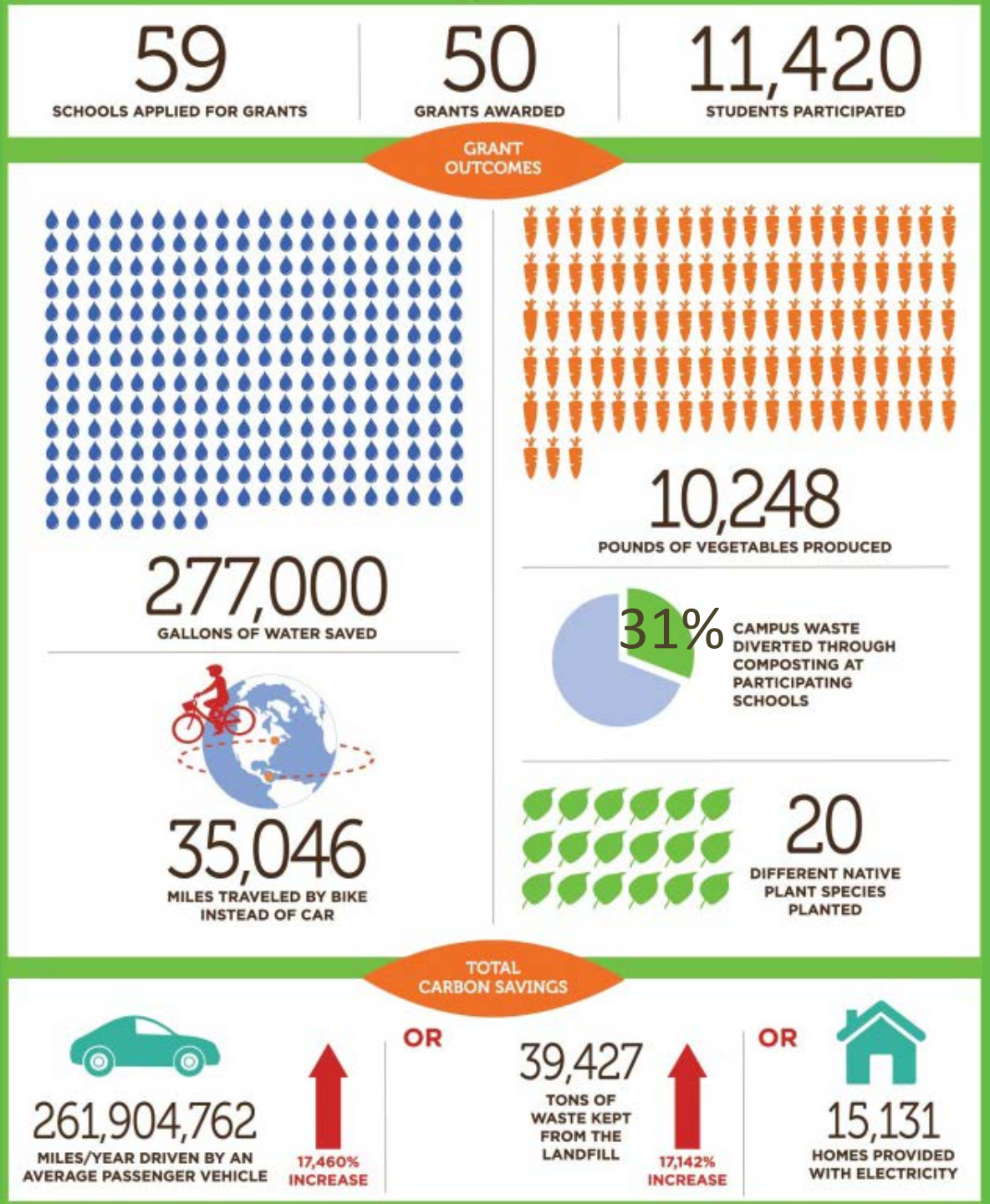

# OUTCOMES REPORT

## School Year 2014 - 2015

OFFICE OF SUSTAINABILITY
CITY OF AUSTIN

# BRIGHT GREEN FUTURE GRANTS

## 2014 - 2015 School Year



BRIGHT GREEN FUTURE

## FUNDING PROVIDED BY:

Austin Resource Recovery
Watershed Protection Department
Public Works Department
Office of Sustainability


