



## FINAL GRANT REPORT

Colorado Water Conservation Board  
Project#: POGG1, PDAA, 201900002032  
Energy & Water Conservation Program  
February 25, 2020

Mile High Youth Corps' Energy and Water Conservation (MHYC E&W) program is pleased to announce the completion of the Energy and Water Conservation project funded by the Colorado Water Conservation Board (CWCB). This report summarizes project outcomes and outlines the impact of CWCB's funding on the MHYC E&W program.

### Summarize the project and how it was completed:

This project identified two key tasks that expanded Mile High Youth Corps' capacity for community engagement and conservation. The project goals centered on customer outreach, performance of in-home energy and water audits, installation of low-flow and ultra-high efficient water measures, and thorough tracking of conservation metrics.

### Task 1: Outreach to 3,000 residents:

Through 2018 and 2019, the E&W program has utilized a wide range of outreach methods. We have focused on building "brand" and program awareness within the low-income communities that we serve.

### Methods:

#### Attendance of Local Events-

- Attendance of 16 community events in 2019. At these events, MHYC spoke directly to, and gathered contact information from, 570 individuals. The estimated attendance of these events is 7,750 local residents.
- Events were hosted by a number of community agencies- local Denver/Lakewood library branches, Denver Metro Health and Human Services, Sun Valley Kitchen, Denver Housing Authority, the Lakewood Earth Day Celebration and more.

#### Face to Face Canvassing-

- MHYC Corpsmembers (CMs) canvassed specific neighborhoods based on historic service data and estimated income levels. CMs spoke with residents face to face and provided informational materials to residents.
- CMs visited local businesses to post flyers and information. Targeted locations included libraries, coffee shops, restaurants, and service organizations.

### Outreach to Community Organizations-

- MHCY E&W became a member of the Southwest Denver Coalition. This organization facilitates monthly meetings between non-profits in SW Denver. This membership allows E&W to connect with other community-based agencies serving low-income populations.
- Outreach and materials provided to Health and Human Services departments- E&W staff and CMs set up information tables and distributed E&W materials to case management teams. We know these governmental agencies focus on residents who receive TANF, SNAP, WIC and other benefit recipients that qualify for E&W services.
- Low-Income Energy Assistance Program (LEAP)- in 2019 E&W connected with Colorado Department of Human Services to obtain a LEAP enrollment list. This list is used by CMs to conduct resident intake. CMs call residents directly to talk about E&W services and schedule service appointments. In 2019, CMs made over 9,000 calls to Denver area residents enrolled in LEAP.

### Handouts/Materials-

- Creation of cardstock handouts in both Spanish and English. These materials were utilized at community and MHCY events. (Attached to this report)
- Creation of door hangers in both Spanish and English. These materials were used in canvassing neighborhoods. (Attached to this report)

### Mass Media-

- In October 2019, E&W purchased a radio advertisement to highlight our program services. This ad was aired on B107.3 in Denver. This ad was estimated to reach over 700,000 listeners each month and is expected to run through February 2020.

### Conclusion:

We are confident that our diverse outreach methods reached 3,000 local residents through 2018 and 2019. These efforts have built marketing momentum for the E&W program, created new community partnerships and expanded our ability to serve low-income communities.

### Task 2: Energy and Water Audits and Upgrades:

This project estimated that MHCY E&W would conduct energy and water audits for 350 low-income households with 90% of these households qualifying for UHET toilet replacement (315 installs). Through 2018 and 2019 **MHCY E&W completed 357 in-home audits and installed 312 UHETs** in local income households using CWCB funds.

### Methods:

#### Intake/Scheduling-

- CM outreach directly to individuals on our LEAP enrollment list
- Resident inquiry directly to E&W offices

During scheduling, CMs qualify households based on income and benefit levels. Appointments are scheduled for teams of two Corpsmembers. In a typical day, one team can complete up to seven in-home audits or four toilet installations.

