

HISPANIC

AUSTIN LEADERSHIP

Environmental Team



Class of 2010



Greater Austin Hispanic
Chamber of Commerce
Expanding Business Culture

Hispanic Austin Leadership (HAL)
Class of 2010

Environmental Team

East Austin Family – Home Energy Efficiency
Upgrades and Education on Energy and Water
Conservation

Paul Betancourt – Project Manager
Edward Olmeda – Marketing/Communications/Finance
Gabriela Garcia – Research/At-Large

April 2010

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Executive Summary

The Environmental Team of the 2010 HAL class set out to select a family that owned and lived in a home in East Austin whose home was in need of energy efficient upgrades and weatherization. The team was also looking to be able to educate the family on environmental issues such as energy and water consumption and how they could help the environment while lowering their utility bills. The family selected was Paco and Carolina Guajardo and their three children (Francisco, 7 and twins Isaac and Gabriel, 2) who live in a 1970's two bedroom, one bath style bungalow without central heat and air.

The Environmental Team partnered with Green Collar Operations, LLC, the #1 provider of energy efficiency services in Central Texas, to administer an energy audit and proceed to weatherize the home. The family was given information about all the conservation and energy efficient programs the City of Austin has to offer by the environmental team. Prior to the weatherization, the family was paying average electric bills of \$200-\$400 a month for this tiny home. Although we do not have a current utility billing cycle to see actual dollar savings, we have reliable estimates of the yearly cost savings the weatherization, toilet and window air conditioning replacement will result in for the family.

Project Details

- Team Members

1. Paul Betancourt – Project Manager.
 - Paul coordinated the project from idea generation to execution in ten business days using email and conference calls. A press release was developed and distributed to all media sources of the Greater Austin Hispanic Chamber of Commerce (GAHCC).
2. Edward Olmeda – Marketing/Communications/Finance Officer.
 - Edward developed contacts with all of our business partners in this venture and was able to acquire the commitment of Green Collar Operations to provide services pro bono to this project. He also tracked and maintained the budget.
3. Gabriela Garcia – Research/At Large Officer.
 - Gabriela developed the contact with the family and coordinated communication with the family.

- Schedule and Events

1. March 17th – Edward communicated with William Sparks of Austin Energy who has generously offered his guidance and assistance with our project.
2. March 19th – Decision to select a family and home occurred. William put Edward in touch with Andrew Ewig, President of Green Collar Operations
3. March 21st – Family accepted offer of work and education material
4. March 22nd – Andrew agreed to put Green Collar's resources to work on the home pro bono. Green Collar to perform energy audit and weatherization on the home.
5. March 23rd – Scheduled work to begin on the home for Friday, March 26th at 8:30am.

6. March 26th – Green Collar and members of the Environment team arrive at the home of Paco and Carolina Guajardo to begin the audit and work at 8:30am.
 - Before and after photos were taken by Edward
 - Gabriela assisted the family in replacing a dozen light bulbs with compact fluorescent (CFL) light bulbs.
 - The Green Collar crew performed the following work on the home:
 - Sealed all plumbing penetrations in the home (there was some plumbing areas where you could see through the house)
 - Weather-stripped all doors and windows
 - Caulked and sealed windows in the frames (glass panes were rattling in the wood frames because the old seals had failed)
 - Door sweeps were replaced
 - Attic insulation was added
 - Attic access was weather-sealed
 - Damage and holes in living room wall where faux fireplace existed was repaired with Solar Board and sealed.
 - Because of the age of the house, the condition of the wood window frames and wood floors, there was no way to pressurize the home and obtain an initial reading via the energy audit process.
 - Lunch was brought to the home by Edward and Gabriela for the family and Green Collar crew.
 - Work ended at the home by 2pm.
7. March 29th – Paul informed the family about the City of Austin's rebate program on the purchase of a High Efficiency Toilet (HET) as well as other water conservation programs all found on the City of Austin's website. Paul and Gabriela took the family to purchase and install an HET in their home.
8. March 30th – Gabriela worked with the family on their window air conditioning units that were greater than 11 years old. A new energy efficient window unit was purchased and installed replacing one of three older inefficient models.