# projects that protect water quality

*"We have to save our water, because you can't grow or feed anything, even your dog, without it."*

– Evan, 6th grader at Austin Achieve Middle School

**Project Name:** Rainwater Harvesting System

**School:** Austin Achieve Middle School

**Funded By:** Watershed Protection Department

**Project Description:**

The new rainwater harvesting system will allow students to sustainably water their outdoor learning center, which includes a raised-bed urban garden (19 plots, featuring fruits, vegetables, herbs, and edible flowers); the campus chicken coop (home to 10 chickens); and an on-site apiary (2 hives). This project will significantly reduce the need for chemically treated traditional water sources.

The rainwater system will be designed and constructed by Austin Achieve students under the guidance of teachers and in partnership with EcoRise Youth Innovations. For safety reasons, the cistern and platform will be installed by professionals; students will participate in installation of the irrigation system. This student-driven process will provide hands-on lessons in environmental conservation to all Austin Achieve students.

Austin Achieve is constructing a new campus that will be ready by Fall 2015, with construction of the new rainwater system to be completed by October 2015.

*Composting and native plants are just two of the ways Austin Achieve conserves water.*

*"It's more fun to learn sitting outside than sitting in the classroom. And we got to grow carrots and eat them."*

— Marissa, 5th grader at Blackshear Elementary School

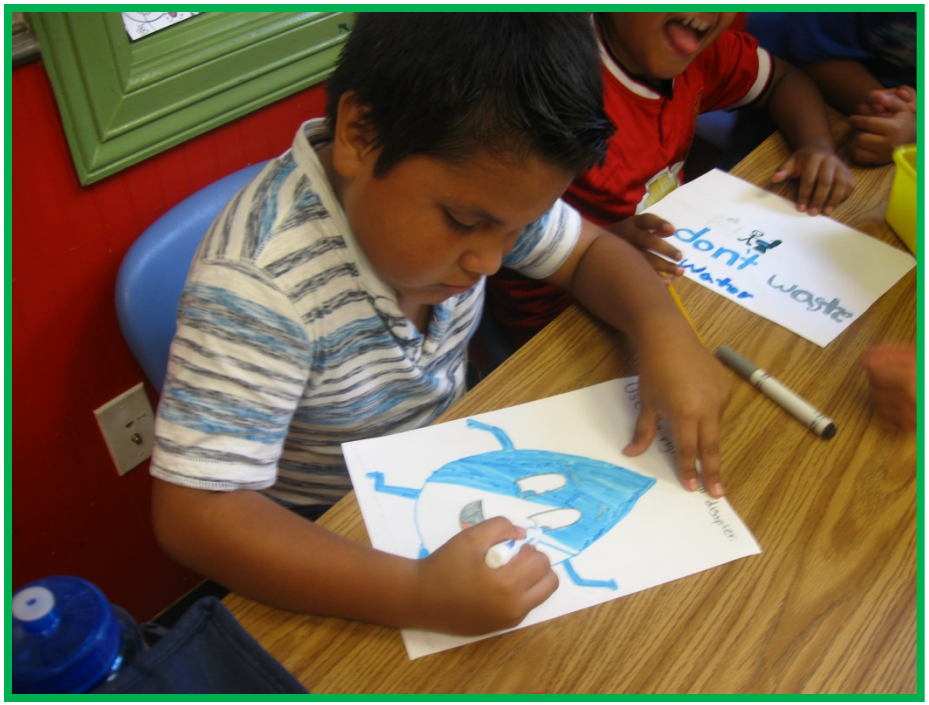
**Project Name:** Blackshear Schoolyard

**School:** Blackshear Elementary School

**Funded By:** Watershed Protection Department

**Project Description:**
The schoolyard design process was initiated in early Spring 2014 by a volunteer architect, along with Blackshear students, families, and community members. Since then, a local landscape architecture firm has enhanced the design. The design features outdoor learning elements including an outdoor classroom, rain garden, story areas, fruit tree orchard, water learning courtyard, and amphitheater. Phased implementation was identified during the design process in order to best allocate funds to items identified as high priority by both staff and the community.

