



## CUYAHOGA MHA CREATES A PIPELINE OF GREEN JOBS, CONNECTING RESIDENTS TO ENERGY EFFICIENCY

### SOLUTION OVERVIEW

The Cuyahoga Metropolitan Housing Authority (CMHA) joined the Better Buildings Challenge (BBC) in 2014, committing to reducing energy use by 20 percent across its portfolio of 10,500 multifamily housing units by 2024. In early 2015, the housing authority joined the SEED pilot program, a joint initiative of the U.S. Department of Housing and Urban Development (HUD), the U.S. Department of Energy (DOE), and the U.S. Department of Education (ED).

**SEED**, which stands for **STEM** (Science, Technology, Engineering, and Math), **Energy**, and **Economic Development**, is a cross-agency pilot program that prepares public housing residents for current and future STEM and technical jobs by increasing energy literacy, providing learning opportunities, and connecting residents to training opportunities for careers in the space. The pilot extended to six Public Housing Authorities (PHAs). HUD designed the offering to complement existing federal efforts focused on financing energy retrofits by adding a place-based program that develops human capital to support energy efficiency. Since joining SEED, CMHA has been able to integrate energy efficiency and STEM education across many of its existing programs, which has helped the agency progress toward its BBC energy reduction goals.

The SEED program's structure has served as a vehicle to foster new relationships and expand existing partnerships with local organizations, which has increased CMHA's capacity to educate residents on the benefits of reducing energy use. First Energy provided CMHA with thousands of energy saving kits to distribute to residents to assist with their energy literacy efforts on-site. Meanwhile the Cleveland Museum of Natural History, the Cleveland Municipal School District, and the Cleveland Public Theatre have worked with CMHA to develop after-school programming and hands-on experiences to engage students on STEM topics and resources – from hands-on projects to plays about the benefits of energy efficiency. Cuyahoga County teamed up with Case Western University to obtain a National Science Foundation grant that CMHA would use to improve energy use tracking at its properties. Finally, CMHA is conducting a feasibility study on replacing city-owned vehicles (which would include those owned by the housing authority) with alternative fuel vehicles; the study is being funded by a \$50,000 grant from Cleveland's Local Government Innovation Fund.

CMHA is currently applying for grant funding to better train its after-school staff on the fundamentals of energy efficiency, which will enhance their STEM modules. CMHA has noticed anecdotally that its children have a strong influence on their parents on the subject of energy efficiency, so the agency has worked to strengthen its after-school curriculum. In the future, CMHA hopes to leverage more private resources to further expand its STEM education and training efforts.

## **ORGANIZATION TYPE**

Public Housing Authority

## **BARRIER**

Lack of resident engagement with energy efficiency and STEM education and job opportunities

## **SOLUTION**

Leverage new and existing partnerships to increase energy literacy and STEM education, and to develop a pipeline of green jobs

## **OUTCOME**

Increased resident knowledge of energy efficiency and STEM topics, resulting in energy savings and new employment opportunities

## **PROCESS**

CMHA made a 3-year commitment to SEED in April 2015. The program is organized around three pillars: energy literacy, STEM education, and job-driven skills training. PHAs have significant freedom to integrate these pillars into new and existing programs to reach their goals. CMHA kicked off its SEED efforts by hosting a conference call with a range of community organizations including the Boys and Girls Club, local colleges and universities, the Cleveland Municipal School District, the Great Lakes Science Center, and the Cleveland Public Library. In some cases, local organizations agreed to contribute directly to CMHA's SEED efforts. In all cases, the organizations agreed to coordinate with one another to maximize the effect of their programming. CMHA has a full-time sustainability coordinator who manages the SEED program. She is supported by nearly 20 internal employees that assist with programming, data collection, and reporting.