- Impact of the Project

Savings to the family:

1. Estimated kilowatt hour (kWh) savings from weatherization alone: 404.1 kWh per measurements from Green Collar based on the TX Public Utility Commission's (PUC) deemed savings calculator.
2. Because the home could not be pressurized, the initial reading for air infiltration is not available. However, based on Green Collar's history of work done on over 2,500 homes where this type of work has occurred, they estimate that this home would have experienced a 1,200 to 1,800 air infiltration reduction in Cubic Feet per Minute at a pressure of 50 Pascals
3. Attic insulation and associated estimated kWh savings are based on TX PUC data and is 616.41. The insulation rating in the attic originally was equivalent to an R-2. Green Collar insulated the attic to an R-38 rating.
4. Installation of the HET reduced water usage from 5 gallons per flush to 1.6 gallons. The largest use of household water is to flush the toilet. Based on a water study done by the Toronto Works and Emergency Services, the average person flushes a toilet in their home 5 times per day. At 5 flushes with 5 family members, the old toilet was using 125 gallons of household water a day or 45,625 gallons per year. The new HET reduced that to 40 gallons per day or 14,600 per year. Using the City of Austin's water usage rate of \$6.15 per 1,000 gallons – this HET translates into a \$190 per year savings. The average lifespan of a toilet is 25 years, thus translating into a savings of \$4,750 barring inflation and rate increases.
5. Estimated kWh from 12 CFLs: The bulbs that were replaced were standard 60 Watt incandescent bulbs. The CFLs all use 13 Watts and output equivalent lighting. Each 60 Watt bulb lasts approx. 1,500 hours and uses 90 kWh over its lifetime. Each CFL lasts 5,000 hours (3.3 times as long) and uses 65 kWh over its lifetime. Assuming they are on 6 hours a day, which equals 2,190 hours. The wattage reduction is 552kwh. Multiply by the wattage reduction you come up with a reduction of 1208 kWh per year.
6. Installation for the AC unit resulted in 717kWh reduction.

Savings to the Environment

1. On the next page is the results of the Emission Reduction calculations provided by William Sparks of Austin Energy using data from Green Collar Operations and our CFL kWh and AC unit kWh estimated calculations (this does not include water savings from the HET): 2,945 kWh saving



Environmental Savings Summary

GreenChoice Subscription 2,945 annual kWh usage

t

Air Pollution	Saved this much Carbon Dioxide (CO ₂) from being emitted:	<u>1,732</u> Kg.	or	<u>3,810</u> pounds	or	<u>1.9</u> tons
	Saved this much Sulfur Dioxide (SO ₂) from being emitted:	<u>1</u> Kg.	or	<u>2</u> pounds	or	<u>0.00</u> tons
	Saved this much Nitrogen Oxides (NOX) from being emitted:	<u>1</u> Kg.	or	<u>3</u> pounds	or	<u>0.00</u> tons
	Saved this much Volatile Organic Compounds (VOC) from being emitted:	<u>0.04</u> Kg.	or	<u>0.09</u> pounds		
	Saved this much Total Suspended Particulates (TSP) from being emitted:	<u>0.1</u> Kg.	or	<u>0.3</u> pounds		
	Saved this much Carbon Monoxide (CO) from being emitted:	<u>1</u> Kg.	or	<u>2</u> pounds	or	<u>0.00</u> tons
Total		<u>1,735</u>		<u>3,817</u>		<u>1.9</u>
Toxic Metals Pollution	Saved this much Mercury (Hg) from being emitted:	<u>23.2</u> mg.	or	<u>0.00</u> pounds	or	<u>0.0008</u> ounces of Hg
	Saved this much Cadmium (Cd) from being emitted:	<u>1.1</u> mg.	or	<u>0.00</u> pounds	or	<u>0.00004</u> ounces of Cd
	Saved this much Lead (Pb) from being emitted:	<u>34.4</u> mg.	or	<u>0.00</u> pounds	or	<u>0.0012</u> ounces of Pb

These projects effectively planted



65

trees or 3.3 acres of forest in Austin's parks.