Phase I of this campus improvement project included recycling containers and signage, a community garden, and outdoor learning center, all of which were completed in June 2015.




*One student made signs reminding everyone to conserve.*

*"This project shows that if you're creative and willing to put in the work, you can have a nice garden and save water too"*

— Susan, 7th grader at Clint Small Middle School

**Project Name:** Irrigation Project

**School:** Clint Small Middle School

**Funded By:** Watershed Protection Department

**Project Description:**
This middle school campus had several downspouts without an attached rain barrel; as a result, stormwater would flood the grounds and cause erosion. This project provides water for the Greenhouse, an irrigation system using green water from cisterns and downspouts, and a rain garden at each downspout.

In Small's extreme stormwater (feast) or drought (famine) climate, students are learning how to effectively deal with Stage 2 watering restrictions, while maintaining gardens and orchards that have been planted on the campus. Students learned how to capture stormwater, and designed an irrigation system to get water from cisterns to the gardens and orchards (previously, students filled buckets with water at the cistern and lugged it to various areas on campus). This project allowed students to participate in problem-based learning to create a solution for getting rainwater from the cisterns more efficiently.

Clint Small Middle School's Irrigation Project was completed in June 2015.

*Rain gardens have been created at each downspout.*

*"This project has the potential to address issues that have plagued this campus for decades."*

— John Hewlett, teacher at Lee Elementary School

**Project Name:** Roadrunner Rainwater Collection

**School:** Lee Elementary School

**Funded By:** Watershed Protection Department

**Project Description:**

Lee Elementary School faced drainage issues that resulted in runoff into Waller Creek as well as campus erosion. Grades 2 – 6 also maintain a number of vegetable gardens. This project captures water in rainwater collection tanks, which is used to care for the student gardens.

In addition to reducing the amount of runoff into Waller Creek, this project will significantly reduce the erosion that creates several unsafe areas on campus.

The Roadrunner Rainwater project was completed in June 2015.

*Rainwater collection tanks will help alleviate local flooding issues.*

*"Rainwater is so much better for plants than hose water."*

– Lisa, 6th grader at Means Middle School student

**Project Name:** Rain Garden

**School:** Bertha Sadler Means Middle School

**Funded By:** Watershed Protection Department

**Project Description:**

The Bertha Sadler Means Rain Garden captures and treats stormwater runoff from the campus, while serving as a demonstration garden for students to learn about watersheds.

Some lessons that students have learned from the project include:

- Water conservation - Rain water is more beneficial to plants and reduces the need for water from other sources.
- Improved water quality – Plants help filter pollutants, such as fertilizers, chemicals from roofing materials, and litter from the sidewalks.
- Reduction in flooding and erosion – Runoff collects in low areas and is absorbed into the ground instead of rapidly washing into creeks.

The Rain Garden Project at Bertha Sadler Means was completed in May 2015.

*The rainwater garden at Bertha Sadler Means will reduce flooding in the school courtyard.*

*"It will be nice to walk to school and not slip and slide and we can save the water for our plants."*

— Jason, 4th grader at Mills Elementary School

**Project Name:** Rain Cistern To The Rescue

**School:** Mills Elementary School

**Funded By:** Watershed Protection Department

**Project Description:**

A new cistern will collect rainwater run off from the school's roof that is eroding the trails and walkways students take to class.

Currently water drains directly onto the school yard, which washes away the engineered wood fiber used for walking trails. The installation of the rain cistern will not only alleviate this problem, but the water that is collected will be used by students to water their garden and campus trees. An additional drain will be installed to divert any water not captured by the cistern.

Installation of the rain cistern is scheduled for completion in September 2015.

