



SAFE HOUSING, INC. CASE STUDY

SAFE Housing, Inc. (SAFE Housing) supports energy efficient housing for Maryland's low-to-moderate income citizens by upgrading homes with measures that save on energy costs while also addressing health and safety issues. With the assistance of the Maryland Energy Administration's (MEA) [2018 Clean Energy Communities Low-to-Moderate Income Grant Program](#) (LMI), SAFE Housing upgraded low- and moderate-income housing in Western Maryland to be more energy efficient and affordable. The homes weatherized under this grant were not eligible for weatherization work under other common funding sources that typically serve this market segment. The MEA's LMI program was able to provide the much-needed energy efficiency upgrades. Three different communities in Washington County, Maryland totaling over seventy (70) homes were positively affected via weatherization under this LMI grant award.

Two Section 8 affordable housing apartment buildings, Country Village and Mountain View Apartments, were unable to qualify for other low-income energy efficiency programs because the attic area was a common open space with no firewall separation barriers between the units. The MEA LMI Program provided funding for cost-effective energy efficiency upgrades which included: upgrading to



Country Village (left, 32 units upgraded) and Mountain View Apartments (right, 28 units upgraded)

LED lighting, upgrading to ENERGY STAR refrigerators, air sealing to reduce infiltration and drafts, increasing attic insulation to R49, and replacing aged Packaged Terminal Air Conditioning (PTAC) with energy efficient Packaged Terminal Heat Pumps (PTHP). The upgrades to PTHPs alleviated the need for electric baseboard resistance heating, resulting in significant electricity savings during the heating season.

The MEA LMI program covered the cost of energy audits, followed by the implementation of weatherizing measures and cost-effective upgrades to HVAC, appliances and lighting. The audits adhered to the [Building Performance Institute audit process](#) that requires health and safety [standards](#) be met before air sealing and weatherization measures are performed. MEA LMI grant funds were also used to install exhaust fans with smart cycle switches to meet mechanical ventilation requirements and help to maintain healthy indoor air quality for the residents.

The Point at Smithsburg is another Section 8 Housing Community that was unable to qualify for other federal/state low-income energy efficiency programs because participation required a significant landlord or homeowner contribution. The MEA LMI program upgraded these homes while also leveraging other utility program funds. Allowing applicants to leverage other funding via state, federal, private, and utility programs enables them to expand the size of their respective projects. The flexibility of the LMI program to compliment other funding sources allowed SAFE Housing to greatly expand the overall funding pool and the scope of efficiency upgrades.

Energy savings measures installed at the Point of Smithsburg included upgrading to LED lighting and ENERGY STAR refrigerators, air sealing to reduce infiltration and drafts, increasing insulation to R49, and

replacing aged heat pumps with new ENERGY STAR 16 SEER heat pumps with efforts to balance the HVAC distribution system. Frequently, residents and/or the property manager were forced to open windows in different spaces of the homes because of uneven temperatures from the heating and cooling system. In winter months, with homes being heated, the upstairs windows would be opened to cool the space. In summer, the downstairs windows would be opened because the space was too cold. The completed HVAC upgrades helped to balance the heat pump’s distribution system by sealing the ductwork with mastic, installing dual monitored thermostats (temperature readings on both floors), repairing ductwork, and adjusting dampers, creating more even temperatures and increasing the overall comfort of the residents.

The MEA LMI program encourages [grant awardees](#) to seek projects which are not eligible for funding from other programs. For SAFE Housing, targeting ineligible projects, as well as leveraging utility funding, provided comprehensive and cost-effective upgrades that otherwise would not have been possible. The table below shows the combined measures, costs, and paybacks for SAFE Housing’s three projects. These projects highlight the MEA LMI program’s ability to fill a need for low-and-moderate income Marylanders in a way that will save energy, save money, improve health and safety, and improve comfort.

Energy Measure	MEA Grant	Leveraged Utility Funding	Combined Funding Level	Electricity Savings (kWh/yr.)	Annual Cost Savings	Payback (Years)
Installed Upgrade Measures						
Lighting	\$3,516	\$4,171	\$7,687	75,110	\$10,095	0.8
Appliances	\$30,570	\$6,231	\$36,800	13,933	\$1,873	19.7
HVAC Upgrades	\$158,630	\$226,164	\$384,794	103,144	\$13,863	27.8
Water Heating Upgrade	\$1,044	\$13,167	\$14,211	13,933	\$1,873	7.6
Envelope Improvements	\$66,443	\$52,358	\$118,802	52,925	\$7,113	16.7
Programmatic Costs						
Audit & QA Inspections	\$19,650	\$15,200	\$34,850			
Health & Safety	\$42,086	\$31,203	\$73,288			
Administrative	\$3,062	\$0	\$3,062			
Totals						
Total, Upgrade Costs Only	\$260,203	\$302,091	\$562,294	259,045	\$34,816	16.2
Total, All Costs	\$325,000	\$348,494	\$673,494	259,045	\$34,816	19.3

Table: SAFE Housing Projects of Country Village, Mountain View, and the Point Energy Efficiency Measures with Estimated Savings and Simple Paybacks