#### In-Home Energy and Water Audits:

CMs look for inefficiencies primarily in lighting and water fixtures-

- When a need is identified, CMs will replace old, inefficient lighting with new LED bulbs (6W Globe, 9W A Lamp, 10W BR30, 5W Candelabra, 11W, and 15W options).
- Inefficient water fixtures are also replaced with low-flow options (1.5gpm Showerheads, 1.0gpm bathroom aerators, 1.5gpm kitchen aerators).

#### Additional Assessments-

- CMs assess CO/smoke detectors and thermostats. These materials can be replaced based on need.
- HVAC systems, appliances and insulation types are recorded. If a household needs updating in these areas, E&W refers the household to third-party weatherization/energy efficiency agencies.
- CMs examine and qualify toilets in each home. Toilets that were manufactured before 1992 or that have a GPF greater than 1.6 will qualify for toilet replacement. We require waivers for toilet installation- these waivers can be left for homeowners to sign, or signed on the spot if a homeowner is present.

#### On-site Education, Behavioral Coaching-

At the end of each in-home audit, CMs review all material installations with the resident. CMs conduct a conservation survey to gather information on a household's historic energy and water consumption. Finally, CMs provide residents with best practices/techniques for the conservation of water and energy.

Through 2018 and 2019, **conservation education was provided to 744 households**; included in this figure is in-home audits funded by CWCBC.

#### UHE Toilet Installation:

In-home energy and water audits build our pool of candidates for UHET installation. CMs qualify toilets while conducting home audits. Qualifying homes are contacted and scheduled in the same manner as in-home audits. CMs conduct outreach and schedule teams for UHET replacements. Toilet waivers are also confirmed at this time.

- While on site, CMs confirm that toilets in a home are eligible for replacement (up to 2 per home). Waiver collected.
- CMs assess potential risks for installation including plastic sewer lines, leaking supply lines, rotting or unstable floorboards, and broken flanges.
- Old toilets are removed; new UHET 0.8gpf toilets are installed according to best practices as outlined in the International Building Code.
- CMs test the newly installed toilet and educate residents on how UHETs operate
- Old toilets are returned to E&W offices to be broken down and recycled

Conservation Totals for 2018-2019 (CWCB funded activities):

Key Highlights- 357 In-Home Energy and Water Audits, 312 Toilet Installations completed

Lifecycle Saving p/Household: \$2211 for Aerator/Bulb installs, \$876 for toilet install

Lifecycle Conservation- 86.8M gallons of water, 4.7M kWh, 176,610 Therms

|  |   |          |      |
|--|---|----------|------|
| INPUTS                                 |   |          |      |
|  | Energy/Water Audits Conducted                       |          | 357  |
|  |   | Installs |      |
|  |   | Replaces | #    |
|  | 1.5 GPM FIXED SHOWERHEAD                            | 2.5 GPM  | 154  |
|  |   |          |      |
|  | 1.5 GPM DUAL SPRAY SWIVEL KITCHEN AERATOR           | 2.2 GPM  | 224  |
|  |   |          |      |
|  | 1.0 GPM DUAL THREAD BATHROOM AERATOR - BUBBLE SPRAY | 2.2 GPM  | 112  |
|  |   |          |      |
|  | 0.5 GPM DUAL THREAD BATHROOM AERATOR - Needle SPRAY | 2.2 GPM  | 0    |
|  |   |          |      |
|  | 6 WATT DIMM ALAMP OMNI-DIRECT AMCG                  | 40 W     | 793  |
|  |   |          |      |
|  | 9 WATT DIMM ALAMP OMNI-DIRECT AMCG                  | 60 W     | 2578 |
|  |   |          |      |
|  | 11 WATT DIMM ALAMP OMNI-DIRECT AMCG                 | 75 W     | 82   |
|  |   |          |      |
|  | 10 WATT BR30 DIMMABLE - AMCG                        | 65 W     | 189  |
|  |   |          |      |
| 5 WATT CANDELABRA DIMM E12 BASE - AMCG | 40 W  | 411      |      |
|  |   |          |      |
| Niagara Stealth Toilet .08 GPF         | 3.5 GPF   | 312      |      |
|  |   |          |      |