*The concrete slab where the rainwater cistern will be installed this fall.*


cycle academies

*"The City has a goal of increasing trips made by bicycle by 2020 for both transportation as well as environmental concerns. This project will help achieve that goal."*

— Christopher Stanton, Director of the Ghisallo Foundation

**Project Name:** Cycle Academies

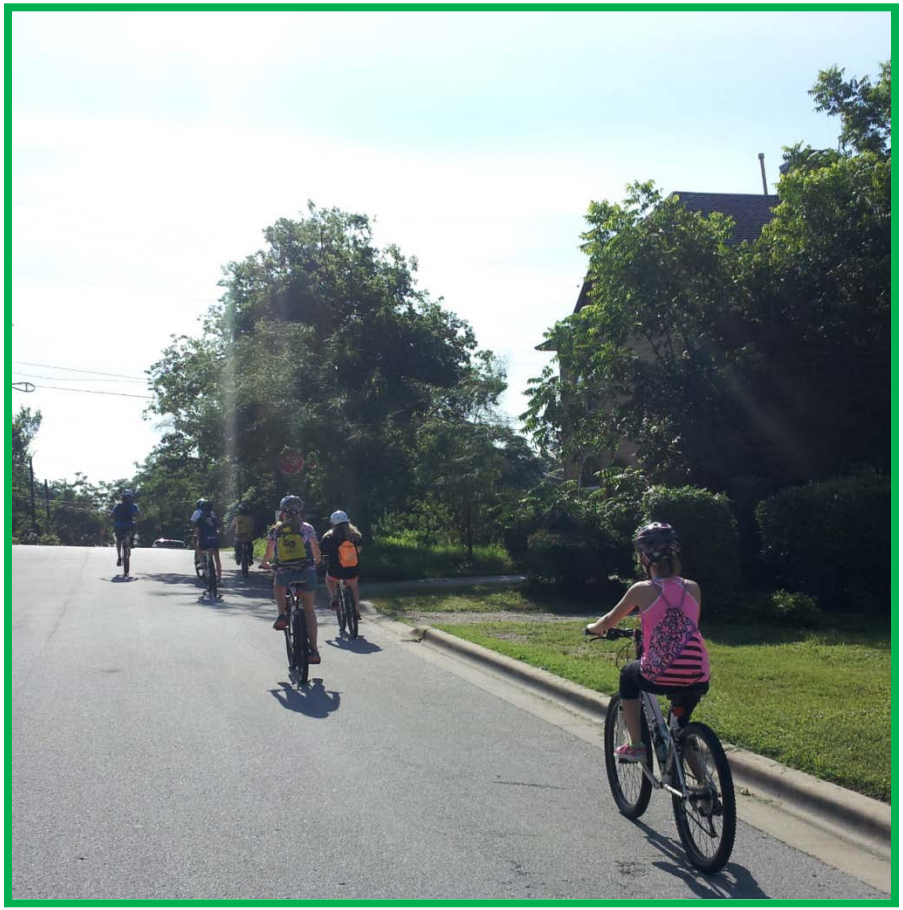
**Funded By:** Public Works Department

**Project Description:**

Cycle Academy is a structured educational program geared toward youth cyclists that concentrates on teaching bicycle riding, safety, and maintenance skills. The program focuses on learning by doing, self-sufficiency, developing a healthy lifestyle, and community service. The curriculum is split into discrete education modules to be able to track individual student achievement and measure progress in becoming subject matter experts. The goal is to develop youth cyclists who can be teachers within their own peer groups and families.

Students develop a well-rounded lifestyle and become recreational cyclists through a culture of ridership at schools. The aim is to create cyclists who not only use their bicycle for fun and recreation, but as a viable transportation option as well. Students acquire safety skills and learn to teach others to be safe as well. Encouraging bicycle transportation reduces carbon emissions produced by motor vehicles, resulting in improved air quality and reduced resource utilization.

This year, nine cycle academies at elementary and middle schools were funded by a Bright Green Future Grant.