Some of CMHA's key SEED efforts are listed below, categorized by pillar:

### **Energy Literacy**

One of CMHA's principal challenges in motivating residents to conserve energy is the fact that some residents don't pay their utility bills and therefore don't benefit financially from reduced energy usage. In response, CMHA has created a resident engagement plan focused on 3-4 sites. The resident engagement pilot includes the following goals:

- Increase energy literacy and awareness;
- Reduce energy and water use;
- Create behavioral and cultural awareness;
- Create Green Leaders (Climate Ambassadors);
- Promote a sense of community and social interactions; and
- Create a healthier building environment.

The plan will achieve the above goals through a combination of energy literacy presentations, community events, distribution of energy savings kits (which included simple energy efficiency upgrades like compact fluorescent light bulbs and motion sensor night lights), and friendly competitions to reduce energy use. CMHA will also leverage partnerships with existing organizations and programs. Through this engagement plan, CMHA hopes not only to reduce energy use by an additional 3-5 percent, but to promote community and social interaction, create a healthier living environment, and increase awareness of energy efficiency.

## **STEM Education**

CMHA's STEM program goals are to:

- Integrate STEM principles and techniques into all educational programming;
- Bring in new targeted STEM programming;
- Partner with the school district to develop a hands-on project with elements that take place during and after school;
- Invite STEM professionals in nontraditional careers to educate the students on alternative career paths and options;
- Increase STEM knowledge and confidence in students, with a focus on young girls; and
- Leverage existing community resources to enhance and expand STEM learning.

CMHA has integrated STEM education into the four after-school programs it operates, allowing each site to determine the best implementation method for the community it serves. Some sites have coordinated with STEM providers, such as 4-H or the local community development corporation, to enhance their STEM curriculum. Other sites have modified their existing programming to include STEM principles. For example, one site explains the physics involved in sports as part of its physical activity module. In total, CMHA serves about 300 children through after-school programs.

Beginning in 2016, CMHA hosted a full week of STEM activities for children during Spring Break along with several partners such as the Children's Museum, the Cleveland Museum of Natural History, and the Girl Scouts. Participants spent time building roller coasters, tinkering with Lego® robotics, and mixing their own homemade cleaning supplies. CMHA plans to repeat this event in 2017 and in future years.

## **Workforce Development**

CMHA's SEED focus on workforce development is achieved through its Project Area Residents (PAR) and Jobs Plus programs, and by linking STEM programming to Jobs Plus. CMHA's PAR program is a resident hiring program in compliance with HUD's Section 3 requirements, which ensures that 25 percent of the labor hours performed in any construction project funded by CMHA are performed by CMHA residents. In the past, residents have used the skills they gained through this program to find permanent, full-time jobs.

CMHA leveraged its participation in SEED to obtain a 4-year Jobs Plus grant from HUD, which allows CMHA to implement place-based workforce development services for residents at two of its

family properties. In its second year, the Jobs Plus programming is focused on two CMHA sites and more than 1,400 households. CMHA has used its Jobs Plus funding to hire resident “weavers” who reach out to each household in the neighborhood and ensure they understand CMHA’s workforce development offerings. In addition, multiple service providers deliver workforce development services in the neighborhood, bringing them directly to residents.

Jobs Plus helps CMHA residents:

- Obtain and retain employment;
- Advance in a current job or transition to a new occupation;
- Earn a college degree or vocational credential;
- Launch or grow a business that benefits the Central Neighborhood; and
- Receive financial literacy education, one-on-one financial coaching, and housing counseling.

CMHA has included youth programming in its Jobs Plus offerings, which occurs in a shared building alongside a middle school after-school program, to create a workforce development pipeline. When youth age out of the program, they are automatically referred to Jobs Plus to continue their STEM education. The Jobs Plus youth programming is for children 14 to 17 years old. Participants earn Jobs Plus “dollars” by attending special events and programming, some of which are focused on STEM. The “dollars” can purchase field trips to basketball and baseball games. Although the field trips are a reward, youth must interview at least three workers at the event as part of their assignment.

