

CREATING A SUSTAINABLE RESIDENTIAL RESOURCE EFFICIENCY PROGRAM USING THE AMERICAN RECOVERY & REINVESTMENT ACT (ARRA) FUNDS

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A Case For Action

High utility costs impose a significant financial burden for many low-income families. The heat during summer months can be fatal to children and elderly who do not have adequate HVAC systems or cannot afford to cool their homes. A recent survey of low-income households found that during the prior five years, due to their energy bills, 57% of non-elderly owners went without medical or dental care, 25% could not make their rent or mortgage payment, and 24% went without food for at least one day. As utility costs continue to increase, the problem will worsen. From an environmental impact standpoint, buildings have been identified by the US Environmental Information Administration as using almost half of the annual energy consumed in the US and contributing almost half of the CO2 emissions to the U.S. carbon footprint. Low-income homeowners typically do not have the resources or access to education on how to implement upgrades or behavior change to reduce this impact. Government resources alone cannot reach all of the homeowners in need and address this demographic. The American Reinvestment and Recovery Act (ARRA) has provided cities with a unique opportunity to fund residential resource efficiency programs that benefit low-income homeowners but it is only temporary funding. Without a sustainable funding model for these resource efficiency programs, the programs will end when the funding ends.

The Solution



A Nurtured World, a non-profit dedicated to helping individuals live environmentally sustainable, financially successful, and satisfying lives has successfully piloted a model for city-by-city implementation of our *1house at a time*™ residential resource efficiency (RRE) program.

Through this program A Nurtured World is committed to improving the quality of life of low-income homeowners who do not have the resources to otherwise participate in assistance and education programs while also creating a community of volunteer leaders who make measurable changes in their own lives as a results of participating in this program.

We achieve this outcome through a combination of:

- Home Resource Efficiency Work Events and Green Job Training
- Solar/Renewable Energy Installations and Green Job Training
- Volunteer Education
- Measurement of Outcomes

What does the program create?

Our program creates an innovative, financially sustainable residential resource efficiency program by combining into one program a diverse funding structure incorporating:

- City, State, and Federal incentive programs,
- Private, public and non-profit partners,
- University education programs, and
- Community volunteers.

This program has received a written endorsement to the current Administration **“as a national green community service model for reducing carbon footprint, saving energy, rebuilding low-income communities, helping families save money, and creating green jobs”** from the Energy and Environment Subcommittee of Obama for America, Chicago-Hyde Park.



ABOUT THE PROGRAM ELEMENTS

We can make a difference  *at a time*

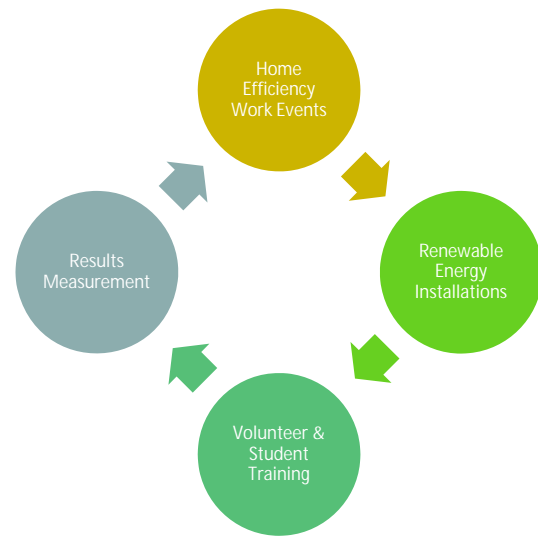
Summary

The *1house at a time*™ residential resource efficiency (RRE) program model combines four standard program elements with adaptations for cities who want to expand to include green job training elements within the core program.