| CONSERVATION TOTALS                                 |            |                |                         |                                  |                                      |   |                                 |  |                                    |  |  |   |
|---|------------|----------------|-------------------------|----------------------------------|--------------------------------------|---|---------------------------------|--|------------------------------------|--|--|---|
| Savings Calculator Month of _____                   | Total Cost | Annual Savings | Life Cycle Savings (\$) | Annual Water Conserved (gallons) | Life cycle Water Conserved (gallons) | Annual Energy Consumption Savings (kWh) | Life Cycle Energy Savings (kWh) | Annual Energy Consumption Savings (Therms) | Life Cycle Energy Savings (Therms) | Air Pollution Reduction Equivalence (acres of forest absorbing CO <sub>2</sub> ) | Life Cycle Air Pollution Reduction (lbs of CO <sub>2</sub> ) | Air Pollution Reduction Equivalence (number of cars removed from the road for a year) |
| 1.5 GPM FIXED SHOWERHEAD                            | \$477      | \$10,522       | \$105,217               | 1,517,670                        | 15,176,700                           |   |                                 | 9,702                                      | 97,020                             | 1,834  | 4,264,029  | 41  |
| 1.5 GPM DUAL SPRAY SWIVEL KITCHEN AERATOR           | \$415      | \$7,538        | \$75,383                | 1,374,770                        | 13,747,699                           |   |                                 | 4,260                                      | 42,597                             | 805  | 1,872,149  | 18  |
| 1.0 GPM DUAL THREAD BATHROOM AERATOR - BUBBLE SPRAY | \$67       | \$6,483        | \$64,826                | 1,178,374                        | 11,783,742                           |   |                                 | 3,699                                      | 36,992                             | 699  | 1,625,813  | 15  |
| 0.5 GPM DUAL THREAD BATHROOM AERATOR - Needle SPRAY | \$0        | \$0            | \$0                     | -                                | -                                    |   |                                 | -  | -                                  | 0  | 0  | 0   |
| 6 WATT DIMM ALAMP OMNI-DIRECT AMCG                  | \$1,228    | \$5,880        | \$76,444                |                                  |                                      | 50,524                                  | 673,659                         |  |                                    | 435  | 1,010,489  | 7   |
| 9 WATT DIMM ALAMP OMNI-DIRECT AMCG                  | \$6,057    | \$28,686       | \$382,483               |                                  |                                      | 246,477                                 | 3,286,364                       |  |                                    | 2,120  | 4,929,545  | 35  |
| 11 WATT DIMM ALAMP OMNI-DIRECT AMCG                 | \$242      | \$1,147        | \$14,908                |                                  |                                      | 9,853                                   | 131,376                         |  |                                    | 85   | 197,064  | 1   |
| 10 WATT BR30 DIMMABLE - AMCG                        | \$653      | \$2,271        | \$29,522                |                                  |                                      | 19,512                                  | 260,164                         |  |                                    | 168  | 390,246  | 3   |
| 5 WATT CANDELABRA DIMM E12 BASE - AMCG              | \$1,540    | \$3,136        | \$40,764                |                                  |                                      | 26,942                                  | 359,231                         |  |                                    | 232  | 538,847  | 4   |
| Niagara Stealth Toilet .08 GPF                      | \$38,064   | \$19,002       | \$190,020               | 4,612,140                        | 46,121,400                           |   |                                 |  |                                    | 0  | 0  | 0   |
| Totals  | \$48,744   | \$84,665       | \$979,567               | 8,682,954                        | 86,829,540                           | 353,310                                 | 4,710,794                       | 17,661                                     | 176,610                            | 6,378  | 14,828,181   | 124   |
| Avg. Per Energy Home (Aerators, Bulbs Only)         | \$29.91    | \$183.93       | \$2,211.62              | 11,403                           | 114,028                              | 990                                     | 13,196                          | 49   | 495                                | 18   | 41,536   | 0   |
| Avg. Per Water Home (Toilets Only)                  | \$175      | \$88           | \$876                   | 21,254                           | 212,541                              |   |                                 |  |                                    | 0  | 0  | 0   |
|   | Total Cost | Annual Savings | Life Cycle Savings (\$) | Annual Water Conserved (gallons) | Life cycle Water Conserved (gallons) | Annual Energy Consumption Savings (kWh) | Life Cycle Energy Savings (kWh) | Annual Energy Consumption Savings (Therms) | Life Cycle Energy Savings (Therms) | Air Pollution Reduction Equivalence (acres of forest absorbing CO <sub>2</sub> ) | Life Cycle Air Pollution Reduction (lbs of CO <sub>2</sub> ) | Air Pollution Reduction Equivalence (number of cars removed from the road for a year) |

