Final Report for Moderate Income Sustainable Technology (MIST) Program

Prime Contractor Name: CRHMFA Homebuyers Fund

Contract Agreement Number: 400-09-016

Contract Term (reporting period): September 29, 2010 to April 30, 2012

Contractor Project Manager: Mark Lowder

Commission Agreement Manager: Adrian Ownby

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The team also recognizes and appreciates the efforts of the 44 participating contractors[1] who engaged in MIST retrofit projects for their extensive cooperation with the program guidelines, reporting and documentation requirements and for their technical skills and work implementing whole-house retrofit projects under the program. A special thank you is extended to Beutler Corporation, with whom CHF partnered to design the program.

[1] CHF participating contractors completing retrofit projects under the MIST program: A1 Guaranteed Heating & Air Inc., AAA Greener Solutions, ABC Cooling & Heating, Advanced Comfort & Energy Systems (a Division of Beutler Corp), Advanced Home Energy, Inc., All Year, Inc., AllTerra Environmental, Inc., Apperson Energy Management, ASI Hastings, Bonney Plumbing Heat & Air, Brower Mechanical, Inc., California Energy Services, Clarke & Rush, Comfort City, Inc., Danielsen Construction & Energy Management, Eco Performance Builders, Inc., Ecologic Builders, Inc., Fontenot Builders, Gabriel Alley, Gilmore Services, Inc., Green Construction Services, Green Home Solutions by Grupe, Heller Construction, Henry Bush Home Energy Solutions, Jeff Bender Construction, Inc., JLS Environmental Services, Inc., Kozy Homes, Mason Construction Building, McDonald Plumbing, Heating & Air, Inc., Sacramento Building Performance, Sierra Pacific Home & Comfort, Inc., Smart Builders, So Cal Remodeling Products, Solar United Network (DBA Sunworks), SolarCity, Solare Energy, Inc., Straight Line Roofing & Construction, Synergy Companies, Terra Aqua Builders, Inc. (DBA Energy Resolutions, Inc.), The Building Doctors, The Finish Crew (DBA Energy Docs), Van Meter Construction, WellHome and Zero Energy.

Acronyms

Acronym	Definition
ACH	Automatic Clearing House
AMI	Area Median Income
ARRA	American Recovery and Reinvestment Act
BPI	Building Performance Institute
BTU	British Thermal Unit
CalCERTS	California Certified Energy Rating & Testing Services
CBPCA	California Building Performance Contractor's Association
CCSE	California Center for Sustainable Energy
CEC	California Energy Commission
CHF	California Rural Home Mortgage Finance Authority Homebuyers Fund
CHO	County Housing Office
CPUC	California Public Utilities Commission
CWIB	California Workforce Investment Board
DOE	Department of Energy
EEM	Energy Efficient Mortgage
EUC	Energy Upgrade California
FHA	Federal Housing Administration
HERS	Home Energy Rating System
HUD	US Department of Housing and Urban Development
HVAC	Heating Ventilation and Air Conditioning
IOU	Investor Owned Utility
JPA	Joint Powers Authority
M&V	Measurement and Verification
MED	Marketing and Education Director
MIRACL	Moderate Income Retrofit and Conservation Loan
MIST	Modern Income Sustainable Technology
MU	MIST Underwriter
NSF	Non-Sufficient Funds
OMB	Office of Management and Budget
PA	Program Administrator
PAC	Project Advisory Committee
PG&E	Pacific Gas & Electric
PV	Photovoltaic
QA	Quality Assurance
RCEA	Redwood Coast Energy Authority
SCE	Southern California Edison
SHPO	State Historic Preservation Office

Acronym	Definition
SMUD	Sacramento Municipal Utility District
SoCalGas	Southern California Gas Company
WDD	Workforce Development Director
WIB	Workforce Investment Board

Executive Summary

Background

The MIST program, sponsored by CHF, was designed to create jobs and stimulate the California economy through a comprehensive program to implement whole-house energy efficiency retrofits in low-to-moderate income single family homes. CHF is a California Joint Powers Authority (JPA), currently representing 31 California rural counties[2], referred to as CHF member counties, as well as 23 associate member counties and cities[3]. The MIST program contract was awarded to CHF at the CEC's May 5, 2010 Business Meeting. The contract received final approval from the Department of General Services on September 30, 2010. The MIST program contract created a revolving loan fund that has provided, and will continue to provide, capital for energy efficiency and renewable generation retrofits of low-to-moderate income single family homes throughout many of CHF's 31 member and 23 associate member jurisdictions.

Final Report

This final report covers the design, operation and analysis of the MIST program through the initial contract term. Data collection began September 29, 2010 and will continue for single family retrofit projects financed through the revolving loan fund through June 30, 2012. This report contains the following data:

- The number and volume of loans provided to retrofit homes;
- The number and volume of grants provided to retrofit homes;
- The impact on job creation/preservation resulting from the retrofit projects;
- The extent to which the program reached low-to-moderate income families and individuals in California;
- The extent to which retrofit projects reduced energy usage in California; and
- The amount of energy savings per dollar spent from the American Reinvestment and Recovery Act (ARRA).

This report's qualitative review and analysis will include the program's success in reaching its goals to increase energy efficiency, create jobs and transform the home energy retrofit financing market through comprehensive whole house energy retrofits. This report will review the lessons learned from program's success in developing program awareness, demand for the program and the successful means employed to reach and exceed the program's goals.

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[2] CHF member counties include: Alpine, Amador, Butte, Calaveras, Colusa, Del Norte, El Dorado, Glenn, Imperial, Inyo, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Mono, Napa, Nevada, Placer, Plumas, San Benito, Shasta, Sierra, Siskiyou, Sutter, Tehama, Trinity, Tuolumne, Yolo and Yuba.

[3] CHF associate member jurisdictions include: The counties of Alameda, Contra Costa, Fresno, Humboldt, Kern, Kings, Mendocino, Monterey, Riverside, Sacramento, San Bernardino, San Diego, San Joaquin, San Luis Obispo, San Mateo, Santa Cruz, Solano, Sonoma, Stanislaus, Tulare and Ventura, the City of Palmdale in Los Angeles County and the City of San Jose in Santa Clara County.

MIST's approach to Market Transformation

Historically, California's energy reduction programmatic efforts have been insufficient to reach California's existing home energy reduction goals. Discussions between CHF staff and contractors and others in the industry indicate that a typical homeowner likely considers energy savings implementation to his or her residence on a piecemeal basis: double−pane windows when advertised by a window vendor, new Heating Ventilation and Air Conditioning (HVAC) when a system breaks down, etc. Public awareness of a "whole house" approach to energy efficiency has also been very limited. This is also true of the public's understanding of the scientific accuracy of home energy modeling and prediction of savings and the ability of professional energy contractors to determine, verify, and match energy cost savings to financing possibilities.

MIST worked to overcome these awareness barriers through a comprehensive marketing and outreach program using both its own resources and those of participating contractors. The MIST financing program contained specific requirements that must be met in order to be eligible for its financing. MIST required comprehensive measurement of houses, looking at a home as "a system" and relying on diagnostic tools and evaluation methods to consider the interactive nature of the energy features in a home. This approach allowed recommended solutions that addressed not only energy savings, but also overall comfort, indoor air quality, combustion safety, and even noise reduction. The program also required that all retrofit projects provide a net cash-flow neutral or positive result, further reinforcing the value of proper measurement.

The program also required participating contractors to employ a BPI-certified analyst that has experience and access to the CEC-approved whole-house performance modeling and analysis software. This provides a level of expertise that promotes a broad focus on energy efficiency rather than a limited focus on selling a particular line or product only, such as HVAC units or windows. Lastly, MIST established a permanent record identifying the California Home Energy Rating System (HERS) rating and index score reflecting the improved energy rating of the property after retrofit, hopefully making a significant difference for that property in the real estate market.

