



**2019**

# **Sustainability Accomplishments**



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# WHY IT MATTERS

Boulder County's leaders and community members have long held a commitment to stewardship of our land, environment and community. The Boulder County Commissioners believe that by prioritizing environmental sustainability, we can achieve higher economic vitality in our communities, ensure cleaner air and water for the well-being and public health of residents, and combat major environmental issues, such as climate change. By striving to become as environmentally sustainable as possible, we are supporting myriad human and environmental benefits for our county and beyond.

In the following pages, we will highlight the progress and accomplishments towards greater environmental sustainability thanks to various programs and community member participation.

## sus·tain·a·bil·i·ty

“The use, development and protection of resources in a way that enables Boulder County residents to meet their needs and maintain a high quality of life, without compromising the ability of future residents to do the same.”

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# CONTENTS

<b>WHY IT MATTERS</b>	<b>1</b>
.....	
<b>TABLE OF CONTENTS</b>	<b>2</b>
.....	
<b>CLIMATE</b>	<b>3</b>
.....	
<b>ENERGY &amp; BUILDINGS</b>	<b>5</b>
.....	
<b>LOCAL FOOD &amp; AGRICULTURE</b>	<b>7</b>
.....	
<b>TRANSPORTATION</b>	<b>10</b>
.....	
<b>WATER</b>	<b>12</b>
.....	
<b>ZERO WASTE</b>	<b>13</b>
.....	
<b>ENVIRONMENTAL EDUCATION</b>	<b>15</b>
.....	
<b>COMMUNITY SUSTAINABILITY GRANTS</b>	<b>16</b>

# climate



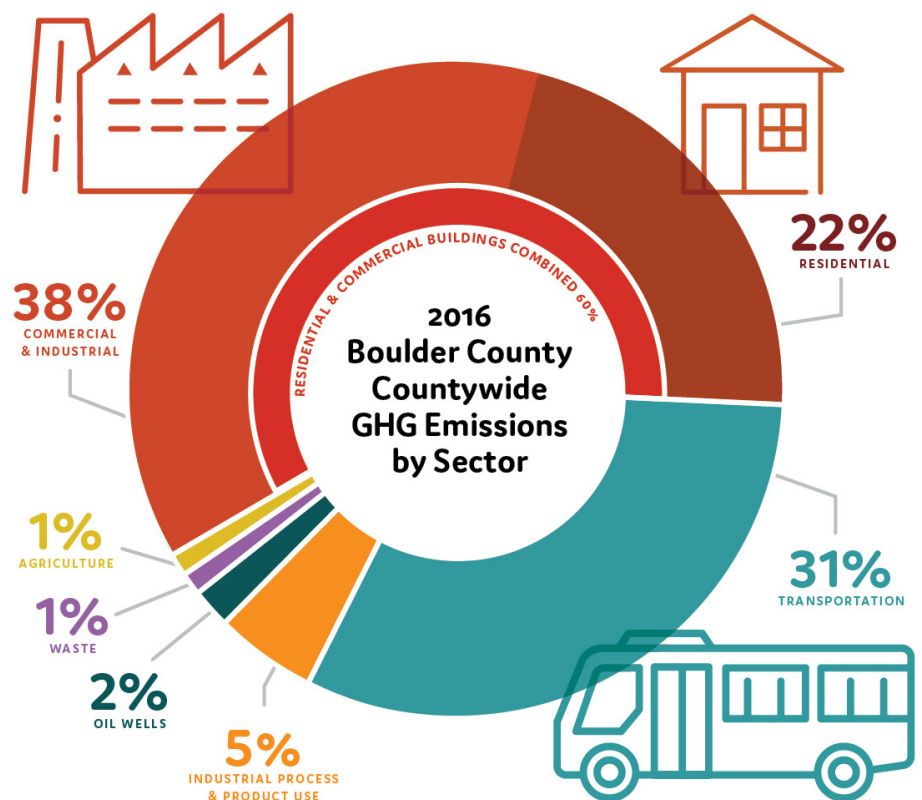
## CLIMATE ACTION

Boulder County strives to achieve rapid and deep emission reductions and become more resilient to the impacts of climate change.

According to our most recent greenhouse gas (GHG) emission inventory completed in 2016, commercial and residential building energy use accounts for 60% of emissions and transportation accounts for 31% of emissions countywide. Emissions from industrial processes, oil wells, solid waste, and agriculture account for the remaining 9% of emissions.