- Home Efficiency Work Events (including optional Green Job Training)
- Renewable Energy Installations (optional green Job Training)
- Volunteer and Partner Education
- Measurement and Reporting of Results

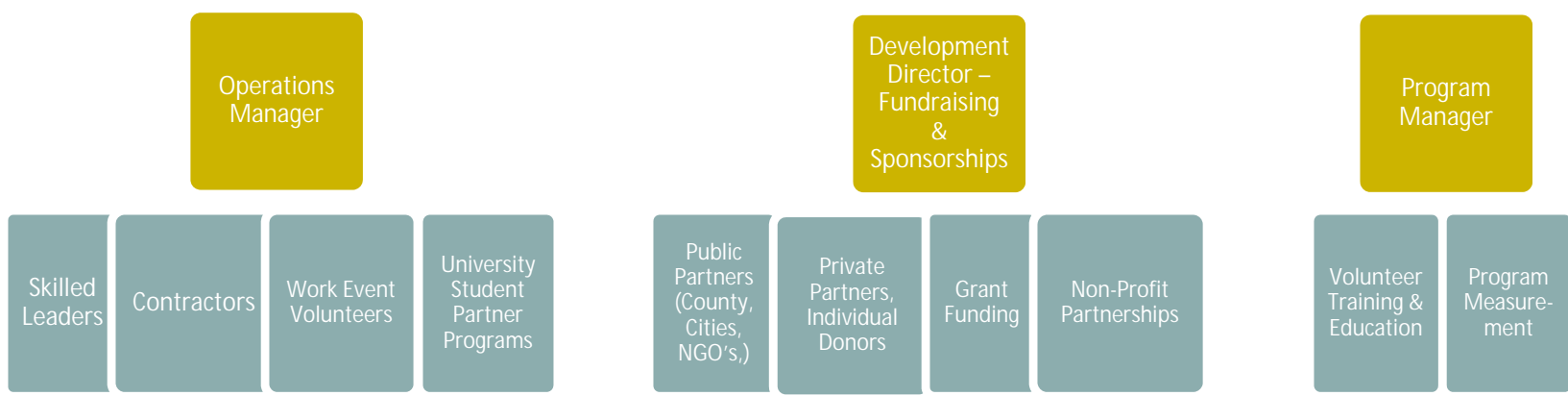
Each program element is discussed in the following section. The program is managed through three key personnel: an operations manager, a development director, and a program manager.

Program Structure



Program Organizational Structure

A Nurtured World



Home Efficiency Work Events

The home efficiency work events directly help local low-income households alleviate the strain of high utility bills by making these homes more utility-efficient. We reduce home utility consumption through home weatherization, new energy- and water-efficient appliances and HVAC systems, efficient water fixtures, rain barrels, and energy saving devices such as programmable thermostats and compact fluorescent bulbs. The homeowners are trained by the project coordinator on the efficient use of their home. The technologies used in each home are designed to meet the needs of the individual home, based on the results of a professional home energy audit completed prior to the event. The upgrades will not only reduce environmental impacts, but will also increase the quality of life for these homeowners, some of whom are living in sub-par conditions (e.g., extremely hot and/or moldy climates due to malfunctioning AC units, leaking ducts, and other issues). The events can be completed through our volunteers and/or students in-training supervised by a licensed tradesperson.



Solar & Renewable Energy Technology Installations & Workshops

Qualifying homes may benefit from the second element of our efforts which includes installation of renewable energy technologies and/or on-site solar photovoltaic system while also providing hands-on training for students and/or volunteers. Solar PV systems generate approximately 4,200 kWh per year of emission-free electricity while other technologies' reduction of energy and/or water use will depend on the technology selected. To qualify, a home must be optimized in terms of power use, have an appropriate roof and sufficiently updated electrical system to support a safe installation. These factors, and many others, are assessed and evaluated in partnership with solar installers who are selected by a competitive contractual process that takes into account cost, quality, and experience. Working together to install renewable energy technologies and solar systems, we eliminate the initial investment hurdle for these struggling homeowners while enabling them to improve their financial position as utilities are often their second highest monthly expense. We also create partnerships with local institutions to provide students hands-on installation experience to complement green job training.