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*"Riding your bike is really fun, you just have to look where you're going."*

— Amber, Perez Elementary School Cycle Academy


*"Its neat that I know how to fix my tire and don't have to wait for my dad."*

— James, Gullett Elementary School Cycle Academy

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*"I like being able to ride my bike to school and see my friends."*

— Brice, Maplewood Elementary School Cycle Academy


*"It gives me a feeling of being free not to depend on my parents to take me everywhere."*

— Daniel, Kealing Middle School Cycle Academy

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*"Bike riding is so fun, especially when it rains."*

— Taylor, Reilly Elementary School Cycle Academy

*"You don't have to ride horses to be in a rodeo."*

— David, Lee Elementary School Cycle Academy

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*"The better you got riding your bike the better you did on the obstacle course."*

— Karen, Widen Elementary School Cycle Academy


*"Bike riding is fun because my sisters and me and my mom can all ride."*

— Monica, Brentwood Elementary School Cycle Academy

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*"Bikes are better than cars because unless you get tired, you never run out of gas."*

— Emma, Blanton Elementary School
Cycle Academy


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projects that minimize waste

*"It makes me proud that my kids understand they have to work hard to save Earth's resources. Of course, they still won't clean their rooms."*

— Edgar, parent of Patton Elementary School students

**Project Name:** Mini Habitats with Ollas

**School:** Patton Elementary School

**Funded By:** Austin Resource Recovery

**Project Description:**

This project captures water run off from air conditioning units with PVC pipes, directing it to ollas buried in plant beds. These ollas provide water for the native plants students have planted.

The drought-tolerant, native to Texas, mini-habitat gardens will require zero additional irrigation, answering the question of how to maintain lush native landscaping without additional water during a historic drought. In addition, the plants used will attract and support pollinators such as bees, butterflies, and hummingbirds, thus strengthening the ecosystem by creating spaces for these pollinators to thrive. Some plants will provide shade to portable units on campus, decreasing the need to constantly run air conditioners and conserving energy, and also reducing the amount of fossil fuels needed to generate electricity.

Following a day of service involving Patton students and their parents, the ollas were installed in July 2015.

*Students created and helped install the ollas used for this project.*

*"Taking care of the planet is really hard work."*

– Meaghan, 2nd grader at Austin Village School

**Project Name:** The Game of Village Mission G.I.V.V.E

**School:** Austin Village School

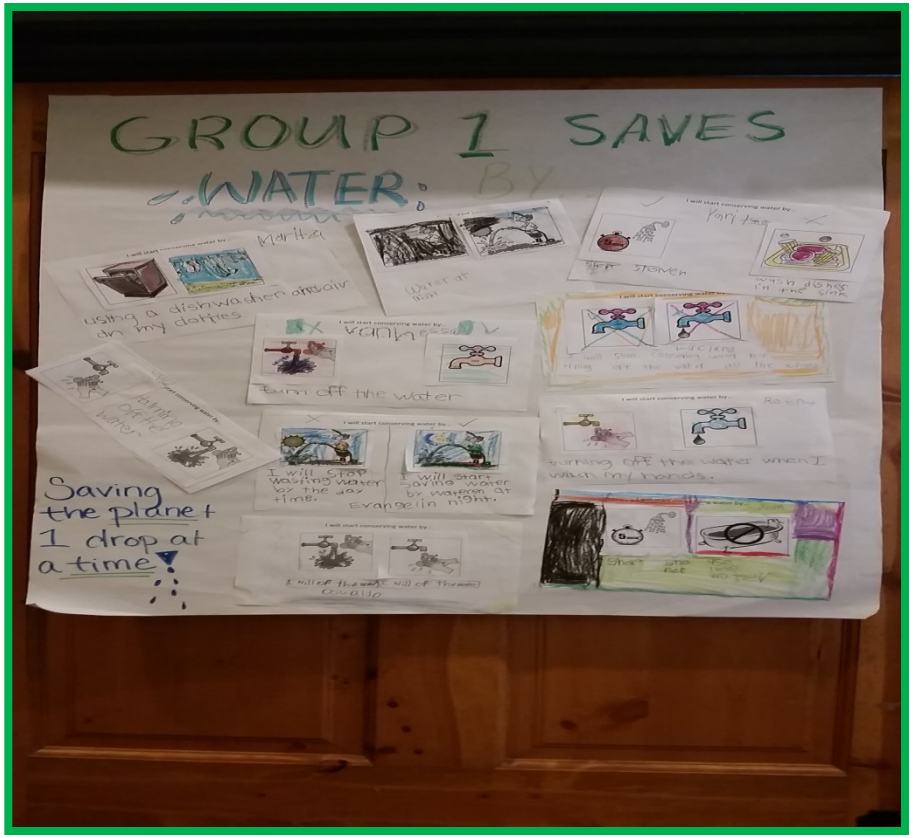
**Funded By:** Austin Resource Recovery

**Project Description:**

The Game of Village is an integral part of the curriculum at Austin Village School, offering an applied, cross-disciplinary, and innovative approach to life skills-based learning. Village is a year-long project which allows students to explore an environment in full: the culture, social dynamics, infrastructure, geography, economy, government, and more.