To effectively address climate change, Boulder County, municipalities, businesses, and community members can take action to reduce or eliminate fossil fuel consumption by taking advantage of leading-edge technologies and innovation for a healthy and vibrant community and planet.

The other sections of this report describe how various programs and community participation are reducing greenhouse gas emissions.



## CLIMATE RESILIENCY

Boulder County is working to ensure that we are prepared to survive and thrive in the face of shocks and stresses related to climate change.

- In response to the 2013 Flood, the state-funded **Colorado Hazard Mapping Program (CHAMP)** is updating local flood hazard information for the Front Range's most affected waterways, including Boulder County stream reaches.
- Boulder County is working on a Floodplain Management and Transportation System **Resiliency Study and**

**Action Plan (RSAP)** to learn from the 2013 Flood, and to examine what can be done to better prepare the county's waterways and transportation systems for future natural or economic disasters.

- In partnership with the City of Boulder, Boulder County offered **Better Together**, a series of workshops that explore the meaning of resilience and helps individuals develop personal skills and connections to navigate emergency situations. An estimated 200 community members have attended 10 workshops to-date.



Boulder County and other Colorado communities are already experiencing the impacts of a warming climate in the form of reduced snowpack, earlier snowmelt, increased risk of high intensity wildfires, extreme weather events, and an increased number of "high heat" days.

## CLIMATE POLICY ACTION

Boulder County initiated the establishment of the Colorado Communities for Climate Action. Colorado Communities for Climate Action (CC4CA) is a coalition of local governments advocating for state and federal policies that protect Colorado's climate for current and future generations.

- Established three years ago, the **CC4CA** coalition has grown to 24 jurisdictional members from across the state representing more than one-eighth of all Coloradans. The coalition provides an opportunity to pool resources and bring local governments together in a cost-effective way for coordinated action.
- During the 2017 and 2018 State General Assembly sessions, **CC4CA** helped win support for the following bills: enabling local governments to fund regional transit authorities, establishing the right to install and use battery storage, and directing the Public Utilities Commission to adopt rules on utility-scale storage systems. The coalition also helped defeat bills that weren't supportive of climate action.
- **CC4CA** is also actively pressing for more climate protection actions by the Governor and state agencies, and played a central role in the adoption of Low Emission Vehicle (LEV) standards by the state's Air Quality Control Commission.

The coalition is an effective voice in building the public support necessary for Colorado to provide a visible, leading role in addressing climate change nationally and internationally.

# energy & buildings



## ENERGY EFFICIENCY & RENEWABLE ENERGY

Boulder County offers a number of energy efficiency and clean energy initiatives to help residents and business owners be a part of the solution to our climate crisis.

Boulder County recognizes energy efficiency as a cost-effective means of reducing energy-related environmental impact. By lowering their energy use, businesses and residents reduce the need for power generation, preventing pollution from occurring in the first place. Boulder County also recognizes energy efficiency and solar energy as opportunities to create local economic growth and investment. **EnergySmart** is a service that helps homes and businesses in all Boulder County communities become more energy efficient and comfortable, adopt renewable energy, and save energy and money. **EnergySmart** for businesses is administered by Boulder County's **Partners for a Clean Environment (PACE)** service.

**EnergySmart** has served 18,029 homes and 3,199 businesses since 2010 and spurred investment of more than \$62 million in the local economy. **EnergySmart** is also supporting residents in the transition away from fossil-fuels by replacing fossil-fuel based natural gas water and space heating with ultra-efficient heat pump alternatives. 147 homes have adopted the technology in their home, including air source heat pumps, ground source heat pumps, and heat pump water heaters.

**EnergySmart** has supported local contractors and drives direct spending in our community.

- For every \$1 spent in program rebates, \$9 was invested in energy efficiency upgrades in the commercial and residential sectors.
- Improved home indoor air quality and safety.
- Reduced maintenance and utility costs.
- Increased comfort, with fewer drafts and quieter homes.
- Increased workplace productivity.
- Residents and businesses have saved an estimated \$4.5 million annually in utility expenses, supporting a healthy economy and environment.

Boulder County led an innovative initiative called **Benefits Boulder County** to accelerate the adoption of rooftop solar and electric vehicles. This program was the first of its kind in the U.S. utilizing group procurement (bulk-buy) to purchase solar and electric vehicles at a discounted price.

Because of the county's program offerings, more than 3.7MW of solar has been installed on homes and businesses. (See Transportation section for accelerating the adoption of electric vehicles.)



