

May 9th, 2025

To: Jackie Carano, Regional Water Plan Grant Manager

1313 Sherman St., Room 718

Denver, CO 80203

Project#: POGG1 2024-2529

Project Name: Mile High Youth Corps' Single-Family Energy & Water Audits and Installs

Dear Jackie,

Mile High Youth Corps' Energy and Water Conservation (E&W) program is pleased to announce that E&W has completed project tasks representing 90% of funding received from the Colorado Water Conservation Board for MHYC's Single Family Energy & Water Audits and Installs project. 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's scope of work outlined two key tasks that expanded Mile High Youth Corps' capacity for in-home conservation services, reducing water demand within low-income households and MHYC Corpsmember (CM) development. To achieve project goals, the E&W team conducted customer outreach, performed in-home energy and water audits, installed low-flow and ultra-high efficiency water materials, and tracked and organized data across the project.

TASK 1: WATER and ENERGY AUDITS AND INSTALLS:

From Fall 2023 through Spring 2025, the E&W program has completed in-home service visits across the Front Range to income-qualifying households (residents living at or below 80% of area median income). These service visits include an audit of the home's current energy and water fixtures, measurement of current efficiency, replacement of materials deemed inefficient, and conservation-based behavior coaching. In addition, the Corpsmembers completing service visits provide education about additional community resources to expand client knowledge about other efficiency programs and financial assistance available to them.

This project estimated that MHYC E&W would conduct energy and water audits for 200 low-income households with CWCB funding. These service visits contain 'day-of' installation of basic water saving devices (bathroom, aerators, kitchen aerators, showerheads) and the identification of toilets qualifying for replacement. From Q4 2023 through April 2025, **MHYC E&W has completed 256 in-home audits with CWCB funding**, outpacing initial project estimates for total number of home audits. The resulting change in budget spenddown is presented on page 6.

Methodology:

Intake/ Scheduling:

The E&W team conducts regular outreach to communities and potential clients. Our outreach activities combine a variety of methods and channels for communication. During scheduling, CMs qualify households based on income and benefit levels.

Direct Customer Contact:

- CM conduct outreach directly to individuals from the Low-Income Energy Assistance Program (LEAP) contact list.
 - a. Each year, E&W staff coordinate with the Colorado LEAP office to request a list of contacts for individuals enrolled in LEAP benefits from the previous enrollment period. The list is filtered by zip code

and household type. LEAP recipients qualify for E&W services based on income verification completed by LEAP.

- b. CMs call residents directly to educate residents on E&W services, water efficiency, and potential household savings. CMs schedule service appointments. Q4 2023- current, CMs made an estimated 2,900 calls to residents to schedule CWCB funded appointments.
- Resident inquiry directly to E&W offices
 - a. Residents are encouraged to contact our scheduling team through our phone lines or through our website contact page (<https://www.milehighyouthcorps.org/free-install-services/>)

Community Outreach:

Through 2023 and 2024, E&W increased community outreach to historically underserved neighborhoods, particularly within Denver. We have leveraged our community education program (Promotoras Climaticas) to highlight E&W services alongside other community resources offered by the program. The Promotoras team is supported by Denver's Office of Climate Action, Sustainability and Resiliency. Community-based activities include:

Attendance of Local Events-

- Tabling events or resource fairs; events hosted by community agencies and municipalities. Examples: local Denver/Lakewood libraries, Denver Metro Health and Human Services, registered neighborhood associations, public school resource fairs. E&W also prioritized connections to other local nonprofits and community organizations through Promotoras.

Face to Face Canvassing-

- MHYC Corpsmembers (CMs) canvassed specific underserved 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.

Handouts/Materials-

- Creation of cardstock handouts in both Spanish and English. These materials were utilized at community and MHYC events. (Attached to this report)

Mass Media-

- Social media- MHYC's social media team updates accounts to promote E&W services. These posts reach an estimated 6,000 individuals through MHYC's social media platforms

In-Home Energy and Water Audits:

Service visits are scheduled and completed by teams of two Corpsmembers. In a typical day, one team can complete up to six in-home audits or four toilet installations.