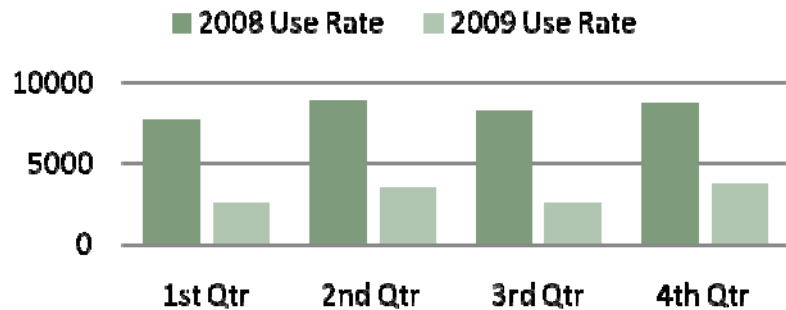
Volunteer Training

The third element of this effort includes providing our volunteers and students as well as sponsors and community leaders with Consumer Conservation and Leadership Workshops that are closely aligned with the home efficiency and renewable energy events. The purpose of the workshop is to train the participants in how to reduce their personal environmental impact and how to effect change in their community. The workshop uses A Nurtured World's successful behavior change and culture change models that we have delivered to over 1,500 people throughout the US, with an average savings of ~\$2,000 per person and >2.0 tons of CO2 reduction per person. These workshops include both behavior-based learning methods and content education (e.g., understanding environmental impacts and best practices). By combining technical training with behavior-based methods, these workshops have proven effective at producing measurable results. The value of this workshop will be twofold. First, the participants will personally reduce their own footprint and save money. Second, we will create the next set of leaders for positive change on the environment – whether they choose to contribute to our efforts or design and implement their own innovative solutions.



Measurement of Results

Our program events encourage community building and civic engagement through a unique education curricula and hands-on experience that benefits both the homeowners, funders, and the volunteers financially while also measurably reducing their environmental footprint. During each event, homeowners, students and volunteers are trained in the installation of environmental technologies and in personal behavior change. The homeowners' reductions in energy and water are measured using actual utility bills with their permission. The volunteer/student results are measured by conducting phone interviews. The measurement methods applied to the volunteers are based on eight (8) years of development by A Nurtured World in documenting personal pollution prevention and our methods have been approved by the EPA through our Quality Management Plans and Quality Assurance Project Plans. A Nurtured World has been a leader in EPA Region 6 and nationwide in developing measurement methods both for the consumer and industrial sectors and has trained other states in use of our methods.



Why our Program is Unique

- We use a flexible model for collaboration and funding so that each house is treated as unique and we do not duplicate or replicate services that are available to the homeowner from other assistance programs through government and complementary non-profit agencies.
- We provide education and training through work events while also teaching a powerful personal behavior and culture change model that allows us to not just gain footprint reduction from the homeowners, but also all volunteers and partners who participate with the program.
- Our model for program growth and development only requires initial ARRA 'seed' money to start the program in each city. That initial funding money is used to create a sustainable funding stream and partnerships that are independent of ARRA funding sources.
- We support multiple facets of the ARRA program goals including weatherization, energy efficiency, non-profit organizational program development, green jobs training, and green jobs marketplace creation.
- We combine social service with environmental footprint reduction to deliver not only a better quality of life for our low-income homeowners but also measurable environmental improvement to support city's climate change goals, improvement in air quality, and supporting a growing population through creating a culture of resource efficiency.



HOW DO YOU GET STARTED?