More than  
3.7MW of  
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Reduced  
an estimated  
36,000 metric tons  
of CO<sub>2</sub>e annually.  
Equivalent to taking  
7,620 cars off  
the road.



# CLEAN ENERGY FINANCING

- Boulder County worked with Elevations Credit Union to launch a financing product in August 2012. As a result of the **Elevations Energy Loans**, over \$5.3 million in additional energy loans have been issued in Boulder County, helping homes and businesses overcome cost barriers to energy efficiency investment.
- In 2018, Boulder County helped support the launch of the **Clean Energy Credit Union**, a new federally chartered financial institution focused solely on providing loans that help people afford clean energy products and services such as solar electric systems, electric vehicles, and home energy efficiency upgrades. In its first six months of lending, \$91,000 in energy loans have been issued in Boulder County, helping homeowners overcome cost barriers to the adoption of clean energy and energy conservation improvements.
- Boulder County is the first county in Colorado to opt-in to Colorado's **Commercial Property Assessed Clean Energy (C-PACE)** financing for commercial property owners to fund efficiency and renewable energy upgrades, with 15 projects currently in the pipeline in Boulder County. **C-PACE** projects help advance public goals to reduce greenhouse gas emissions, increase energy efficiency and renewable energy deployment, and strengthen the local economy.

# local food & agriculture



## LOCAL & HEALTHY FOOD ACCESS

Interest in sourcing local food has exploded in Boulder County over the last two decades, as evidenced by the growth in Farmers' Markets and Community Supported Agriculture (CSA) farms, as well as by the number of retail stores, restaurants and institutions featuring locally grown food.

### Double Up Program at the Farmers Market

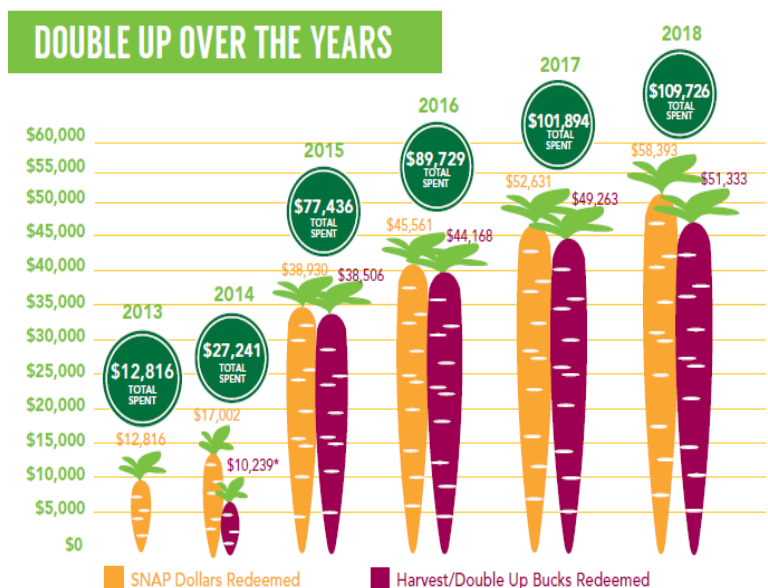
- The **Double Up Food Bucks** program works to help families who are receiving food assistance by doubling the amount of food benefits that can be used to purchase fresh produce. **Double Up Food Bucks** provide families with more healthy, fresh produce from local farmers.
- The **Double Up** program expanded to the Nederland Farmers Market in 2018. It is currently available at the Boulder, Lafayette, Longmont, and Nederland Farmers Markets.

### Double Up Retail Program at Grocery Stores

- Started in 2018, the **Double Up Food Bucks** program increases the value of federal nutrition benefits (SNAP or "food stamps") spent at Whole Foods Markets in Boulder, ultimately helping families purchase more healthy produce.
- We are planning to expand to a mountain retail location in 2019.

### Farmers Market Women, Infants, and Children (WIC) Program

- The **Farmers Market WIC program** allows women, infants, and children who receive nutrition assistance benefits to purchase fresh fruits and vegetables, meats, eggs and cheese at Boulder County Farmers Market locations.



94% of WIC participants said that they would not have come to the market without the incentive.





# SUSTAINABLE FARMING PRACTICES

Agriculture is a critically important part of Boulder County. The county helps to keep land as open space, preserve the rural culture, and increase the economic security of the county and the community.