**Describe any obstacles encountered, and how these obstacles were overcome:**

In general, this project operated smoothly through 2018 and 2019. E&W made minor modifications to our operations to overcome obstacles and increase efficiencies.

**Workflow:**

Initially we had scheduled appointments to combine in-home audits and installation for the same visit. We learned that this coupling of service types actually leads to a decrease in productivity. Both audits and toilet installation are more efficient if performed as “batch” services- that is, teams are dedicated to energy audits or installations, but not both during service visits.

Reasons for this modification include-

- Incomplete/invalid waiver paperwork
- “In the field” material shortages/ restocking between visits
- Increased service times per visit leading to missed appointments later in the day
- Generally lower production per team per day as compared to “batch” service visits

**Customer Scheduling**

The E&W team has worked at length to attract customers to our services. Typically, Corpsmembers call customers directly to schedule appointments. To complement these efforts, the program is exploring new options for customer intake. We believe that expanding our presence into community coalitions and promoting our services to health and human services agencies will allow for new channels into target population groups. We continue to explore marketing opportunities using mass media and in May, the MHYC website will feature an intake page specific to E&W services.

In addition, we have become more intentional about our outreach to diverse population centers, specifically, LatinX communities in the Denver Metro area. Our service opportunities with these demographic groups have not yet been fully explored. We worked to overcome this gap in services by hiring three fluent Spanish-speaking staff and CMs in the past three months and translating all marketing materials into Spanish.

**Confirm that all matching commitments have been fulfilled:**

Total CWCB funding for this project was \$99,630.80. Through 2018-2019 we tracked closely with initial estimates on funding categories. Below is the final overview of spending levels per spending category.

**Project Name:** Energy & Water Conservation Program  
**Grantee:** Year One, Inc dba Mile High Youth Corps  
**Address:** 6740 E Colfax Ave, Denver, CO 80220  
**Phone:** 303-433-1206  
**PO Number:** POGG1, PDAA, 201900002032  
**Full Grant Amount:** \$ 99,964.00  
**Date of Invoice:** 2/18/2020

| TASK         | Description                        | Total Budget Funds  | Previously Invoiced | Current Invoice    | Remaining Total | Percent Complete |
|--------------|------------------------------------|---------------------|---------------------|--------------------|-----------------|------------------|
| 1            | Outreach Materials (Printing)      | \$ 400.00           |                     |                    | \$ 400.00       | 0%               |
| 2            | Energy & Water Audits and Upgrades | \$ 62,860.00        | \$60,910.00         | \$ 4,087.00        | \$ (2,137.00)   | 103%             |
| 2            | Materials                          | \$ 33,560.80        | \$30,880.60         | \$ 1,506.72        | \$ 1,173.48     | 97%              |
| --           | Indirect Fee (4%)                  | \$ 3,143.00         | \$2,438.50          | \$ 140.98          | \$ 563.52       | 82%              |
| <b>Total</b> |                                    | <b>\$ 99,963.80</b> | <b>\$94,229.10</b>  | <b>\$ 5,734.70</b> | <b>\$ 0.00</b>  | <b>100%</b>      |

In addition to CWCB funding, MHYC E&W leveraged Community First Foundation Funds to provide outreach and additional energy retrofit activities in the Denver Metro area. Total **matching funds from Community First Foundation totaled \$24,000** . This funding ran concurrent with CWCB funding.