We can make a difference  *at a time*

RRE Program Development Plan

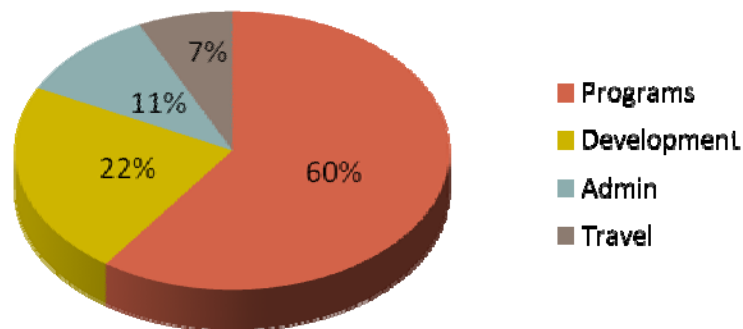
For cities interested in seeding the development of our program, the first step is to request \$250,000 of funding through your ARRA energy efficiency conservation block grant funding with the overall goal to create a sustainable residential resource efficiency program for low-income homeowners through the *1house at a time*™ program model.

A Nurtured World will apply the funding create a sustainable RRE program to deliver the following services to develop and maintain a program without long-term ARRA-type support:

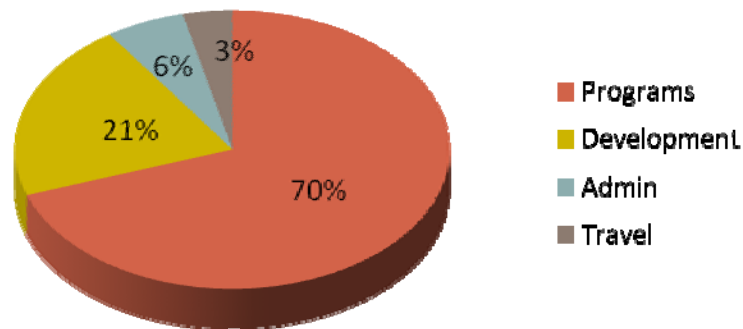
- Creation of a sustainable funding stream through developing an initial funding stream that matches the \$250,000 of block grant from the city with an equal match of private/public funding and in-kind funding (i.e. donation of materials, volunteer time, and partnerships with other public and private organizations).
- Selection of a program operations manager to manage events and a fundraiser who will implement a 3-year fundraising plan to ensure the program remains viable past the \$250,000 of seed monies from the block grant.
- Annual measurement of program results using our EPA approved QAPP measurement methods to demonstrate the success of the program as well as improve our financial and environmental footprint reductions over time.
- Year 1 Goal: Completion of 1 home per month in Year 1 including two solar installations (12 homes total) while funding streams are solidified and partners engaged in the program.
- Year 2 Goals: Completion of 2 homes per month in Year 2 including four solar installations (24 homes total) as funding sources are becoming established and matching funding is received.
- Year 3 Goals: Completion of 1 home per week in Year 3 including eight solar installations (52 homes total) as funding sources are stabilized and a sustainable income stream has been established.
- Sustaining goal of dedicating more than 75% of funds directly to programs versus fundraising & administrative costs.

The program will be expanded beyond Year 1 through 3 goals for completion of work events and training as funding streams are increased and program capacity is developed.

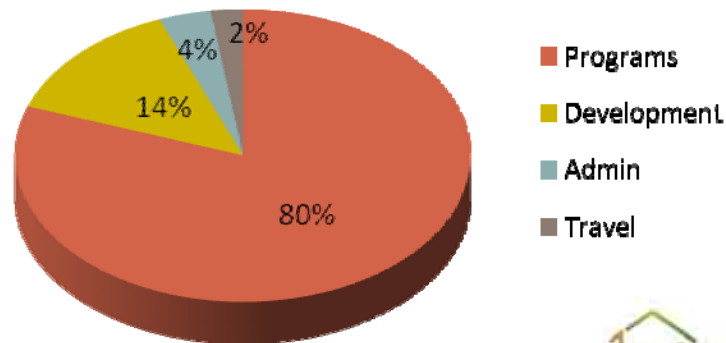
Year 1 – Funding Use Goals



Year 2 – Funding Use Goals



Years 3+ – Funding Use Goals



FOR MORE INFORMATION

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