This year, Village was set in the future, and students created a scale-model version of a sustainable community set on a distant planet with an arid, desert-like atmosphere. Students were invited to join the Mission G.I.V.V.E. (Galactic Interplanetary Viable Village Enterprise) and were charged with the mission of setting up a colony and developing sustainable living practices on the future planet. The goal of utilizing a future time period was to have students study and practice sustainability and conservation techniques, and to build some level of expertise in a particular skill set applicable to sustainable living. The first order of business for the students was to set up a recycling center, where waste material was converted to fuel and composting materials for gardens.

Students returned safely from their year-long sustainability mission in May 2015.




*Austin Village students develop plans to save water on their planet.*

*"The students are excited to be transforming an area that is currently an eye sore into something beautiful that will also benefit wildlife."*

— Diane Crawford, teacher Covington Middle School

**Project Name:** Wildlife Habitat

**School:** Covington Middle School

**Funded By:** Austin Resource Recovery

**Project Description:**

Covington's project will develop a wildlife habitat at their school, something they have been planning for over 4 years. There is a 40 x 40 foot area in the middle of the habitat that is eroding because there is no plant life; the plan is to convert this area into a colorful grass meadow full of native ornamental grasses and wildlife.

The grass meadow will cut down on greenhouses gases because it will not require mowing, will prevent soil from eroding, and will attract native wildlife. A section of the land will be devoted to a compost area for a proposed community garden. This project will promote student engagement with natural settings and encourage them to spend more time outside.

Design of the project was completed in June, with construction scheduled for completion in the Fall of 2015.

*Covington students prepare the soil for the plants that will become a wildlife habitat.*

*"This project will create awareness that our school has a significant Hispanic population, while creating a space where students and community members can learn language and the culture "*

– Shaun Hopkins, teacher at Small Middle School

**Project Name:** Heritage Garden

**School:** Clint Small Middle School

**Funded By:** Austin Resource Recovery

**Project Description:**

With over 45% of Small Middle School students identifying themselves as Hispanic, the Heritage Garden project will connect the sustainability of schoolyard food gardening with the cultural and historical identity of the students.

The school already has a proven and mature gardening program, but this project addresses the cultural dimension of gardening in a new way, a tangible symbol of the heritage of a large portion of the student body. It will serve as a place of learning for Spanish classes learning names of foods – all labels will be in Spanish – and social studies classes learning about the Columbian Exchange and the foods of peoples native to the Americas. Food and waste materials from Small's cafeteria will be used as compost for this and other campus gardens.

The Heritage Garden will be open to students in September 2015.

*The Heritage Garden will serve as a place of learning as well as a food garden.*

*"I noticed when I went to the landfill, it was full -*
*Recycle! Stop wasting food! Reuse! Reduce!*
*Stop using a lot of things so you don't make so much trash!*

– Emma, 3rd grader in Foundation Communities Summer Program

**Project Name:** Ecosmarts Learning Curriculum

**School:** Foundation Communities

**Funded By:** Austin Resource Recovery

**Project Description:**

Foundation Communities is an affordable housing developer that provides homes to over 2,800 individuals and families in Texas. In addition to housing, on-site supportive services are designed to empower families toward stability and success. One way to accomplish this goal is through on-site community learning centers. These sites allow families access to free afterschool and summer programs where they live.

This year's grant was used to complete and revise the EcoSmarts environmental education curriculum, and integrate the program at all Foundation Communities learning centers. The curriculum introduces youth to environmental sustainability and motivates them to apply and promote greener and healthier habits. Activities and lessons analyze four topics: energy, water, waste, and indoor air quality.

The program was integrated into all 7 learning centers in time for the summer 2015 session.