The final barrier tackled by the MIST program was the financial barrier faced by the low-to-moderate income homeowner segment. Much of California, especially rural counties, suffers from a shortage of effective programs to address financing needs of low-to-moderate income citizens in relation to energy retrofits. Conventional financing does not focus on the energy cost savings, is typically only available at time of the purchase of the property and could be subject to sales comparison appraisals in a market that has receded in value immensely over the last few years. Energy efficiency lending has also been limited and/or inadequate, often challenged by lengthy loan terms resulting in significantly higher interest charges and limited coverage of measures. MIST provided grants as well as significantly below-market fixed interest rate loans large enough to produce comprehensive energy efficiency retrofits, yet with a

monthly payment burden that matched the particular needs of debt-adverse, low-to-moderate income homeowners.

The program approach was consistent with program objectives and the underlying market barriers. Program elements fell into the following categories:

- Innovative financing and grants;
- Energy efficiency workforce development;
- Advanced outreach and marketing programs; and
- Efficient implementation and delivery.

CHF was the prime contractor and program administrator, accountable for the overall program success and all reporting functions to the CEC and DOE. The program utilized no sub−contractors.

CHF appointed key roles within the organization to handle management of the program including but not limited to the following assignments:

- **Program administrator** (PA) – ultimately responsible for ensuring all program records were maintained, tracking the success metrics of the program, total energy efficiency contracting under the program and also market transformation metrics established.
- **Workforce development director** (WDD) – responsible for coordinating efforts with contractors, CWIB, local workforce investment boards (WIBs) and other related services to encourage employment and training of local tradespeople or as HERS raters.
- **Marketing and education director** (MED) – responsible for coordinating marketing, developing marketing materials and training curriculum, and work with program partners to encourage promotion of MIST in conjunction with outreach activities.
- **MIST underwriter** (MU) – responsible for accepting or rejecting MIST loan and grant applications based on energy modeling, historical costs, and personal income levels and property information. The MU also reviewed the project costs in relations to the estimated energy savings calculations to determine whether proposed projects met the required net cash-flow neutral or positive requirement for financial feasibility and communicated these decisions directly with contractors.

The implementation of energy efficiency home audits and retrofit installation work was delivered through a network of qualified local contractors certified by BPI, established across CHF member and associate member jurisdictions. All of the retrofit projects were verified by an HERS or HERS II rater upon completion, all of whom met the CEC requirements for independence at the time of project verification.

Goals

Goals

The goals of MIST as cited in CHF's contract with the CEC were:

a) To create a sustainable, self-replenishing source of loans and grants for comprehensive, Third Tier energy efficiency retrofits available for rural California homeowners in low-to-moderate income segments, and;
b) To create jobs and enhance the economy in the member counties of CHF, most of which have relatively high rates of unemployment.

(a) **A Sustainable, Self-replenishing Source of Loans and Grants**

The MIST program was successful in using its resources to provide loans for comprehensive energy retrofits. Whether this program can become a permanently sustained, self-replenishing source of loans and grants after the end of this contract is the current focus of efforts by CHF staff. The MIST program did achieve, however, significant energy savings with its initial loans.

Initial energy savings were projected as follows:

- Energy savings of 88 million British Thermal Units (BTUs) per project;
- Energy savings of 13,000 BTUs per ARRA dollar spent; and
- Program total energy savings of 217 billion BTUs.

Actual energy savings estimates (based on actual retrofits accomplished) are as follows[4]:

- Energy savings of 96.8 million BTUs per project (110% of goal);
- Energy savings of 18,851 BTUs per ARRA dollar spent (145% of goal)[5]; and
- Program total energy savings of 101.8 billion BTUs.

(b) **Job Creation and Enhancement of the Economy**

Using the Federal Department of Energy's methodology for calculating job creation, in which one job is created for every $92,000 invested in the program, the MIST program created almost 300 jobs. CHF staff estimate that the MIST program created and/or retained 329 jobs through March 2012[6] in local construction, energy efficiency measure installation

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[4] These figures are current as of June 5, 2012, and based on 1042 projects that have been completed and reported by contractors on the ECON2 report generated from EnergyPro. These results were used as the basis for projecting total BTUs saved for all projects in the entire program.

[5] BTUs per ARRA dollar spent are calculated based on total program costs, which includes all CHF grants, CHF administration cost, and projected loan loss (during the first year) of 10%. This does not include principal, interest and prepayments received by CHF on existing loans which will recycle back into a revolving loan fund or loan loss reserve for future allocations.

[6] Information on jobs retained and/or created was obtained by CHF staff from participating contractors on a quarterly basis via questionnaires distributed to all participating contractors. CHF staff did not verify this information, nor did all participating contractors respond to CHF requests for job creation information. This information is current as of March 31, 2012.

and verification trades during the contract term. This figure does not equal the initial estimate of 382 newly created or retained jobs resulting from the MIST program and the expansion of existing energy efficient mortgage loan programs. However, it is important to note that the initial job creation estimate relied heavily on leveraged funding through private sector uptake in energy efficient mortgage loan activity that did not materialize. Also, job creation information from contractors for the first quarter of 2012 is not yet available. Moreover, some participating contractors did not always respond to requests for this information.

Nevertheless, energy efficiency retrofits implemented through MIST have generated jobs and stimulated the economy in 33 CHF jurisdictions in California, 16 of which are CHF member counties, most of which have reported relatively high rates of unemployment in the last few years. By reducing the amount of energy families consume, the MIST-funded energy retrofits helped reduce the scope of families' exposure to rising energy prices, providing an important hedge against future economic distress. The overall market transformation influenced by MIST has increased the demand for trained home performance contractors and HERS raters.

Objectives

To achieve these goals, MIST identified four core objectives that address the major barriers to market transformation and guide program design. Program objectives included:

(1) Installing comprehensive Third Tier energy efficiency measures in existing moderate income housing stock, approximately 2,463 units during the contract term;
(2) Significantly increasing the awareness and use of the US Department of Housing and Urban Development (HUD) Rehabilitation Program (203(k) program) and to provide a new funding mechanism for comprehensive energy efficiency retrofits for moderate income homeowners;
(3) Increasing the human knowledge infrastructure necessary for more energy efficiency loans, including HUD's Energy Efficient Mortgage (EEM) program, technical training, energy mortgage origination training, and general program awareness; and
(4) Demonstrating the viability of comprehensive residential energy efficiency retrofits at the time of property sale.

Energy efficiency installations (Objective 1)

MIST funded 1,051 energy efficiency retrofits during the contract term using over $23 million in financed loans. Projects were completed in over half of the CHF member counties (16 of 31 CHF member counties) and in most of CHF associate member jurisdictions (17 of 23 CHF associate member jurisdictions).

The number of retrofits completed was approximately 42% of the projected estimate of 2,463 retrofits. Several factors influenced this outcome. The average retrofit project was nearly double the size of what was anticipated, averaging approximately $22,600 instead of the

initially estimated $12,500 per project. The larger average loan size was in part because CHF, with approval from the CEC, expanded the allowable measures to include cool roofs, photovoltaic (PV) installations, windows and doors, which traditionally are costly measures. Additionally, the projected 2,463 retrofits included retrofits to be performed with energy efficiency mortgages which, as discussed below, did not occur due to real estate market conditions.

The program benefitted from the increased financial support from the CEC. The final ARRA investment to MIST at the end of the contact period was $27.5 million, $11 million above the initial contract award, allowing MIST to greatly extend its overall capacity.

HUD 203(k) program and EEMs (Objectives 2 & 3)

Due to the condition of the real estate market in CHF jurisdictions during the contract period, CHF staff, with approval from the CEC, determined that it was neither feasible nor the best use of resources to prioritize objectives (2) and (3) over objectives (1) and (4). While the initial contract specified the Federal Housing Administration (FHA) 203(k) loan program, CHF sought and received clarification from the CEC that expansively defined the contract reference to FHA 203(k) program to include any federal, state or local government sponsored energy efficient mortgage program.

During the contract period, the California housing market, including the housing markets in CHF jurisdictions, continued to suffer from a previous deep decline in home values, along with the slowing of home purchases. With the decline in home purchases, there was a limited market from which to draw interest in energy efficiency home improvements as part of a home purchase transaction, or as a financial investment towards future real estate values.