## Responsible Land Ownership

- Boulder County has successfully encouraged an increase in the use of **reduced-till and strip-till farming** on county agricultural land. These practices reduce wind and water erosion as well as preserve soil moisture and improve soil health.
- The county continues to explore ways to support our tenants with soil health practices, like the addition of **cover crops**.
- Soil and water monitoring programs are implemented by Boulder County on county agricultural lands.
- **Hay and grain storage sheds** have been constructed to enhance the quality of agricultural products and the operators' ability to optimize sales in the marketplace.
- Boulder County has co-hosted three **Soil Revolution Conferences** bringing local, regional, and national experts together to explore soil health improvements.

The county has installed 34 irrigation systems covering 3,400 acres.

- The opportunity to install **solar arrays in dry pivot corners** to help off-set the energy cost of pumping irrigation water is currently being explored.

Boulder County provides incentives to help local farmers install water-efficient irrigation systems. To date, the county has installed 34 **irrigation**

**systems** covering 3,400 acres, which provides the following improvements:

- Increases irrigation efficiency from 50% to 85%
- Increases crop production, typically between 30% and 50%
- Allows for conservation tillage practices
- Saves labor

On market farms, the county's financial support for irrigation ponds allows for optimal use of **drip irrigation**, achieving greater than 90% irrigation efficiencies with best practices, when coupled with soil moisture monitoring.

For the past eight years, CSU Extension has rented and installed **soil moisture monitoring devices** on local farms and provided technical advising to growers on data usage for making sound irrigation management decisions. All growers report this technology has improved irrigation management.

In 2019, the first **sub-surface drip irrigation system** will be installed on two acres of an organic farm, improving irrigation efficiency to more than 90%.

More than 3,500 acres of agricultural land on open space is certified organic or using organic practices.

Boulder County has reached 22% organic on ag lands of a goal of 25% organic.



## Carbon Sequestration

- To effectively address climate change and reduce greenhouse gases (GHG) in the atmosphere, Boulder County has launched a pilot **carbon sequestration project** to determine the feasibility of sequestering additional carbon from the soils of agriculture fields, forests, grasslands/rangelands, and urban/residential properties. **Carbon sequestration** in soils is also shown to have many co-benefits that can achieve overarching county climate goals such as reductions in GHG emissions, improved soil health, improved crop yields, increased water retention, and restoration of native plant and animal species.
- Working with scientists at Colorado State University, the pilot project in Boulder County will assess the effectiveness of compost application on degraded rangeland for storing carbon in soils on rangelands of our region. In addition, the county is supporting producer-based carbon farming demonstration trials with the goal to integrate carbon-farming practices on agricultural lands owned by Boulder County and develop carbon-farming systems that can be extended to irrigated cropland and irrigated hay and pasture land.



## Agricultural Heritage

- Boulder County has a rich **agricultural heritage** from its beginnings in the 1860s providing food supplies for the mining camps to the large wheat farms and beet fields of the early twentieth century. Unfortunately, over the past several decades numerous historic agricultural properties have been lost or are under threat due to increasing property values and development pressures. In addition to increased development pressures, the way in which Boulder County is farmed is changing. The once prevalent farm family living and working on their land has been replaced in many cases by an agricultural lease agreement to an off site tenant.
- Boulder County has 25,000 acres of open space that is leased to 65 tenants as productive agricultural properties.
- The leases allow much of the agriculture program to be self-sufficient and self-funded, providing the Parks & Open Space Department with over a million dollars in rental income.





# transportation



## BICYCLE, ROAD SAFETY & REGIONAL TRAILS

To help reduce our dependence on fossil fuels and encourage an active, healthy lifestyle, Boulder County invests in programs that support bicycling, walking, carpooling, and public transportation.

- Since 2008, Boulder County Transportation and partners completed a number of bicycle and road safety projects, including two **state highway bikeways**, more than 16 miles of new or improved **road shoulders**, **bridge replacements**, **intersection improvements**, and three regional partnership projects with multimodal benefits.
- The county is working with the Colorado Department of Transportation (CDOT) to develop designs for a 12-foot wide, hard surface **multiuse path in the median of SH119**, also known as the Diagonal Highway. Construction could start in 2023 if the project receives funding.
- Throughout Boulder County since the spring of 2017, 46 businesses received free **bike racks** and siting assistance, so employees and customers have a safe place to park their bikes.
- **Trip Tracker** is an innovative program that encourages school communities to reduce motor vehicle traffic around schools. When participants walk, bike, carpool, or take the bus to school, they earn Tracker Bucks which can be spent at participating local businesses. For the 2017-2018 school year, there were 3,487 participating students from eight St. Vrain Valley School District elementary schools, saving 29,535 total car miles.
- Boulder County continues to develop a **Regional Trails system** with 13.8 miles of new regional trail connections since 2008.