Audit and installation of low-flow fixtures:

- Showerheads (SH)- Check flowrate using available markings or measure volume over 15 seconds, replace if existing SH flow greater than 2.0 GPM, corroded, or poorly functioning
- Bathroom aerators (BA) - Check flowrate using available markings or measure volume over 15 seconds, replace existing BA if flow is greater than 1.5 GPM, corroded, or poorly functioning
- Kitchen Aerator (KA) - Check flowrate using available markings or measure volume over 15 seconds, replace if existing KA flow is greater than 2.0 GPM, corroded, or poorly functioning

- Toilet - Check flush volume using available markings or measure approximate volume using the following formula: $V = W_{Tank} \times L_{Tank} \times \Delta H_{Flush}$, recommend replacement if greater than 1.6 GPF, or manufactured before 2010, or toilet does not meet accessibility needs of client (i.e. install an ADA toilet to replace a shorter or smaller unit for mobility-challenged clients), or poorly functioning
 - We require waivers to be signed by the property owner before replacing toilet- waivers can be left for renters to submit to homeowners for signature or signed during the initial home visit if a property owner is present.

Audit and upgrade of energy using fixtures (Energy upgrades provided to households through leveraged funding)

- LEDs - Replace all incandescent and CFL bulbs greater than 20W, burnt out or missing
- Thermostat - Replace any non-programmable thermostat. If programmable thermostat already present, check programmed settings for set points and times

Additional Assessments: (provided to households through leveraged funding)

- 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 could benefit from upgrades to these items, E&W refers the household to third-party weatherization/energy efficiency agencies.

On-site Education, Behavioral Coaching:

At the end of each in-home audit, CMs review all material installations with the residents. CMs conduct a conservation survey to gather information on a household's historic energy and water consumption. During this conversation, CMs provide residents with the best practices/techniques for the conservation of water and energy and make additional recommendations for 3rd party resources (e.g. Energy Resource Center, Habitat for Humanity, LEAP)

Through 2023-current, **conservation education was provided to 189 households funded by CWCB. (EOC Client Education)**

TASK 2: TOILET INSTALLS:

During in-home audits, E&W CMs qualify existing toilets within the household. For households using old or inefficient toilets, CMs will note the need for replacement and schedule a follow-up appointment for ultra-high efficiency toilet replacement. Toilets will be considered old or inefficient if they were manufactured before 2010 or use more than 1.6 gallons per flush.

This project estimated a total of 300 toilets replaced in low-income qualified households with CWCB funding (total of 410 with matched funds). From Q3 of 2023 through current, **MHYC E&W installed 237 ultra-high efficiency toilets (CWCB funding)**, and a total of 360 toilets (including matched funds)

UHE Toilet Installation:

In-home energy and water audits build our pool of candidates for UHET installation. CMs qualify toilets while conducting home audits. Toilet installations are scheduled in the same manner as in-home audits; CMs conduct outreach and schedule teams for UHET replacements. Toilet waivers are also confirmed to have been completed during the scheduling conversation.

- 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.
- 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. It is estimated that E&W processed 21,330 lbs. of porcelain for the 237 toilets removed from homes.

Note: E&W performed home audits through other funding partners; for partners that do not fund toilet installations, E&W used these audits as additional qualifying visits for CWCB funded toilet installs. This process was most used for homes audited with funding from the Denver Office of Non-profit Engagement (DONE). DONE funding does not support the replacement of toilets. CWCB funding supported the replacement of toilets in these homes, after an audit is completed with DONE funding.

Conservation Totals for Q4 2023-current day (CWCB funded activities):

Key Highlights- 256 Home Water and Energy Audits, 237 Toilet Installations completed

Lifecycle Saving p/Household: average \$941 (water only); total (inc. energy savings): \$3,018

Lifecycle Conservation- 45.4M gallons of water, 4.25M kWh, 119,879 Therms

Conservation: Materials Installed:

	Replaces	Totals	2023	2024	2025	Total Service Visits (CWCB)
<i>Total Homes Serviced</i>		284	23	146	115	445
<i>Homes Receiving Toilets</i>		189	13	128	48	
<i>Homes w/ Toilet Only</i>		31	3	16	12	
<i>1.5 GPM FIXED SHOWERHEAD</i>	<i>2.0 GPM</i>	105	6	54	45	
<i>1.5 GPM DUAL SPRAY SWIVEL KITCHEN AERATOR</i>	<i>2.0 GPM</i>	50	10	18	22	
<i>1.0 GPM DUAL THREAD BATHROOM AERATOR - BUBBLE SPRAY</i>	<i>2.0 GPM</i>	124	19	53	52	
<i>0.5 GPM DUAL THREAD BATHROOM AERATOR - Needle SPRAY</i>	<i>2.0 GPM</i>	0	0	0	0	
<i>6 WATT DIMM ALAMP OMNI-DIRECT AMCG</i>	<i>40 W</i>	337	22	178	137	
<i>9 WATT DIMM ALAMP OMNI-DIRECT AMCG</i>	<i>60 W</i>	1528	99	810	619	
<i>11 WATT DIMM ALAMP OMNI-DIRECT AMCG</i>	<i>75 W</i>	87	0	58	29	
<i>10 WATT BR30 DIMMABLE - AMCG</i>	<i>65 W</i>	38	0	26	12	
<i>5 WATT CANDELABRA DIMM E12 BASE - AMCG</i>	<i>40 W</i>	320	24	187	109	
<i>Programable Thermostat</i>		33	2	15	16	
<i>Niagara Stealth Toilet .08 GPF</i>	<i>1.6 GPF</i>	237	19	166	52	

Full Conservation Table: document attached to Report Submission email

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

Project Match: E&W had budgeted for match funds from a Community Development grant when this project was proposed. Ultimately this grant was not realized, eliminating an estimated 30 additional home audits and 20 toilet installations. The E&W has worked through this by taking on additional project work through other match partners, including EOC and City of Westminster.

Project Workflow: Compared to the previous round of CWCB funding for E&W, the E&W team found it easier to schedule and keep pace with home audits. As a result, the team was able to complete 128% of proposed home audits. However, the opportunity cost of completing home audits versus toilet installs means the team has trailed total toilet installs for this project.

3. Confirm that all matching commitments have been fulfilled:

Total CWCB funding for this project was \$183,201. Through Q1 of 2025, E&W utilized a total of \$171,328.84 (93.5% of allocated funds).

Task	Description	Total Budget/Grant Funds	Previously Invoiced	Current Reimbursement Request	Remaining Total	Percent Complete
1	Water and Energy Audits	\$61,493.00	\$70,030.45	\$16,483.70	-\$25,021.15	140.7%
2	Toilet Installs	\$121,708.50	\$78,898.86	\$6,310.22	\$36,499.42	70.0%
	TOTALS	\$183,201.50	\$148,534.92	\$22,793.92	\$11,872.66	93.5%

As seen in the table above, Task 1. Water and Energy Audits budget line has been outspent compared to the proposal budget. E&W has completed more audits than initially proposed (256 actual vs. 200 estimated).

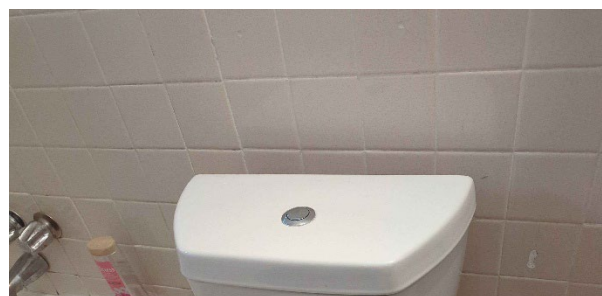
Relative to Task 1; Task 2: Toilet Installations have trailed vs. proposed installations. (237 actual vs 300 estimated).

Matching funds included other single-family and multi-family energy and water efficiency partners- Denver Office of Nonprofit Engagement, City of Westminster, Aurora Water, and Energy Outreach Colorado. **Total match funding for this project was estimated at \$208,612. Through Q1 of 2025, E&W has realized total match of \$185,602.38 (88.9% of total match).** While this number currently trails total projected match, it is representative of 108.33% of total CWCB funding (match= \$185,602.38, CWCB funding=\$171,328.84; or 52% match for total project funding)

Matching Funds Tracking Sheet							
Task	Description	Total Budget/Match Funds	Previously Invoiced Match	Current Invoice Match	Total Match to Date	Remaining Total	Match Type (Cash or In-Kind)
1	Water and Energy Audits	\$148,185.00	\$126,109.33	\$9,854.00	\$135,963.33	\$12,221.67	cash
2	Toilet Installs	\$60,427.05	\$48,669.05	\$970.00	\$49,639.05	\$10,788.00	cash
	TOTALS	\$208,612.05	\$174,778.38	\$10,824.00	\$185,602.38	\$23,009.67	cash

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

Included in this packet are images of MHYC E&W activities over the course of the project. We have also included samples of outreach materials that were created for community outreach.