CHF staff did however meet on numerous occasions with realtors, financial institutions and other parties that might have clients interested in using MIST funds in conjunction with the HUD 203(k) program and other energy efficiency loans and mortgages. On each occasion CHF staff invited these parties to bring any potential interest forward, and CHF staff would provide the support and direction necessary to facilitate the use of MIST loans and grants with energy efficient mortgages. Despite these numerous contacts and meetings, no such interest ever materialized. As a result, and with the knowledge and support of CEC staff, an amendment to the contract reallocated funds budgeted for these objectives to MIRACL loan and grant funding for retrofits on existing properties.

Viability of retrofits at time of sale (Objective 4)

As originally proposed and envisioned, CHF would place a filing on title for all of MIST loan holders. That filing would include:

1. A post-retrofit HERS California Home Energy Rating Certificate and a Standard and/or Custom Approach Recommended Improvements report including designation of the implemented improvements;

2. Individual HERS Rater identification number for their house, uniquely identifying the energy profile of the house in the existing statewide database;
3. A promise to authorize the release of the immediately previous one-year's-worth of gas and electrical utility usage information:
    - upon acceptance of any bona fide offer to purchase the property or at the same time other statutorily-required disclosures are made; or
    - upon transfer by any means, voluntary or otherwise, to the immediate subsequent owner of the property; and
4. Appropriate language establishing the servitude for the benefit of CHF or its assignee, and requiring that the statement of certification and HERS Rater Identification Number be contained in all subsequent deeds.

Subsequent discussions with legal consultants and title company representatives revealed that such filing item #4 (above) would be legally problematic, and likely would not be successfully implemented statewide. Also, due to the real estate market conditions during the contract period, no guarantee could be provided that the energy efficiency improvements to a home would necessarily increase its value at time of sale.

CHF still felt there was historical evidence to support "perceived value" on behalf of a buyer, and the CEC felt that this remained a key objective of the program. CHF therefore developed a database to maintain records showing the improved home performance rating after the retrofit improvements were installed. This information is available to the public, free of charge, via the CHF website www.chfloan.org, and discussed in further detail under the "Accomplishments" section of this report. CHF is one of the first organizations to post energy efficiency retrofit data on specific properties for public access.

Accomplishments

In order to accomplish program objectives and reach program goals, the MIST program had to address the financial concerns of low-to-moderate income households (defined as homeowners earning from 60% to 160% of Area Median Income (AMI)). Many of these eligible homeowners are caught between forces: they make too much money to qualify for fully funded federal programs like Low−Income Home Energy Assistance Program or Weatherization Assistance Program, but they do not make enough to pay for energy efficiency upgrades outright and often have limited financing options.

In order to reach what the US Environmental Protection Agency has recognized as a critical breaking point in program success, the project needed to include both a zero up-front cost requirement and be cash flow neutral or positive to be attractive to the majority of homeowners. MIST therefore made available low interest rate financing combined with grants of up to $1,950 per home, in addition to rebates and incentives available through investor-owned and municipal-owned utilities. The MIST program also implemented a cost effectiveness test that was transparent and could be readily understood by homeowners.

During the contract term, MIST allocated the following ARRA funding to key elements:

- Over $24.34 million in resources for originating low interest rate loans for energy efficiency measures, not subject to FHA or conventional loan restrictions;
- Over $756 thousand in resources for grants for performance audits, performed by both building performance contractors and certified HERS Raters, of single-family homes of low-to-moderate income constituents. Initial or “test-in” audits could be performed by either a BPI contractor or certified HERS Rater. All post-retrofit audits were completed by a HERS II Rater;
- Over $1.36 million in resources for direct grants to buy down a portion of the cost of energy efficiency measures; and
- Over $1.03 million in resources for program administration, and program marketing to key participants, such as contractors, HERS raters, real estate agents, mortgage originators and potential retrofit applicants.

MIRACL Loan Financing

Moderate Income Retrofit and Conservation Loan (MIRACL) financing, provided by the MIST program, was in the form of a fixed-rate loan, fully amortized over a 15-year term. The interest rate was set by CHF at a very competitive fixed rate of three percent (3%).

The low interest rate of MIRACL financing allowed program recipients to stretch their energy efficiency spending much farther than they would have with a higher interest rate loan. A 3% loan amortized over 15 years, for example, costs 18% less per month than a 6% interest rate loan; 26% less than a 7.5% interest rate loan. On a typical comprehensive energy efficiency transformation, that translates into hundreds of dollars per year.

To spark interest in the program while facilitating participation in the program in rural areas by lower-income populations in the most economically disadvantaged areas, CHF lowered the interest rate for MIRACL financing to zero percent (0%) in CHF member counties at the program onset (although this was not offered in associate member jurisdictions). This decision was setup as an introductory offer to stimulate program penetration in those areas. Initially, once 25 retrofit projects were initiated with MIST in a specific county, CHF ended the introductory rate offer, moving the effective interest rate for that county to 3%. Only two CHF member counties had the introductory rate discontinued. All other CHF member counties remained at the introductory rate of 0% financing throughout the entire contract term.

CHF designed the underwriting standards of MIRACL financing with increased accessibility as the focus. Mortgage loan underwriting looks to several primary factors: credit, including payment history, job security, loan-to-value ratios on the existing property, and debt-to-income ratios, or the applicant's ability to pay. MIRACL financing however, is not a mortgage loan and does not have an effect on existing mortgage loans, avoiding concerns from the mortgage or banking industry. In addition, an applicant's credit score was not an eligibility determination factor for MIRACL funding.

Energy efficient mortgages also have funding caps, based on a house's current value. This can often exclude moderate income rural county housing from meaningful retrofits. MIST targeted retrofit projects averaging $12,500 worth of work, and MIRACL financing did not have a cap on how much could be funded. Therefore a family with a rural house valued at $80,000 was not excluded from assistance from MIRACL financing, based on the home appraisal or the amount of MIRACL financing they were seeking. Deep energy retrofits, often difficult to achieve under existing federal loan programs, were made possible with MIRACL financing.

MIRACL loan underwriting also focused more on the borrower's associated payment and expected energy savings and less on the perceived security in the turbulent real estate market. MIRACL financing was not tied to a pure real estate-based valuation of the energy efficient improvements like mortgage loans or energy efficiency mortgages. In a depressed real estate market, such as California has experienced for the past few years, it is not readily apparent that $12,500 worth of energy efficiency work on a home will provide $12,500 in value in the opinion of a real estate appraiser. Approval for MIRACL financing was dependent upon estimated energy savings from the proposed measures, not upon a residential appraisal.

Energy efficiency measures at the Tier III level[7] qualified for MIRACL financing under MIST only if the estimated monthly energy savings in dollar amounts were equal to, or exceeded, the net monthly cost to fund the improvements. An example of a "net cash-flow neutral or positive" project that would be eligible for MIRACL financing would be a retrofit project that results in

[7] Request for Proposals - California Comprehensive Residential Retrofit Program, California Energy Commission RFP #400-09-403 October 2009, Table I, Page 19.

$60 in energy cost savings per month, where the net cost to finance the project is $45 per month. It is important to note that a standard cost for replaced equipment, notably HVAC units, water heaters, and other similar equipment, was subtracted from the cost of each job performed. Only the incremental cost of current energy efficient equipment to replace old equipment was included in the calculation. This change, which was approved by the CEC prior to implementation by CHF staff, permitted the calculation to consider only the cost upgrading the efficiency of equipment that the homeowner would replace during the retrofit.

Underwriting guidelines and qualifications were as follows:

- All person(s) listed on the property title must apply for MIRACL financing;
- The borrower's(s') qualifying income must not exceed 160%;
- The subject property must be located in an eligible jurisdiction;
- The borrower(s) must be current on any existing mortgage;
- The borrower(s) must be current on property taxes;
- The borrower(s) must have a current source of income which can be demonstrated by either two month's pay stubs or other method approved by CHF;
- The borrower(s) must provide proof of any liens against the property;
- The borrower(s) must provide copies of any Deed of Trust recorded against the subject property;
- The project must either receive approval, or be exempt from approval, from the State Historic Preservation Office (SHPO);
- The project must meet a minimum of 10% energy efficiency improvement if it includes solar work; and
- The project must result in a "net cash-flow neutral or positive" result, according to program guidelines.