These projects effectively removed



3,344

Vehicle Miles or 0.4 cars from Austin's busy roadways.

These projects effectively provided electricity to



0.2

average homes in Austin for a year.

Source of Emissions data: "Delta Emissions", a combined effort of Lauer, Muraya, and Breeze (rev.1/18/07). Avg kWh/home updated by C Harwell 2007-12-20.
Source of Metals, trees, vehicles and homes data: "Pollutant Emission Rates for the City of Austin Electric Utility" (rev. 02/20/03)."

Water conservation at generation power plant (evaporation only)

1,325 Gallons

Water conservation if air conditioned and cooling tower exists

2,303 Gallons costing \$ 22

Source of water conservation data: Bill Hoffman City of Austin Water and Waste Water Utility (rev. 06/20/07).

- Community Resources Involved

1. Austin Energy, www.austinenergy.com: William Sparks, william.sparks@austinenergy.com
2. Green Collar Operations, www.greencollaroperations.com: Andrew Ewig, President, andrew.greenco@gmail.com
3. Paco and Carolina Guajardo and their sons, Fransisco (7) and twins, Isaac and Gabriel (2). 1016 Spence Street, Austin, TX. 78702

Project Budget

Our team decided to work this in as minimal manner as possible. Our budget paid for lunch for the crew while weatherizing the house as well as the energy efficient window A/C unit.

Budget: \$500.00

Expenses

Lunch: \$57.53

AC Window Unit: \$167.79

Pro-Bono

\$1,500.00

Total project expense vs. Budget:

\$ 274.68 (under budget)

Total Project expense vs. Pro-bono vs. Budget:

\$1,274.68 (under budget)

*(no expense on the toilet due to rebate from Austin Energy)

References:

1. Austin Energy: www.austinenergy.com – William Sparks
2. Green Collar operations: www.greencollaroperations.com – Andrew Ewig
3. Definition of a Pascal: [http://en.wikipedia.org/wiki/Pascal_\(unit\)](http://en.wikipedia.org/wiki/Pascal_(unit))
4. Toronto Works and Emergency Services study:
<http://www.toronto.ca/watereff/pdf/appa.pdf>
5. City of Austin Water Usage Rates: <http://www.ci.austin.tx.us/water/rateswr03.htm>
6. TX Public Utility Commission savings calculator:
http://www.puc.state.tx.us/electric/projects/22241/DeemedSavings_final.pdf

ENVIRONMENTAL IMPACT IN EAST AUSTIN

Hispanic Austin Leadership and Green Collar Operations Upgrades House

On Friday, March 26th, a crew from Green Collar Operations came to the home of Paco and Carolina Guajardo to perform an energy audit and assist this family of five with making energy saving improvements free of charge.

Carolina works as a Training Specialist focusing on parent initiatives with ACE (A Community for Education) and Paco works in construction but has been without steady work for over 1.5 years. They have three children, Francisco (7 years old), and twins, Isaac and Gabriel (two years old). Their house is a 1970's two bedroom, one bath style bungalow without central air and heat. They work hard in this city of Austin and struggle to make ends meet. Their monthly electric bills range from \$200 to \$400 per month for this tiny home throughout the year and this has placed a great strain on their lives.

The Hispanic Austin Leadership (HAL) program is sponsored by the Greater Austin Hispanic Chamber of Commerce (GAHCC). The HAL class of 2010 had a particular member, Gabriela Garcia, who also was assigned to work on the Environmental team. Knowing Carolina and her situation from work, Gabriela felt that Carolina's home would be a great place to focus the team's resources to help this family and help to draw more attention to East Austin and the needs of the community there.

Through the team's hard work and dedication to finding a way to help this family, the Environment Team was able to contact the president of Green Collar Operations, Andrew Ewig, who, when appraised of the situation, enthusiastically threw the support of Green Collar into this project. Green Collar came Friday morning at 8:30am and immediately began to work weatherizing the home. They installed insulation in the attic taking the house from an R-2 to an R-38 rating as well as sealed plumbing penetrations throughout the home, weather-stripped all the doors, patched a hole in the wall with Solar Board and performed several other weatherizing treatments on the home.