*Children in Foundation Communities' EcoSmarts program learn the benefits of composting.*

*"Our Green Team has a proven record of successfully implementing sustainability projects that include diverse stakeholders such as students, staff, community members, local non-profit organizations and farms."*

— Abby Randall, teacher at Lamar Middle School

**Project Name:** Mini Farmers Market

**School:** Lamar Middle School

**Funded By:** Austin Resource Recovery

**Project Description:**

Green Team members at Lamar Middle School oversee several projects, including an edible garden with 14 raised beds containing herbs, vegetables and native perennials. This team also maintains a chicken coop with 4 pullets and 2 laying hens, a 3-tier garden compost system, a rainwater collection system and a cafeteria compost program.

This year's grant funded the Lamar Middle School Mini Farmers Market, which sells vegetables, herbs and chicken eggs once a month. It is also used to educate the community about how local, organic food and urban farms benefit health and the environment. Recycled materials were used to construct the chicken coop and some food waste is used to augment the chicken's diet. The Mini Farmers' Market Project was designed and implemented by 12 students on the school's Green Team.

The Lamar Middle School Mini Market opened their doors on April 23, 2015.

*The inner workings of the chicken coop used by the Lamar Mini Farmers Market.*

*"We can grow more food faster with Aquaponics and it is 100% chemical free, so we won't hurt the fish."*

– Mark, 7th grader at Clint Small Middle School

**Project Name:** Aquaponics Garden and Fish Tank

**School:** Clint Small Middle School

**Funded By:** Austin Resource Recovery

**Project Description:**

Sustainable sources for food is one of the environmental challenges addressed at Clint Small Middle School. The Aquaponics Garden and Fish Tank project will reduce impacts to the environment, as well as provide healthier food options.

Aquaponics produces both fish and organic vegetables in a natural pond ecosystem that can feed any number of people, depending upon scale. It uses far less water than conventional farming and produces its own natural fertilizers.

Design of the project was completed in March 2015, with construction completed in June 2015.

*Small Middle School's Aquaponics Garden is ready to be stocked.*

*"It's cool that when I leave Bailey to go to high school, a plant I planted will be here for other students to look at."*

— Robert, a student at Bailey Middle School

**Project Name:** Bailey Bear Community Garden

**School:** Bailey Middle School

**Funded By:** Austin Resource Recovery

**Project Description:**

Bailey Bear Garden will be a focal point for the Garden Club, Skills for Living class, Native Plants class, and PTA Campus Beautification program. It will instill a sense of campus stewardship, as well as an awareness about careers in wildlife and range management.

The first phase of the project involved planting fruit trees and creating a program that involves all of the feeder schools for Bailey. Bailey students grow native trees, shrubs and second story plants from seeds and then give them to the 5th graders at each feeder school. The 5th graders care for these plants and then plant them in the spring before entering Bailey Middle School.

Incoming Bailey Middle School students held their planting day on April 18, 2015.

*Bailey Bears learn the importance of using composted materials for mulching.*

*"Students are engaging in high level challenges that directly involve STEM, all the while having fun and being outdoors. They were so proud of their work that they brought their parents to the grand opening."*

— Christine de la Torre, Crockett High School teacher

**Project Name:** Aquaponics Garden

**School:** David Crockett High School

**Funded By:** Austin Resource Recovery

**Project Description:**

Aquaponics involves growing plants in water that provides habitat for fish. It offers a symbiotic relationship, where fish waste is converted through the nitrogen cycle into nitrate that feeds the plants.

Students learn many things from this hands-on, cross-curricular undertaking including measuring pH, temperature regulation, the nitrogen cycle, oxygen cycle/levels, plant growth, fish biology, business, construction, engineering, sustainability, organics, and water conservation. This project allows students to gain an understanding of where food comes from and what sustainable practices in farming look like. After working on this project, students will have a stronger understanding of topics like water conservation, organic food growth, and farming policies; they will also be able to make better food decisions at the grocery store.

Construction on the garden was completed in May 2015.