Flexibility of the MIRACL qualifications:

- No minimum or maximum on how much can be funded with MIRACL financing;
- No appraisal on the home required;
- No minimum credit score requirement on the borrower(s); and
- No debt-to-income ratio requirement.

MIST Grants

In addition to MIRACL financing, the program allocated over $2 million for grants to homeowners with eligible retrofits. The first grant (referred to as the CHF grant) subsidized up to the lesser of 15% of the cost of the retrofit project or $1,250 per home. An additional grant, up to $700 per retrofit project, was allocated to cover the cost of the initial ($400) and final ($300) energy audits required by the program, eliminating this expense to the homeowner.

No additional underwriting or qualification guidelines were required to be eligible for the above grants. If a retrofit project and borrower(s) met the eligibility and underwriting guidelines for MIRACL financing, the grants were also awarded in conjunction with the project.

Leveraged Resources

The program effectively leveraged pre-existing communication channels through other entities such as contractors and associated specialty subcontractors, County Housing Offices (CHOs), SMUD, PG&E and other utility providers and various trade organizations and collaborative groups, decreasing marketing and promotion costs while increasing the impact of marketing efforts. In so doing, CHF expended less than $200,000 total, for advertising and promotion expenses, thus providing more available funding for MIRACL financing and grants.

Leveraged training and education to increase capacity for energy efficiency retrofits

CHF leveraged relationships with trade organizations, such as CBPCA, BPI, CWIB, local WIBs, Green Collar Job Council and collaborative groups CCSE, RCEA and EUC, for workforce development and building performance contractor recruitment. This collaboration eliminated most expenses related to facility rental and advertising of trainings, while providing a direct avenue to acquire qualified contractors and HERS raters. In all instances, CHF developed print and email promotional materials and the trade organizations and collaborative groups distributed the information and promoted the events through their networks, at no cost to CHF.

CHOs provided sites for six regional trainings at no cost to CHF. (RCEA was also pivotal in the provision of the Humboldt training site.) SoCalGas, SCE and EUC invited CHF to speak to an audience of 150 contractors in Southern California in April 2011, which resulted in a follow-up contractor training webinar in August 2011, with 13 contractors represented. In August 2011, CCSE included CHF as a presenter at a contractor workshop on clean energy financing and provided CHF with a facility, at no charge to CHF, for the San Diego regional training in November 2011, with 16 contractors represented.

Leveraged marketing to increase homeowner participant recruitment

CHF also leveraged pre-existing relationships with CHOs and collaborative groups to advertise the program to potential applicants. Key county officers and/or CHO personnel in two to four counties were visited directly by CHF staff each month in 2011, to introduce the program and discuss existing communication avenues. CHOs were supplied with print literature to distribute in county resource centers and program content for inclusion in newsletters, press releases and county websites. Over the contract period, CHF tracked the publication of program information on 14 county websites.

CHF's main goals in leveraging the relationships with IOUs and municipal utility companies were to coordinate advertising and promotion efforts, ensure that customer service departments understand MIST, and establish a process for referring interested parties to CHF participating contractors for program applications. To this end, CHF held several meetings with PG&E, the

largest utility provider in the CHF member counties, to collaborate on advertising to PG&E customers. Program information was provided to PG&E management for distribution to field offices. However, CHF was unable to coordinate any direct advertising to customers as was the goal. PG&E does not allow companies, even non-profit or governmental entities, to promote products or services in mailers, as bill stuffers, or as messages on billing statements.

SMUD, the primary utility provider for Sacramento County, distributed information about the program, and many SMUD users were able to use the program in conjunction with the SMUD rebate program, which was funded by a separate grant from the CEC. In November 2011, as MIST funds began to diminish, SMUD and CHF representatives met to discuss redirecting $2 million in SMUD CEC-awarded ARRA funds to the MIST program, creating an even more attractive package to homeowners. On December 12, 2011, with approval from the CEC, SMUD and CHF signed a Memorandum of Understanding that stated that funds from SMUD would be redirected, via CEC, to MIST under the conditions that the redirected funds would be used in SMUD jurisdiction only and CHF would track and report to SMUD on subsequent MIRACL-financed projects.

This joint endeavor with SMUD was very successful. By the end of the contract period, CHF utilized all $2 million in SMUD redirected funds in SMUD's jurisdiction. Almost 400 MIRACL-financed retrofits were completed in Sacramento County alone. However, there were challenges encountered along the way, particularly with the reporting of energy on retrofit projects. Since energy savings could not be solely attributable to either program, CHF and SMUD agreed that all energy savings up to 20% would be attributed to the SMUD rebate program, while the remaining energy savings would be credited to the MIST program.

Participating contractors were the most impactful of the leveraged relationships, in terms of homeowner participant recruitment, as contractors are in contact with hundreds of homeowners through their normal channels of business. MIRACL financing made it easier for contractors to encourage deep retrofits. In a cost-sharing endeavor, the MED provided time and resources for graphic design of promotional materials such as flyers, brochures, and door hangers, while contractors paid for printing and distribution. Two participating contractors, Beutler Corporation and Brower Mechanical purchased paid television advertising spots on NEWS 10, reaching broad audiences across several CHF member and associate member counties. The MED was invited to participate as a guest in 11 live segments, at no cost to CHF, lending credibility and exposure to the program. Both contractors stated that these advertising spots, held between January and September 2011, generated large amounts of interest, flooding phone lines and subsequently increasing customer appointments for home assessments.

Program Administration

During the first quarter of the contract period, the PA and MU finalized underwriting and qualifications guidelines for the MIST program. With assistance from legal counsel and feedback

and assistance from program partner, Beutler Corporation, CHF developed all documentation necessary to administer the program, including but not limited to the following:

1. Procedure manual for contractors;
2. Contractor participation agreement, ;
3. Program term sheet and program summary outlining the guidelines of the program.

CHF staff also produced all necessary forms, addendums and checklists to implement the process flow from the time of loan and grant application through the funding stage of a retrofit project.

In order to keep the associated escrow and title fees for MIST transactions to a minimum, CHF established a relationship with Placer Title (and later North American Title) at the onset of the program. By setting up a "preferred" title company, and establishing a set process flow for title and escrow services, CHF was able to negotiate lower fees and ensure that services were as efficient as possible. Fees included a CHF loan processing fee ($250), escrow fee ($25), title policy fee ($110) and recording and wire fee ($90), all of which could be financed with the MIRACL loan. Use of the "preferred" title company was not required, although borrower(s) were advised that by not using the "preferred" title company, CHF could not guarantee how much the fees would be, and borrower(s) would be responsible for any additional costs.

CHF began accepting loan and grant applications in late November 2010, two months into the contract period. The first few months were considered the "pilot phase", during which time CHF received four applications, allowing time to fine-tune the process with feedback from Beutler Corporation, the pilot contractor. In March 2011, the program was opened up to additional contractors meeting the participation guidelines. A custom database to collect energy records and data on retrofit projects was also developed, tested and put into production in March 2011.

Project Advisory Committee

CHF created a Project Advisory Committee (PAC) to gather feedback and suggestions for improvement throughout the contract term. The committee was made up of individuals with experience and expertise in various occupational fields relative to the audience MIST serves. These members included PG&E, BPI, California Certified Energy Rating & Testing Services (CalCERTS), CWIB and Beutler Corporation.

PAC members provided advice, assistance, support, and advocacy on the technical aspects of MIST, including but not limited to: design, development, and implementation, evaluation, and participation guidelines. An advisory committee member's role was not to "rubber stamp" what already existed, but to offer suggestions for improvements that would help the program grow and expand.

PAC meetings were held on December 16, 2010 and September 15, 2011. A third PAC meeting has not yet been scheduled. Program accomplishments, challenges, and concerns were

discussed, and feedback gathered at PAC meetings was utilized to enhance or modify the program as needed.