Just within two days Carolina is already commenting on how wonderful the work is and that there is a noticeable difference. "The windows don't shake in their frames anymore and we don't feel a draft along the floor because they sealed the holes in the wall. This is wonderful! Thank you, Thank you!"

The HAL Environment Team consists of Edward Olmeda, Gabriela Garcia and Paul Betancourt. These team members went further and helped educate the family on other topics of energy savings and helped the family to install a High-Efficiency Toilet for water conservation and a dozen compact fluorescent bulbs in their home.

ABOUT GREEN COLLAR OPERATIONS

Green Collar Operations is the #1 provider of energy efficiency services in Central Texas. With thousands of customers, Green Collar Operations has helped Texan's save Millions of kWh's, resulting in cost savings and more importantly, achieving practical environment solutions.

For further information on this topic, please contact Edward Olmeda at 512.324.5907 or to schedule an interview with the family, please contact Gabriela Garcia at 512.475.9782. Green Collar Corporation, www.greencollaroperations.com, Andrew Ewig may be reached at 512.986.7045 or andrew.greenco@gmail.com

BRIEFING

PHILANTHROPY

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its, donations or volunteer efforts by businesses of any size
com or 445-4835. This feature runs every Friday.

PHILANTHROPY

Green Collar makes home greener, gratis

A local family had energy-saving improvements made to their home for free by Green Collar Operations, an Austin-based energy-efficiency contractor.

On March 26, Green Collar made \$1,500 worth of weatherizing improvements to the home of Paco and Carolina Guajardo and their three children. The family struggled to pay the \$200 to \$400 monthly electricity bills for their two-bedroom East Austin home, which was built in the 1970s, according to a news release.

Green Collar installed insulation and weatherstripping on doors, patched a hole in the wall with Solarboard and sealed plumbing penetrations.

The Hispanic Austin Leadership program's Environmental Team, sponsored by the Greater Austin Hispanic Chamber of Commerce, connected the Guajardo family with Green Collar Operations, which donated the time and money for the home improvement project.

Austin dental clinic wins sponsorship

Tom's of Maine, which makes natural personal care



Edward Olmeda HISPANIC AUSTIN LEADERSHIP PROGRAM

Green Collar Operations' Gene Bautista, left, operations manager; Rob Scott, co-owner; and Andrew Ewig, co-owner, donated time and materials to repair and insulate the home of Carolina Guajardo and her husband. The couple had been spending \$200 to \$400 a month on their electric bills.

products such as toothpaste, gave a local nonprofit dental clinic a \$20,000 project sponsorship grant.

The grant will allow Manos de Cristo, which provides affordable oral care services, food and clothing to Austinites

in need, to purchase supplies such as X-ray film, syringes, suture and impression materials, infection-control products, anesthetics, gloves and more.

Manos de Cristo was one of five dental clinics selected nationwide for funding. Win-

ners were determined by votes through Tom's Web site (www.tomsofmaine.com).

Over the past few years, Tom's has donated more than \$900,000 to community-based dental clinics, according to a news release.

LIGHT: Illumitex to boost sales, production next

Continued from B7

want it."

Because the LED lighting industry is young, expanding rapidly and looking for new innovations, analysts say there is room for inventive startups to make an impact on the market.

"We are just at the very beginning of this growth curve,"

energy savings to lighting, which by some estimates accounts for about 40 percent of the nation's electricity usage. Broader acceptance could also mean lower emissions of greenhouse gases.

Several major electronics makers, including Philips, Samsung Electronics and LG Group, are making LEDs.

company's advisory board.

The company, which has fewer than 50 workers, has raised \$22 million in venture capital over the past few years. Its investors include New Enterprise Associates Inc., DFJ Mercury, Aweida Venture Partners, Applied Ventures and Apex Venture Partners.

Illumitex does some manu-

facturing of its products.

"It is a rare opportunity to find yourself with a unique technology and a world-class team in a market that is growing just about as rapidly as anyone on the planet," Thomas said.

The company's next goals, he said, are to expand sales and production and to complete the development of a next genera-