experience affect your feelings about the CBO?
- Will you stay involved/get more involved in other activities being conducted by the CBO?

D. Interview Protocol: Representatives of PAs

1. What do you understand to be the purpose of the pilot CMIs?

Probe:

- To what extent does the program fit into your organization's overall mission?
 - What were you hoping to achieve with the CMI
- ### **2. How would you describe relationship with the CBOs who are implementing the CMIs?**
- What worked well? Why?
 - What didn't work so well? Why?
- ### **3. Any difference between CPA v. Chelsea? If so, why this difference, from your perspective?**
- ### **4. How about your collaboration with other players: CSG, NSL.**
- ### **5. What have you learned from this experience about the role that CBOs can or should play in energy efficiency**
- reaching out to and engage new customers
 - hard to reach and serve
- ### **6. Where do you think CBOs are most effective and why?**
- ### **7. Are you satisfied with the outcomes so far?**
- ### **8. What were the principal barriers? How were they addressed? What adjustments were made (on both sides)?**
- Probe: income verification
 - pre-weatherization
- ### **9. Any ideas about how obstacles will be addressed in future?**
- ### **10. How would you describe your collaborations with the CBOs**
- Probe:
- Did they welcome your participation?
 - Do you feel that they understood your priorities?
 - Did you engage in information-exchange, as needed and on a timely basis?
- ### **11. Going forward, what role should the utilities play in supporting CBO work in this area (advisory, supervisory, monitoring?)**
- ### **12. What challenges lie ahead? How should these be addressed?**

E. Interview Protocol: Union Trainers

1. What is training design?

Probe:

- What is content?
- When, where does it happen?
- How often?

2. Who are the trainers?

Probe:

- What is their background?

3. How are you addressing language issues (e.g. training bilingual workers to be team leaders)

Probe:

- Do the trainers conduct the training in Chinese/Spanish?

4. How many trainees in all to date?

Probe:

- In pipeline?
- Graduated?

5. More or fewer than you expected? Why?

6. What's working with the training? Why?

Probe:

- format
- location
- content
- other

7. What's not working? Why?

Probe:

- format
- location
- content
- other

8. Do you recommend trainees to contractors?

Probe:

- If so, how many trainees have you recommended thus far?

9. How many of your trainees have found work?

Probe:

- In Chinatown/Chelsea?
- Outside of Chinatown/Chelsea? (Not sure they would know)

10. What kind of work did they find? (Not sure they would know)

11. How many have earned membership in the International Union of Painters and Allied Trades?

12. Is it important for more Chinese/Latino workers to get training in this way? Why? Why not?

F. Interview Protocol: Trainees

1. Who initially contacted you to participate in the training?

Probe:

- Were you involved with this organization before?
- If so, in what ways?
- If not, did you know about the organization?
- And If you knew about them, what did you think about them?

2. Why did you decide to participate in the training?

Probe:

- get “a” job (was unemployed before)
- gain new skills (to switch employment)
- earn more money

3. What did you hope to learn or gain from the training?

4. What activities did you do in your training?

Probe:

- Which activities worked well (met your needs)? Why?
- Which activities worked less well? (or didn’t meet your needs) Why?

5. What are some of the things you learned in the training?

6. Would you recommend this training to others?

Probe:

- If so, why?
- If not, why not?

7. Do you think you will be able to use what you learned to help you get a job (now, soon, in the future)?

8. Do you see any immediate opportunities for working in this area (ee retrofits?)

Probe:

- If so, please describe.

9. Have you made a connection to a contractor or get employment leads through the training?

Probe:

- If so, please describe.

10. Have you earned membership in the International Union of Painters and Allied Trades?

Clarifying question: What’s involved in earning membership?

11. Is it important for more Chinese/Latino workers to get training in this way? Why? Why not?

12. Did you participate in CPA/CC activities prior to getting trained?

Probe:

- If so, will you continue?
- If not, will you get involved?

13. Do you know CPA's mission or purpose? Do you support the work that they do? Why? Why not?

G. Interview Protocol: CMI Workers

1. How did you find this job?

Probe:

- Referral from CPA/CC, IUPAT, other?