Workforce Development and Building Performance Contractor Recruitment

The success of MIST depended on the participation of contractors in order to achieve energy savings, job creation/preservation and economic recovery. Thus, workforce development was a main focus of the WDD and MED throughout the entire contract period.

Primary Program Guidelines/Expectations

Once underwriting guidelines and program participation guidelines were established in late 2010, CHF published a program participation package for contractors interested in participating in MIST. Any contractor that met the program participation requirements was allowed to participate in the program and offer MIST financing to homeowners. At program close, 62 contractors were qualified to participate in the program, and 44 contractors were actively completing energy efficiency retrofit projects under MIST.

The Program Participation Package contained the following items:

- Program Participation Application and Checklist;
- Contractor Participation Agreement;
- Waste Management Plan (template)
- Waste Management Plan Certification Form and Compliance Form
- Contractor Procedures Manual;
- List of Eligible Counties and Income Limits
- Addendum to Home Improvement Contract; and
- Notice of Loan and Grant Approval.

The Contractor Procedures Manual contained all guidelines for the program, including:

- Participation guidelines (both applicant and contractor);
- Qualifying energy efficiency measures;
- Financial assistance (terms and conditions);
- Process flow; and
- Marketing guidelines.

A process flow was established during the initial program setup, which outlined the steps for the four phases of a MIST retrofit project:

(1) Loan and grant application;
(2) Loan and grant approval;
(3) Project installation; and
(4) Project completion and funding.

Copies of all applicable checklists, forms, addendums and guidelines are found in the Addendum, and were published and maintained current in a contractor guide on the CHF

website www.chfloan.org.

Regional Utility Account Representative Meetings

CHF participated in several meetings with utility account representatives, and other energy providers and collaborative groups, in an effort to coordinate processes and promotion of MIST and other rebate programs. Meetings were held with the following groups:

- 2011 Utility Energy Forum, March 2011
- Yolo Energy Watch and Environmental Stewardship and Sustainability Group, April 2011,
- SMUD representatives and field offices, January 2011 – March 2012
- PG&E representatives and field offices, January – September 2011

Contractor/HERS Rater Training

CHF held 15 contractor/HERS rater trainings over the contract period. Eight of these were regional trainings, held in-person at a physical site, twice the initial program goal. Seven additional trainings were held online via a webinar teleconferencing service. A total of 216 people participated in trainings from March to November 2011. Training curriculum covered the following topics:

- Program guidelines (including MIRACL loan and grant underwriting guidelines);
- Instruction on program forms, loan documents, checklists and use of the financial analysis worksheet;
- Contractor participation documents and mandatory communication requirements with CWIB and local WIBs; and
- The CHF contractor guide available online at www.chfloan.org.

Regional training events were publicized within the county where the training was hosted as well as the surrounding counties within a 200 mile radius. BPI, CalCERTS, CWIB, local WIBs, CCSE and RCEA were essential in providing free facilities and promotion of the events. Once approved as a participating contractor, CHF also offered additional procedural training in a web conferencing format, on an as needed basis.

Regional contractor/HERS rater trainings were held as follows:

- 3/2/11 – Hosted in Sacramento County – 4 Contractor Companies represented
- 3/28/11 – Hosted in Merced County – 4 Contractor Companies represented
- 3/30/11 – Hosted in Nevada County – 7 Contractor Companies represented
- 4/4/11 – Hosted in Shasta County – 8 Contractor Companies represented
- 4/6/11 – Hosted in Amador County – 11 Contractor Companies represented
- 6/13/11 – Hosted in Humboldt County – 23 Contractor Companies represented
- 6/14/11 – Hosted in Del Norte County – 6 Contractor Companies represented
- 11/3/11 – Hosted in San Diego County – 16 Contractor Companies represented

Regional Training for Real Estate Professionals

Since CHF did not engage in any 203(k) financing or EEM transactions (as originally intended), training specifically for real estate professionals, with corresponding continuing education accreditation was not provided during the contract term. Instead, general program information was provided in an online program overview workshop. These are further discussed in the next section, Participation Recruitment. CHF held 16 online presentations, from March to October 2011 which were open to the public, including real estate and mortgage professionals, with a total of 202 individuals attending.

Data Collection from CWIB and Local WIBs

The WDD coordinated workforce development efforts with CWIB and Local WIBs where possible. CWIB and Local WIBs provided information about MIST at local offices and distributed announcements about upcoming building performance contractor/HERS rater trainings.

The WDD in cooperation with CEC developed a quarterly report template for CHF participating contractors to provide feedback to CHF and Local WIBs about job creation, preservation and promotion activities. Quarterly reports included contacts made, new hires made, and obstacles faced in using WIBs for new hires. Data from participating contractors was requested quarterly and data received was consolidated into one report, and provided to both CWIB and CEC as required under the contract.

Homeowner Participant Recruitment

Under oversight of the MED, the program coordinated efforts with various entities to promote and encourage homeowner participation, including but not limited to: CHOs, participating contractors, HERS raters, CHF's network of mortgage lenders, real estate professionals, local and municipal utility centers and EUC. The program was very successful in these efforts, and marketing expenses were therefore minimal.

Program Branding

For more than 18 years, CHF has offered eligible homebuyers mortgage loan programs featuring low interest rates and downpayment and/or closing cost assistance in a variety of forms. To most effectively leverage this existing brand recognition, and avoid confusion, MIST was marketed with the CHF name and logo (as CHF Residential Energy Retrofit Program), not the acronym "MIST" used in the CEC contract.

Throughout the contract period, CHF integrated marketing efforts with the statewide collaborative EUC, to maximize exposure and convey a clear, consistent and compelling message to homeowners. All CHF-developed MIST collateral material followed the EUC brand guidelines for logos, word mark relationships, colors, fonts, and graphic elements. CHF also provided information specific to MIST, such as program underwriting guidelines and lists of participating contractors to EUC for inclusion in the EUC website under the local financing section for all eligible counties.

Marketing and Outreach to Potential Participants

In September 2010, a customer call center was established at the CHF administration office in Sacramento to handle incoming calls and emails from homeowner participants, building performance contractors and other business partners. Call volume averaged 80 calls per month, 58.6% of which were from homeowners, 14.8% from contractors, and the remaining 26.6% from other sources, such as media, utility providers and energy efficiency related organizations.

In October 2010, CHF developed general marketing collateral for use in introducing the program to key participants, which included program letterhead, a fact sheet, a tri-fold brochure, two flyers, and press release and email news bulletin templates. Additional flyers, and collateral materials such as a door hanger, postcard, and poster, were developed in first and second quarter 2011, upon request and feedback from participating contractors. All marketing collateral continued to be updated throughout the contract period. Collateral was made available in Spanish in September 2011.

In November and December 2010, CHF expanded the existing CHF website www.chfloan.org to include information specific to the MIST program. A homeowner guide was developed to educate potential applicants about the program features and guidelines. A list of participating contractors organized by county was also made available for download from the online homeowner guide. CHF also setup a contractor guide page on the website, which contained the contractor's procedure manual and all associated/referenced forms and addendums, as well as contractor participation documents.

In November 2010, CHF developed an e-mail subscription service for the MIST program and publicized it on the CHF website and at contractor training classes and at other marketing events. The first e-mail news bulletin was published in December 2010. News bulletins were published throughout the contract period, for direct advertising as well as the distribution of important program updates and guidelines changes. The subscription service currently has 981 subscribers. In January 2011, CHF setup a social networking site on Facebook to provide ongoing information and announcements about the program.