| Task Description                   | Grant Funding   | Grant Spending  | Match Funding   | Match           | Total Project Approved |
|------------------------------------|-----------------|-----------------|-----------------|-----------------|------------------------|
| Outreach Materials (Printing)      | \$400           |                 | \$100           |                 | \$500                  |
| Energy & Water Audits and Upgrades | \$62,860        | \$64,997        | \$15,715        | \$15,200        | \$78,575               |
| Materials                          | \$33,561        | \$32,387        | \$8,390         | \$7,284         | \$41,951               |
| Indirect Fee (4%)                  | \$3,143         | \$2,579         |                 | \$1,520         | \$3,143                |
| <b>Total</b>                       | <b>\$99,964</b> | <b>\$99,964</b> | <b>\$24,205</b> | <b>\$24,004</b> | <b>\$124,169</b>       |

**Include photographs, summaries of meetings, and engineering reports/designs**

Included in this packet are images of MHYC E&W activities in the community- both outreach events and energy and water audits. We have also included samples of outreach materials that were created for community outreach.



# MILE HIGH YOUTH CORPS



Energy and Water Conservation

Client Impact Story

Date: 2/6/19

Project: CWCB

Corpsmembers: Tom, Vic, Lillian

Client Name: Alice Lux

Address: 1211 S. Grant St.

RENTER/**OWNER**

Alice was referred to MHYC by her loving friend and neighbor, Randy. She and her daughter have lived in their home since 1965, and the house itself is over 100 years old. They have seen firsthand how the city of Denver has changed over the years, Alice raised her daughter back when the neighborhood had homes similar to hers and the local factories provided employment to her community. Now, the neighborhood has completely changed and the homes that use to line Alice's streets have been turned into high rise apartment complexes. She has received multiple offers from different development groups for her home. With housing property rising and new city wide energy and water codes, Alice and her daughter have found it hard to adapt their century old home to meet the city's demands. Though, they have no computer, dishwasher, or dryer, they have found it hard to keep on track paying for their utility bills. Alice has worked with multiple contractors for years to update her plumbing system, leaving them with a difficult plumbing situation. Alice and her daughter, who both receive aid for disabilities, have found it hard to cope without a properly functioning toilet. Today we were able to go in and take some of the stress off of them by providing them with an ADA Ultra High Efficient Toilet. From the time we showed up to their door to by the time we left, Alice was nothing but radiant in her appreciation and kindness for our services, she even thanked us with a box of chocolates for helping her live a more comfortable life.







Top (L): CM installing low-flow showerhead  
 Top (R): CM prepping for porcelain recycling  
 Bottom (L): CM installing ultra, high-efficiency toilet  
 Bottom (R): CM engaging in client education



# FREE ENERGY & WATER SERVICES

(for income qualified families)



## SERVICES INCLUDE:

Free energy efficient LED light bulbs

Programmable thermostats

High-efficiency showerheads  
and faucet aerators



**FOR INFO OR TO SCHEDULE AN  
APPOINTMENT, PLEASE CONTACT**

720.974.0500, Option 2 • [info@mhyc.net](mailto:info@mhyc.net)  
[milehighyouthcorps.org](http://milehighyouthcorps.org)

These services are provided free of charge through  
partnerships with the City of Lakewood, the City and  
County of Denver, the Community First Foundation,  
and Colorado Water Conservation Board.



**MILE HIGH  
YOUTH CORPS**

# SERVICIOS GRATIS DE ENERGÍA Y AGUA CONSERVACIÓN

(para familias calificadas)



Servicios Incluyen:

Bombillas eficientes de energía

Termostatos programables

Duchas de bajo flujo y  
aireadores de grifos

PARA MÁS INFORMACIÓN O PARA  
HACER UNA CITA, CONTACTO

720.974.0500, Opción 2 • [info@mhyc.net](mailto:info@mhyc.net)  
[milehighyouthcorps.org](http://milehighyouthcorps.org)

Estos servicios son gratis de cargo por nuestra  
asociación con el equipo de Colorado Agua  
Conservación y la ciudad de Lake Wood.



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