## **OUTREACH**

CMHA’s outreach efforts will increase significantly when it begins its year-long resident engagement plan in the spring. However, resident engagement has been a core part of its success to-date. Since the start of SEED, CMHA has visited after-school programs to hold energy literacy workshops for about 300 children. Members of the CMHA sustainability team regularly attend resident meetings to distribute energy efficiency materials, answer questions, and provide a brief overview of the goals of the BBC. In addition, CMHA has intentionally incorporated energy efficiency into its existing outreach programs; for example, CMHA staff distribute energy efficiency pamphlets and discuss their SEED programming at PHA resident/community events, and while handing out food at the Greater Cleveland Food Bank Mobile Food Pantries, hosted at CMHA sites.

## **TOOLS AND RESOURCES**

The following tools and resources have helped SEED participants implement their SEED programs:

- [Grants.gov](https://www.grants.gov)
- [Energy is Everywhere webinar series](#)

## **OUTCOMES**

CMHA reports outcomes on a quarterly basis in a report to HUD to demonstrate their progress toward fulfilling SEED objectives and leveraging SEED-funded programs to encourage green

workforce development. The outcomes are organized around the three pillars of SEED. Below are some results from the most recent quarterly report:

### **Energy Literacy**

- Hired a consultant who will help CMHA develop a new resident engagement program, evaluate an existing Energy Performance Contract (EPC), and provide recommendations for the next EPC or extension of the existing contract.
- Recently awarded a Local Government Innovation Fund grant in conjunction with the City of Cleveland and the local University Hospital to perform a feasibility study for converting a fleet of vehicles to run on alternative fuels (electric, biodiesel, etc.).
- To meet its BBC commitment, CMHA recently submitted its energy data into Portfolio Manager to establish a baseline for its energy reduction goals.

### **STEM Education**

- Distributed 370 tablets and mobile Wi-Fi devices to children and trained them on safely using the Internet for research projects.
- 36 residents attended a four-week computer training program and received a free computer upon completion of the course.
- Since the start of the 2016 school year, CMHA has included at least 45 minutes of STEM activities each day into its after-school curriculum at four sites with more than 300 children.
- Sent 20 youth to the American Community Gardening Conference, where they learned about nutrition, gardening, and biodiversity.

### **Workforce Development**

- Nearly 50 CMHA residents have been hired to perform construction work on three large projects. The next construction project begins in December and will also hire residents. Prior to beginning work, all residents receive job readiness and job skills training.
- CMHA residents continue to attend Sherwin Williams trainings to earn their Renovation, Repair, and Painting certificates from the U.S. Environmental Protection Agency (EPA).
- As of spring 2017, through the Jobs Plus program, 550 residents have participated, 328 are currently enrolled, and 70 are taking advantage of Jobs Plus Earned Income benefits; 106 residents have been placed in jobs.
- CMHA hosted 43 resident interns in the summer of 2016 in various positions across the agency including construction, inspection, and applications.

## **MEASURING SUCCESS**

SEED organizes its success metrics around three pillars: energy literacy, STEM education, and workforce development. On a quarterly basis, SEED grantees report their progress on metrics that demonstrate progress in one of the three broader pillars. CMHA also submits quarterly utility cost savings from energy conservation measures at its SEED sites, which is then benchmarked to show cost savings that occur over the course of the program.

A sampling of the metrics includes:

- Number of Participants/Attendees in SEED Energy Literacy Activities, Programs, and Events
- Number of new STEM Internship Opportunities Created by SEED
- Number of direct vacant full-time, permanent jobs filled

In addition to demonstrating the various successes of the SEED program, quarterly reporting is helpful in allowing CMHA to assess and improve its efforts. Recently, to maximize STEM results, the team adjusted the curriculum in its after-school programs to emphasize STEM and mandated a minimum of 30 minutes of STEM programming per day. The curriculum changes were implemented in the beginning of the 2016-2017 school year and CMHA expects that its students will begin to show improvements in STEM subjects at school.