CHF also generated a newspaper, radio and TV media list for all of eligible jurisdictions for distribution of various press releases and announcements at key periods in the program in November 2010. The first press release, announcing program availability was distributed to media November 18, 2010. The MED also engaged in interviews with local media in Lake, Colusa and Calaveras Counties in November 2010 and continued to provide interviews with local media throughout the contract period. Press releases were distributed on an almost monthly basis, throughout the contract period, announcing program expansion, highlighting the advantages of MIRACL financing and providing statistics on program accomplishments. The MED contacted local media directly in all CHF member counties in an effort to gain earned (free) media, which is publicity gained through editorial influence versus paid advertising expense. CHF also coordinated in-person visits to key county officers and/or CHO personnel, to

introduce the program and leverage existing communication avenues for co-marketing and outreach, from January through December 2011. All CHF member counties were visited, with the exception of Imperial County, whom declined to setup a meeting with CHF. Free press coverage has been documented in 30 newspapers and on 14 county websites during the contract period, reaching audiences in 32 of the 53 eligible jurisdictions. Additional free coverage of the program is documented on several online energy-related or rebate resource sites, and on business websites of most CHF participating contractors.

In December 2010, CHF developed a 30-minute slide "Program Orientation" presentation to explain basics about the program to a variety of audiences including applicants and real estate and mortgage professionals. Since CHF did not engage in any 203(k) financing or EEM transactions (as originally intended), real estate accreditation of the curriculum was not pursued. It was used instead for general education and promotion purposes. The presentation was adapted to fit specific audiences, jurisdictions and time allowances. During the contract term, CHF held 18 online Program Orientation presentations, reaching 200 potential participants, as well as 14 in-person presentations, reaching an additional 664 potential participants. CHF also promoted the program directly to the real estate market at three tradeshows/expositions during the contract term, reaching an estimated 900 real estate and mortgage professionals.

The MIST marketing budget for print advertising was very limited, so most advertising placement was leveraged through participating contractors. CHF provided all participating contractors with templates for advertisements, flyers, door hangers, posters, and other materials.

Beginning in December 2010 and continuing through March 2011, CHF provided cost-sharing and resource-sharing with pilot contractor Beutler Corporation to place newspaper ads and direct mail pieces throughout four initial CHF member counties, El Dorado, Placer, Nevada and Amador. CHF paid for some of the advertising expense, but primarily provided extensive graphic design assistance with development of the advertising materials and ads, including advertisements in Comstock magazine.

In February and March 2011, CHF worked with a video production service and developed a 60-second video promoting the program. This video advertisement was made available on the CHF website and social networking site and distributed to building performance contractors, energy service providers and other entities upon request.

In August 2011, a direct mail piece was sent to nearly 200 past home loan clients of CHF with properties in CHF member counties. The targeted clients were segmented by income matching program income "Thank you" letters were also sent to all recipients of completed retrofit installations, encouraging feedback, referrals and testimonials.

In the fourth quarter of 2011, CHF directly placed ads in local newspapers in 28 CHF member counties. Response was overwhelming during this quarter, in part due to CHF advertising efforts and in part due to the leveraged marketing and promotion of participating contractors. CHF discontinued further print advertising efforts at the end of December 2011, three months before contract end, as all available funding was earmarked for retrofits.

MIST Case Studies for Promotion of 203(k) and EEMs

CHF did not provide energy efficiency loans and grants in conjunction with 203(k) or Energy Efficiency Mortgage (EEM) financing. Therefore, CHF did not provide continuing education accreditation classes nor associated case studies to real estate professionals and bankers.

Quality Assurance

CHF implemented a quality assurance (QA) plan to ensure that trained and qualified contractors and auditors were used, reliable reports and audits were produced and third-party HERS II verifications were performed on each retrofit project.

Initial Contractor Responsibilities

In order to participate in MIST, Contractors were required to:

- Have an active general building contractor (Class B) license in good standing with the state of California;
- Employ a BPI certified building analyst to supervise the retrofit work, and to perform initial testing or auditing;
- Understand whole-house performance and be able to use the CEC-approved modeling and analysis software (EnergyPro) for whole-house retrofits or have access to a person that is able to use this software;
- Furnish CHF with proof that they performed analysis with an energy efficiency evaluation software and completed installation work on at least two (2) actual whole-house performance projects during the preceding 24 months as evidence of such understanding before being approved to participate in MIST; and
- Ensure energy audits and inspections were completed to the specifications of the program guidelines, that the homeowner was provided information regarding the program guidelines and local utility incentive programs, and to assist the homeowner with completion of the loan application package.

Energy Audits/Assessments Performed

All projects included two (2) energy audits/assessments of the property as follows:

- *Initial Energy Audit (Test-in)*
  The Test-in was an in-person inspection and evaluation of the subject property using various energy-efficiency home performance diagnostic tools and the CEC-approved modeling and analysis software, in order to quantify the existing energy efficiency of the property and the energy savings expected to result from the retrofit work. A certified HERS rater or an employee of the Contractor, who is a BPI-certified analyst, was required to perform the Test-in.

- *Final Energy Audit (Test-out)*
  After completion of the retrofit work, a Test-out was performed by an independent HERS II Rater, as defined by the CEC, through a physical on-site inspection of the subject property, verifying the following aspects:
  - ✓ All measures required by and in accordance with the terms of the home improvement contract and addendum were completed;
  - ✓ All installed equipment was working correctly; and
  - ✓ The work met the specifications required to achieve the estimated energy savings indicated by the Test-in performed on the subject property.

The HERS Rater II that performed the Test-out was required to upload the appropriate files to the CalCERTS website and generate a final HERS II report and rating. Problems with the CalCERTS Energy Upgrade Recommendations Report, failing to incorporate existing and improved HERS Index scores, were not resolved until July 24, 2011. Therefore, prior to July 24, 2011, CHF required contractors to provide a HERS (not HERS II) score and a report that shows annual savings from EnergyPro.

CHF Review of Program Submission Package

A thorough review using internal checklists was completed on all program packages, to ensure the following was performed:

- Confirmation of financial feasibility;
- Verification that mortgage is current (if applicable);
- Verification of Employment or other income source;
- Review of title to ensure title is clear of any judgments, active defaults, or tax liens;
- Delivery of loan package to approved applicant(s); and
- Review of fully executed loan package upon return to CHF.

Appropriate Permits Obtained

Contractors were required to submit appropriate documentation demonstrating appropriate permits had been obtained.

HERS II Rater Inspection & Review of Final Energy Audit

A HERS II Rater verification analysis was required to be submitted to CHF prior to funding of any loan. A comparison between the initial contractor inspection levels with the HERS II final inspection determined if the retrofit was still expected to result in the initially projected energy savings goals provided to the homeowner by the contractor and if MIRACL funding requirements had been met. No payments to the contractor were made until the retrofit work passed the Test-out inspection and other program requirements.

Reporting & QA Testing

CHF maintained detailed records on all projects, loans, grants and energy savings, to be readily retrievable as needed. As previously noted, CHF developed a database to maintain records showing the improved home performance rating after the retrofit improvements were

installed. This information is available to the public, free of charge, via the CHF website www.chfloan.org.

Under the contract terms, CHF staff was required to cooperate with any audit or oversight organizations, as well as cooperate with the CPUC on any monitoring and verification (M&V) activities that they may choose to conduct on retrofit projects funded through MIST. CHF staff has been available to cooperate with any CPUC staff or staff from any official oversight organization on any M&V activities, although as of the date of this report, no such cooperation has been requested.

Verification of Energy Savings

The MIST program required verification of energy savings on all completed retrofit projects. The CEC contract specifically required that CHF:

- Acquire monthly electricity and natural gas utility data, and data from other energy sources as consistent with supplier restrictions;
- Collect estimated energy savings from the post retrofit HERS II rater verification;
- Provide a database of actual and estimated use data from MIST retrofits; and
- Facilitate and cooperate with DOE and CEC audits.

The MIST program required complete HERS II Rater verifications on all projects financed through the program (as noted above under "Quality Assurance"). These verifications are available at the CHF website. However, CEC staff informed CHF staff that the CEC was negotiating the availability of post-retrofit energy use information with the investor-owned utilities (IOUs) and that this information would be available sometime in the future. To-date, the CEC staff has been unable to obtain that information due to supplier restrictions on the release of confidential information that might be included in this energy data. Negotiations between the CEC and the IOUs continue on this issue.