*Students and teachers at the Aquaponics Garden dedication.*

# eco audit projects

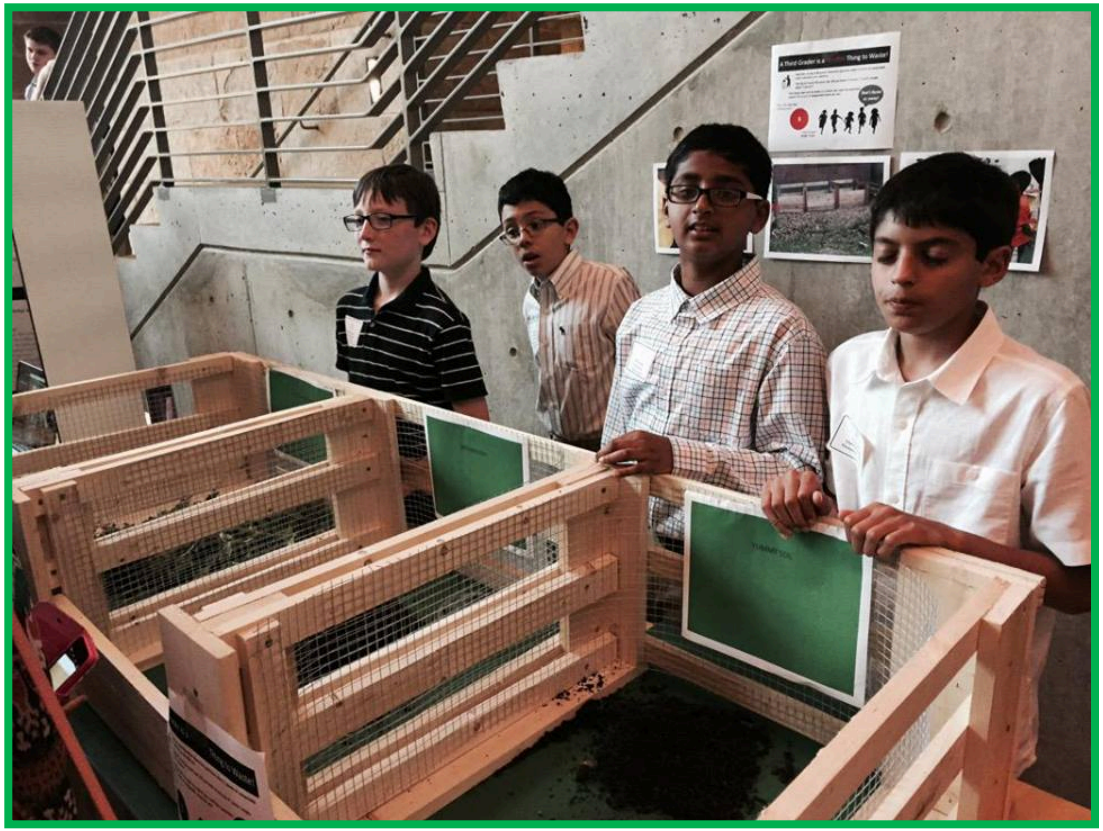
*The Office of Sustainability partnered with EcoRise Youth Innovations to provide funding for EcoAudit projects.*

**30** projects

**450** students directly engaged

**10,335** students impacted

Project themes:
**Water**
**Waste**
**Energy**
**Food**
**Public Spaces**
**Transportation**
**Air Quality**



BRIGHT GREEN FUTURE

## Eco Audit projects:

- **Ann Richards High School** – rain water harvesting
- **Austin High School** – low flow fixtures
- **East Austin College Prep** – rain water harvesting
- **Eastside Memorial High School** – insect garden
- **AISD Sustainability Brand Design Contest**
- **Austin Achieve Middle School** – recycling program
- **Bertha Sadler Means Middle School** – rain garden
- **Idea Allan Middle School** – native plant garden
- **Lamar Middle School** – no idling campaign, window garden, rain barrel, alternative transportation
- **Paredes Middle School** – vermicompost
- **Small Middle School** – indoor plant program, earth oven, low flow faucets, goats
- **Travis Middle School** – energy reduction campaign
- **Laurel Mountain Elementary School** – three bay compost
- **Pillow Elementary School** – energy monitors, smart plugs, student advocacy campaign
- **Williams Elementary School** – recycling and compost bins

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ecoRise YOUTH INNOVATIONS


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