2. What role, if any, did IUPAT training play in helping you get this job?

Probe:

- Did you have other experience or training in addition to the IUPAT training?

3. Are you satisfied with your wages in your current job?

Probe:

- If yes, why?
- If no, why not?
- How do they compare with your wages in your last job?

4. How would you describe the working conditions in your current job?

Probe:

- Are you satisfied with the working conditions?
- If yes, why?
- If no, why not?
- How would you compare them with the working conditions in your last job?

5. Are you satisfied with the work you're doing?

Probe:

- the type of work
- the amount of work (amount of jobs)

6. Do you feel that you have enough training to do the work?

Probe:

- If not, what additional training do you need?

7. What are the challenges and barriers do you face?

Probe:

- Not able to find a job after being trained
- dealing with language differences/issues on the job

8. Is it important for more Chinese/Latino workers to work in this industry?

Probe:

- If yes, why?
- If no, why not?

9. Would you recommend that a friend or family members seek work in this area?

Probe:

- Would you recommend a friend or family member get trained by IUPAT?

H. Interview Protocol: Lead Vendors (Aulson/CSG)

1. How many workers are currently employed at Aulson/CSG?

Probe:

- Of these employees, how many are Chinese/Latino?
- If no Chinese/Latino, how does this program fit with your business' hiring policies?

2. (If relevant) How many CLU/CC trainees have you hired through the CMI?

Probe:

- Are you able to provide consistent employment for these employees? (e.g., PT, FT)
- Of those you have hired, how many work assignments have they had?
- At what rate do you *usually* hire new workers?

3. Are you recommending trainees to other contractors?

4. What wages and working conditions do you offer?

Probe:

- How does this compare with some of your competitors?

5. You have committed to hire 90% of new workers from pilot project neighborhoods.

Probe:

- Are you meeting this goal?
- If yes, what has contributed to meeting this goal?
- If not, why not?
- What challenges have you encountered?

6. What are some of the obstacles to hiring more Chinese/Latino workers?

Probe:

- How can these be overcome?

7. Is it important for more Chinese/Latino workers to work in this industry?

Probe:

- If yes, why?
- What are the advantages of having more Chinese/Latino workers in the industry?
- If not, why not?

Appendix 2: Interviews conducted for CMI evaluation (in alphabetical order):

Aulson Company

Joan Ryan

Chelsea Collaborative

Roseann Bongiovanni

Jovanna Garcia-Soto

Ricardo Sanchez

Chinese Progressive Association

Lydia Low

Alice Leung

Mark Liu

May Lui

City of Chelsea Manager

Jay Ash

Community Labor United

Darlene Lombos

Keith Wrightson

Conservation Services Group

Sam Nutter

Mark Pignatelli

Insul-Pro

Victor Cimino

International Union of Painters and Allied Trades District Council 35

Eric Reading

National Grid

Monica Ibrahim

Program Administrator Evaluation Specialist

Next Step Living

Gabe Shapiro

NSTAR

Jan Goodell

Bill Stack

New England Regional Carpenter's Union

Mark Erlich

Steve Falvey

Monthly conversations with Evergreen Economics and NSTAR

Tami Rasmussen, Evergreen

Martha Thompson, Evergreen

Suzanne Farrington, NSTAR

Participant Observation at bi-weekly meetings with all key stakeholders (separate but overlapping participants for Chelsea and Chinatown CMLs, including: CC (Roseann Bongiovanni, Jovanna Garcia-Soto, Ricardo Sanchez), CSG (Ken Holby, Bill Footer, Sam Nutter, Mark Pignatelli, Lyndsey Zawercka), CPA (Alice Leung, Mark Liu, May Lui), Environment Northeast (Danah Tench), Insul-Pro (Victor Cimino) for some meetings, National Grid (Brian Carney, Monica Ibrahim, Kate Ringe), NSTAR (Jan Goodell, Tina Haggerty, Suzanne Farrington), and Next Step Living (Gabe Shapiro).

Appendix 3: Chelsea Collaborative (CC) CMI PILOT LOGIC MODEL