CHF staff contacted the five municipal utilities that had MIST-financed projects in their jurisdictions to obtain the energy information required by the contract. Four of the five agreed to supply post-retrofit monthly energy usage reports to CHF. However, to date, the data has only been returned to CHF at sporadic intervals. CHF continues to request the information on a monthly basis.

Energy Efficiency Data on Retrofit Properties

It was the initial intent of CHF to establish a new measure that would contribute to market transformation in the form of a real servitude (an enforceable obligation that runs with the ownership of the land) obligation attached to the property. The servitude was intended to distinguish highly energy efficient residences from others by official, permanent validation, noting that the home was specifically "certified to meet energy star standards," tracking California AB 1103 proposed for commercial buildings. During the program implementation however, CHF encountered hesitation and concerns from title companies and legal advisors

about such recording on a property title. CHF staff determined that real servitude was not feasible.

With CEC approval, CHF took another approach to increasing the consciousness of energy efficiency and influence future preferences of homebuyers, furthering total market transformation towards the adoption of energy efficient homes. All homes retrofitted under MIST after July 1, 2011 were certified by a HERS II Rater and assessed with the following:

- An “Initial Score” reflecting the home energy rating of the property prior to the energy efficiency improvements; and
- A "Final score” representing the improved rating after the improvements.

Upon completion of retrofit work and after the final energy audit was performed on the home, homeowners were provided with home performance labels referencing the associated HERS II report number to place inside the electrical service panel box and near any energy equipment and/or appliances funded through the MIST program. CHF designed a database to store this information and the associated HERS II report and integrated it with the CHF website www.chfloan.org. Using either, the HERS II report number, or a property address, the public can now access this information free of charge.

Program Reporting

A variety of reoccurring reports were generated throughout the contract period and provided as follows:

- Narrative progress reports – provided monthly to the CEC;
- Office of Management and Budget (OMB) reports – provided monthly to the CEC;
- Summary of collected data sent to CWIB – provided quarterly to CWIB; and
- Status of ARRA funds that have been advanced to CHF – provided quarterly to the CEC.

The WDD in cooperation with CEC developed a quarterly report template for CHF participating contractors to provide feedback to CHF and Local WIBs about job creation/preservation and promotion activities. Quarterly reports included contacts made, new hires made, and obstacles faced in using WIBs for new hires. Data from participating contractors was acquired each quarter, consolidated into one report and provided to the CEC as required under the contract. Additionally, CHF responded to separate, ad hoc requests from the CEC on numerous occasions.

Quantitative Results (as of June 05, 2012)

Energy Efficiency Retrofit Installations[8]			
Description	***Count***	***Average Size***	***Total***
Retrofits Completed (gross project cost)	1043	$24,531	$25,585,350
Actual MIRACL Loans Originated (excludes grant funds)	1051	$22,642	$23,796,733
MIST Grants Awarded	1,042	$1,230	$1,281,992
"Test-in" Energy Audits Completed and Grants Awarded	1,042	$400	$416,800
"Test-out" Energy Audits Completed and Grants Awarded	1,042	$300	$312,600

Energy Savings Results[9]	
Average Energy Savings (%)	34%
Average Energy Savings (BTUs)	96,829,632
Total Energy Savings (BTUs)	100,896,476,845
Energy Savings Per ARRA Dollar (BTUs)	18,851

Job Creation/Preservation Results[10]	
Number of Workers Retained	130
Number of Part-time Jobs Created	47
Number of Full-time Jobs Created	152
Total Jobs Created/Preserved	329

[8] Includes funded projects, projects under construction, and projects with approved applications scheduled for construction.

[9] These figures are current as of June 05, 2012, and based on 1042 projects that have been completed and reported by contractors on the ECON2 report generated from EnergyPro. These results were used as the basis for projecting total BTUs saved for all projects in the entire program.

[10] Information on jobs retained and/or created was obtained by CHF staff from participating contractors on a quarterly basis. CHF staff did not verify this information, nor did all participating contractors respond to requests for job creation information.

Conclusions

Market Transformation

Initially, market transformation under MIST was to be measured by three main metrics: 1) An increase in the volume of 203(k) loans in the counties where the program is active; 2) An increase in the number of trained CBPCA-certified contractors and HERS Raters and number of ratings and reports in California's rural counties; and 3) An increase in the number of low-to-moderate income houses that receive comprehensive energy retrofitting.

Due to program changes, (i.e. 203(k) and EEMs were not attractive in the current difficult real estate market) the market transformation accomplished by MIST must be measured by the number houses retrofitted on behalf of low-to-moderate income homeowners retrofitted during the contract period. With over 1,000 homes retrofitted in a matter of 15 months, it is evident that the three main barriers to market transformation, 1) public awareness, 2) demand, and 3) availability of low-interest financing, were greatly impacted by MIST. In addition, CHF does not have access to the past number of HERS raters and the current number of HERS raters to determine any increase. However, completed MIST projects now have a home performance rating that did not exist on these properties prior to the program.

Public awareness of the value of deep energy retrofits was improved through marketing and outreach, and the comprehensive measurement aspects of the program. While CHF had initially estimated the average project to cost approximately $12,500, the actual average was approximately $22,600 in retrofit work. Rebates from local and municipal utility providers totaling $3 million, and tax credits totaling $2 million, only served to increase the awareness and incentive for homeowners to make major energy efficiency improvements to homes. The average increase in energy savings was approximately 34% per home.

Clearly, MIRACL financing and grants tapped into a reservoir of pent-up demand within the marketplace. Demand for MIRACL financing and grants provided by MIST readily exceeded funding availability. In November 2011 CHF sent out an announcement to participating contractors stating that the program was fast approaching a point at which all available loan funds would be exhausted. Shortly after the announcement, the number of applications received monthly more than doubled. All remaining funds were fully allocated within 30 days of the announcement.

While the 15% grant to subsidize the retrofit work provided by the program was an attractive component to applicants, it was evident that the MIRACL financing was key to the success of MIST. In the final quarter of the program, CHF will be unable to issue grants on many projects, due to contract time constraints on grant funding. However, contractors in the MIST program have indicated that the impact on production will be minimal when this occurs. The application cancellation rate was less than 15% and direct feedback from contractors continues to remain

very favorable. As of June 05, 2012, 91 applicants applying for a total of over $2 million in loans remained on a waiting list.

Successful Leveraging of Relationships

MIST was highly leveraged on the coordination of marketing and promotion through existing communication channels and business partners, especially participating contractors. The program was very successful in these efforts, and marketing and promotion efforts were unable to keep up with the influx of program interest, as seen in the participation levels that exceeded available funding.

In the fall of 2011, CHF earmarked $200,000 for a print advertising campaign to reach end-users. Two months into the print campaign, CHF cancelled over two-thirds of the advertising, saving over $150,000 as program funds, because the program was fully subscribed at that time. These funds, along with other unused administrative funds, were ultimately redirected, with CEC approval, to fund more loans.

Lessons Learned

Challenges Faced with Contract Expectations

Thanks to the continued advocacy and economic backing of the CEC, MIST far exceeded expectations, providing financial assistance to over 1,050 homeowners making energy efficiency home improvements. The CEC originally awarded a $16.5 million grant to CHF under the ARRA. During the contract period, the CEC awarded CHF with an additional $11 million of ARRA funds, bringing the total funding for MIST to $27.5 million. Those funds have all been exhausted, yet over $2 million in applications still await any funding that might become available before the end of the program. Most of those applications are available for immediate funding.

CHF believes the program would have been even more successful without the delays in contract approval in 2010, a clearer understanding, provided earlier in the program, of the expectations of SHPO requirements for residential housing, and an improved expedition of SHPO application reviews. The application of the SHPO requirements to single family homes presents a potentially troublesome ongoing issue for MIST and other ongoing ARRA-funded retrofit programs. The requirement for SHPO consultation and review of any home 45 years or older places an additional administrative burden on contractors who wish to retrofit that portion of the single family housing stock most likely in need of energy efficiency retrofitting and upgrading. In addition, the length of time to acquire a denial or approval from SHPO placed retrofits in jeopardy of cancellation by contractors or applicants.

