



CALIFORNIA LOW INCOME WEATHERIZATION PROGRAM

FOR MULTIFAMILY PROPERTIES



2020 Case Study: FLORENCE AVENUE VILLAS



LIWP works to leverage incentive programs and deliver deeper savings for residents and property owner at Florence Avenue Villas

Los Angeles, CA | 20 2-BR and 3-BR units | Built in 1994

In 2018, Century Housing utilized the Low-Income Weatherization Program (LIWP) for Multifamily to complete an extensive energy efficiency retrofit at Florence Avenue Villas aimed at significantly reducing energy use and greenhouse gas emissions while also working to lower energy bill costs for residents. Florence Avenue Villas is located in a disadvantaged community (DAC) and serves low-income families. As part of its no-cost comprehensive technical assistance, the LIWP team worked with Century Housing staff and the Los Angeles Better Buildings Challenge to develop a comprehensive scope that leveraged multiple funding sources to go above and beyond the standard level of upgrades to significantly reduce energy use and deliver meaningful benefits to both owner and residents.

CO-LEVERAGED PROGRAM RESOURCES

Approximately \$110,505 of funding from the California Solar Initiative (CSI) Thermal Program, Los Angeles Department of Water and Power (LADWP), SoCalGas, and the Solar Investment Tax Credit (ITC) were co-leveraged with LIWP.

Total Project Cost	\$578,639
CSI Solar Thermal Rebate	\$44,404
SoCalGas/LADWP Rebates	\$19,200
Federal ITC	\$46,901
LIWP Incentive	\$117,533
Owner Portion	\$350,692

SCOPE OF WORK

- Envelope upgrades – cool roof & dual-pane windows
- High efficiency heat pumps & duct sealing
- Solar thermal system for domestic hot water (DHW)
- DHW pipe installation & low-flow fixtures
- Comprehensive LED lighting
- ENERGY STAR refrigerators

GHG SAVINGS & EQUIVALENCIES



29%
Reduced metric tons CO₂



22
Acres of U.S. forest



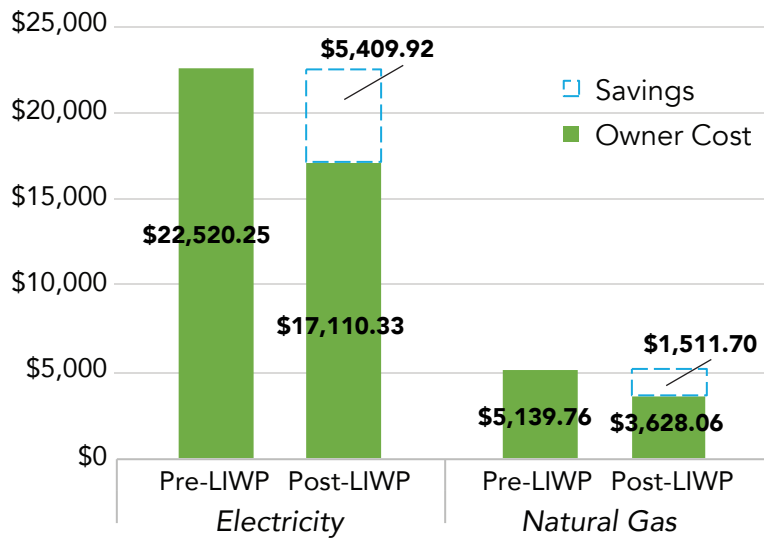
45,128
Average vehicle miles saved

“The LIWP technical assistance provided by AEA was both user friendly and highly cost-effective. LIWP created a win-win for this affordable housing project.”

—Oscar Alvarado, Century Housing

YEAR 1 REALIZED UTILITY SAVINGS (ACTUAL)

Benchmarking results for one year show significant reductions in GHG emissions, high energy savings, and overall cost savings.



25%
Cost Savings
\$6,921.62



29%
Energy Savings
250,107 kBTU

ELECTRICITY	kWh
Pre-LIWP	134,296
Post-LIWP	95,958
Electricity Savings	38,338
Savings Percentage	29%

NATURAL GAS	Therms
Pre-LIWP	4,184
Post-LIWP	2,991
Gas Savings	1,193
Savings Percentage	29%

VNEM as a means of expanding clean energy benefits & improving solar equity in the City of Los Angeles

The existing scope of work included several resident-benefitting measures including dual-pane windows, a cool roof to improve summertime comfort, in-unit LED lighting, high-efficiency ducted heat pumps, a duct sealing system, and upgraded ENERGY STAR refrigerators. While the Florence Avenue Villas retrofit is a clean energy success story, even greater benefits to residents could have been realized through the installation of a solar photovoltaic (PV) system. However, the Los Angeles Department of Water and Power (LADWP) does not yet offer virtual net energy metering (VNEM), a mechanism to allocate solar credits between tenant units and common area loads. Without VNEM or an alternative mechanism, Century Housing and others cannot further reduce their residents' energy cost burden and improve solar access and equity in the LADWP service area.

In a scenario where LADWP makes available VNEM or an alternative mechanism, the modeled savings for a solar PV system at Florence Avenue Villas could result in an additional annual energy cost savings of \$7,900 for the 20 households at the property, with 70% of solar production allocated to residents and 30% allocated to the common area -- which would result in energy usage offsets of 68% for residents and 75% for owners. For this reason, LIWP supports the implementation of an LADWP VNEM policy.

SCENARIO: VNEM MODELED SAVINGS

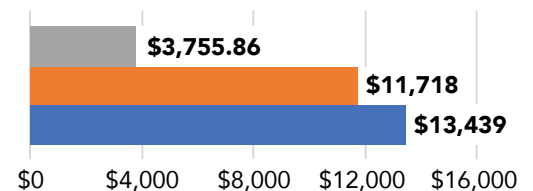
To illustrate this untapped potential, this VNEM scenario showcases modeled tenant solar benefits for Florence Avenue Villas:

67,000 kWh
Equivalent Annual
Energy Savings

\$7,900
Equivalent Cost Savings
for Tenants

TOTAL ESTIMATED ANNUAL RESIDENT ELECTRICITY COSTS

■ Post-LIWP, EE + Modeled PV
■ Post-LIWP, EE only ■ Pre-LIWP



Photos courtesy of Century Housing

"LIWP allows us to make energy saving upgrades to our buildings that we otherwise could not afford to do. These upgrades improve our residents' lives by lowering their monthly utility cost, and by allowing them to enjoy use of newer, more efficient appliances and household fixtures."

—Oscar Alvarado, Century Housing