Clockwise from below: removal of old toilet;
CMs inspecting, setting flange and wax; fully
installed Niagara Stealth 0.8gpf toilet;
breakdown of porcelain for recycling;
Corpsmembers from 2025 featured.



FREE WATER + ENERGY SERVICES LOWER YOUR UTILITY BILLS!

Free Home Assessments and Install of new:

Free High-Efficiency toilets

Free High-Efficiency showerheads
and faucet aerators

Free Programmable thermostats

Carbon monoxide/Smoke Detectors

Free Energy efficient LED light bulbs

MORE INFO 720.974.0500, Option 2 • info@mhyc.net

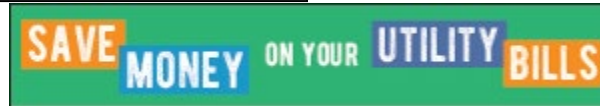


**MILE HIGH
YOUTH CORPS**

milehighyouthcorps.org



Flyers/card stock handout
(Spanish version not shown); used
in canvassing and at community
events



Digital ad banners ran Fall 2023, Jan 2024;
linked "click through" function to MHYC EW
services page.

Conservation Totals 2022														
	Total Homes Served	Average Savings Per Household	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 ₂)	Life Cycle Air Pollution Reduction (lbs of CO ₂)	Air Pollution Reduction Equivalence (number of cars removed from the road for a year)	Amount of Fossil Fuel Energy Offset (Annual Consumption Savings that were coming from fossil fuels; kWh)
2022	284	171	43,348	730,907	4,540,308	45,403,080	221,856	4,255,860	11,988	119,879	4,288	8,247,924	56	150,353

RESULTS

CLAIMS PER INSTALLED FOOTING

REGISTRATION TOTALS

Materials	Specifications	Warranty	Lifecycle	Notes
1.5 GPM FIXED SHOWERHEAD - ALL	http://www.amconservationgroup.com/wp-content/uploads/2014/09/Earth-Showerheads-Spec-Sheet_R2.pdf			
1.5 GPM DUAL SPRAY SWIVEL KITCHEN AERATOR	www.amconservationgroup.com/wp-content/uploads/2014/10/N3115-P-Dual-Spray-Swivel-Aerators-Spec-Sheet.pdf			
1.0 GPM DUAL THREAD BATHROOM AERATOR - BUBBLE SPRAY	www.amconservationgroup.com/wp-content/uploads/2014/10/N3210B-PC-N3104-PC-Pressure-Compensated-Aerators-Spec-Sheet.pdf			
SMOKE & CO COMBINATION DETECTOR - FIRST ALERT	www.firstalert.com/products/weatherization-products/combination-smoke-detector-fire-alarm-carbon-monoxide-detector/?variation_id=4971			
THERMOSTAT NIAGARA 5/2 SETTING	http://www.amconservationgroup.com/products/energy-efficient-products/5-2-eco-ig-programmable-thermostat/			
6 WATT DIMM ALAMP OMNI-DIRECT AMCG	http://www.amconservationgroup.com/wp-content/uploads/2015/06/6-watt-G25-Globe-LED-Spec-Sheet.pdf			
9 WATT DIMM ALAMP OMNI-DIRECT AMCG (60 Watt Equiv)	http://www.amconservationgroup.com/wp-content/uploads/2016/08/L609A927KENCL-LED-Spec-Sheet.pdf			
11 WATT DIMM ALAMP OMNI-DIRECT AMCG (75 Watt Equiv)	http://www.amconservationgroup.com/wp-content/uploads/2016/05/L611A1927K75WEQ-LED-Spec-Sheet.pdf			
10 WATT BR30 DIMMABLE - TCP	http://www.amconservationgroup.com/wp-content/uploads/2014/11/tcp-led12br30d27k-spec-1.pdf			
5 WATT CANDELABRA DIMM E12 BASE - AMCG	http://www.amconservationgroup.com/wp-content/uploads/2015/06/L05CDE2700K.pdf			
Niagara Stealth Toilet .08 GPF	https://niagaracorp.com/stealth/			
Niagara Flapperless Toilet 1.28 GPF	https://niagaracorp.com/ecologic/			
Toto toilet 1.28 GPF (DHA)	Dont have model confirmed			