CHF was expected to leverage local utility rebates in conjunction with MIST to provide even greater savings to applicants. However, this provided a customer service challenge for CHF, in that CHF received calls from numerous homeowners after MIST retrofit projects were completed, with concerns about utility rebate processing delays. Delays in the receipt of rebates of four months or more were reported by homeowners, and while CHF attempted to

resolve issues and concerns through communication with investor-owned and municipal utility providers, the perception of the service level of CHF and MIST were negatively impacted by such delays.

Lastly, providing verification of energy savings after project completion continues to be a challenge due to delays from investor-owned and municipal utilities. Challenges were faced when requesting utility records on an ongoing basis, even with approval from homeowners. CHF was unable to meet this contract expectation.

Underwriting Flexibility Lessons

CHF learned that while having flexible underwriting guidelines for MIRACL financing did provide greater accessibility of the program to low-to-moderate income families, the decision not to require a minimum credit score, and provide documentation thereof, may create a challenge when discussing future funding from private investors or banks, using this portfolio as a "backstop." Most investors rely on credit worthiness to determine risk.

CHF also learned that by not creating a cap on project cost/size and MIRACL financing, applicants were able to engage in deeper retrofits. This was both a positive and negative aspect of MIST. Deeper retrofits meant greater energy savings. However, deeper retrofits also meant larger loan amounts and that translated into fewer applicants that had access to program funds.

MIST was limited to CHF member and associate member counties. If the program could have been expanded outside CHF jurisdictions, more families would have had access to the program. This is something that CHF would consider in the future if the program or a similar program were to be made available.

Technology

CHF implemented various technology solutions to support efforts towards the whole house energy retrofit program. This included the development of a backend database for storing information relevant to project as defined by both CHF processes and reporting requirements set forth by the CEC and DOE. CHF also developed an in house web portal as a front end interface to this database.

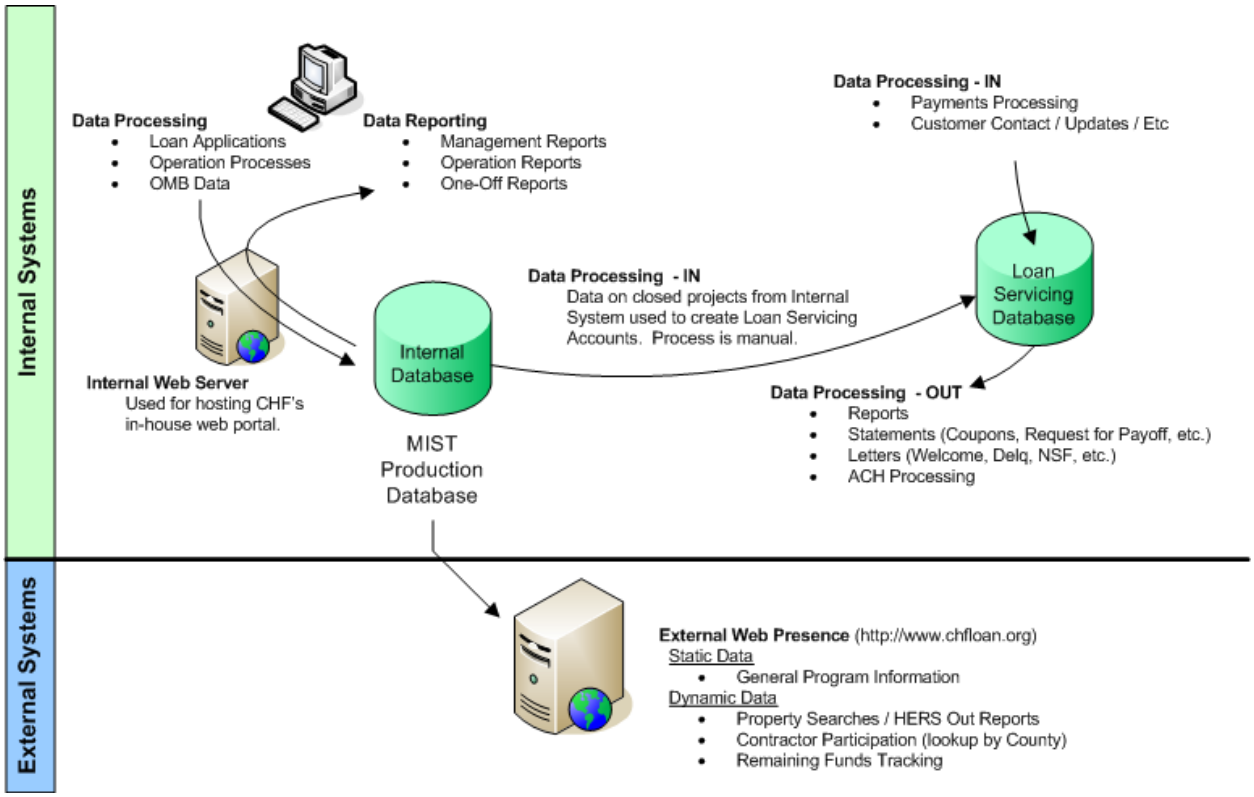
The front-end portal provided CHF staff the mechanism to process submitted applications into the portal. Once in the portal, these applications could be managed throughout the various stages of CHF's pipeline. These applications could also be managed throughout the pipeline process, which could include changes to the application, auto-generating loan and escrow documents, etc. Various aspects of CHF's work process were also tracked via this portal, such as the tracking of loan processing fees, Uniform Commercial Code filings and its associated next file date, home performance reports, applications in the pipeline and applications awaiting additional ARRA funding, etc.

The portal also provided quick and easy reporting. Many operational reports or views were created for managing and tracking of the day-to-day operations of applications/projects. A "Program Administration" view or report was created as a Management- or Program-level view. This view provided instant, to the moment, information regarding CHF's pipeline. This was commonly used in weekly meetings with the CEC, Critical Program Review meetings, meetings held by CHF, etc. This system is also used for the generation of the monthly OMB reports. Required data is collected on a per project basis, assimilated and uploaded into the backend database. Once all data is collected a report is generated which is used to populate the OMB report which is then submitted to the CEC.

Additionally, CHF was able to complement its existing external web presence, www.chfloan.org, by providing dynamic data in association with the static material provided on the website regarding the program. This dynamic data allowed homeowners to look up participating CHF contractors by County, allowed users to look up home performance reports by report number, HERS score or property address, and provided CHF home improvement contractors the ability to see how much ARRA funds remained in the program and/or the amount of funds with an "awaiting" status.

CHF also acquired an off-the-shelf loan servicing software. Once a project was completed the in-house web portal provided a report which was used to seed the loan servicing system. This loan servicing system provided CHF the ability to operate and manage a loan servicing portfolio. This included, but was not limited to, sending out borrower coupons or statements, processing of payments, producing Automatic Clearing House (ACH) transactions using the National Automatic Clearing House Association standard, tracking and communicating delinquencies, Non-Sufficient Funds (NSF), etc.

The illustration below demonstrates the components of CHF's database as well as the flow of information and data into and out of the database.



Addendums

Detailed Program Data
Projects Received and Funded
Project Financing Program Wide
Estimated Energy Savings per County

Other Addendums
MIST Program Term Sheet
Procedures Manual for Contractors
Contractor Welcome Letter
Contractor Participation Application & Checklist
Contractor Participation Agreement
Eligible Counties & Applicable Income Limits
Addendum to Home Improvement Contract
Notice of Loan and Grant Approval
Waste Management Plan
Waste Management Plan Certification and Compliance Form
Loan & Grant Application Checklist
SHPO Contractor Consultation Form
Energy Usage Data Release Form
Authorization to Release Property Information
CHF Loan and Grant Application
Project Financial Analysis Worksheet
Loan Approval Checklist
Adverse Action Notice
CHF Loan and Security Agreement (and Grant)
Fixture Filing Disclosure Statement
Authorization of Automatic Withdrawal of CHF Loan Payments
Notice of Right to Cancel
Project Completion & Funding Checklist
Certification of Completion
HERS Certification of Completion of Installed Measures
List of Deliverables
MIST Budget