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## REGIONAL MOBILITY

Boulder County has supported bus transit with funding for regional transit service and promotes affordable multimodal options through **Mobility for All**.

- In 2018, the county completed a **bus rapid transit feasibility study along SH 7** from Boulder to Brighton that looked at routing, station location, and total ridership. The study made recommendations on intersection designs that give transit priority at key intersections in the corridor.
- The county has been working closely with Regional

Transportation District (RTD) and CDOT on the **SH 119 bus rapid transit planning and preliminary design project**.

This will include transit-specific infrastructure on the Diagonal including new center median bus platforms, new buses, and transit priority at the intersections.

- In 2018, the county distributed 2,300 stored value **transit passes** to Lafayette residents,

focusing on low-income communities.

- Through a recent pilot project, the county has been providing free Lyft rides for all residents at two Housing & Human Services (HHS) sites. This pilot helps us understand how ride hail services can (and cannot) improve transportation options for specific populations.
- The county provides free **EcoPasses** for all residents at

two HHS residences.

- Boulder County, through **Bike-n-Ride shelters**, provides long-term, secure, and weather-protected bicycle storage for commuters, increasing access and infrastructure that enable bicycling to and from bus stops. The county is participating on a new first and final mile study on SH 119 to prepare for the future bus rapid transit (BRT) in that corridor.



## TRANSPORTATION ELECTRIFICATION

Boulder County is committed to accelerating the adoption of electric vehicles, supporting the installation of electric vehicles charging stations in strategic locations across the county, and supporting the electrification of buses and ride-share services.

- Boulder County led a first-of-its-kind **pooled purchasing initiative** to accelerate the adoption of rooftop solar, electric vehicles, and electric bikes. A total of 356 electric vehicles were purchased in the fall of 2015 and spring of 2016. Despite being home to less than one-tenth of 1% of the U.S. population, Boulder County drivers accounted for 3.5% of total nationwide Nissan Leaf sales in the first year of the program. This model has been adopted and replicated at the utility scale across Colorado and the country. Boulder County also increased the adoption of electric bikes with a total of 280 electric bikes purchased in the last three summers in partnership with private sector bike retailers.
- Boulder County contributed matching funds to Charge Ahead Colorado (CAC) to incentivize the installation of **electric vehicle charging stations**. As a result, CAC funded 24 additional charging stations in Boulder County in 2015 and 2016. Additional charging stations were installed between 2016 and 2018 with support from Boulder County's **Partner for a Clean Environment (PACE)**, which assisted businesses and commercial property owners in applying for these charging station grants.
- The Boulder County Commissioners voted unanimously in November 2018 to adopt a **GoEV Resolution** (2018-120), becoming the first local government anywhere to join the **GoEV Cities and Counties** campaign. Through public-private partnerships, the **GoEV** goals include plans to try to electrify the county fleet, passenger vehicles, transit and school buses, and taxis and ride-share vehicles in the community in the coming decades.



## WATER CONSERVATION

Boulder County continues to expand sustainability services and offers programs to residents and business owners to encourage efficient and responsible water use.

- The **EnergySmart** program and **Partners for a Clean Environment (PACE)** since 2010 have helped residents and businesses install water-saving showerheads, faucet aerators, low flow toilets, clothes washers, dishwashers, and pre-rinse spray valves, saving an estimated 42 million gallons of water annually.
- Boulder County provides incentives to help local farmers install **water-efficient irrigation systems**. The installation of 34 sprinkler systems improved irrigation efficiency from 50 to 85%.

## WATER QUALITY

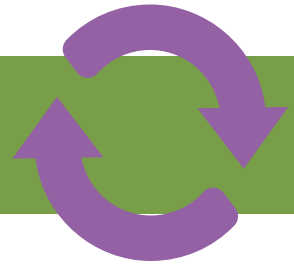
Boulder County has committed to partnerships with communities working together to protect our water quality and coordinate watershed management.

- Boulder County partners with Boulder, Erie, Lafayette, Longmont, Louisville, and Superior through the **Keep It Clean Partnership (KICP)** to protect, promote, and improve watershed health in the Boulder St. Vrain Basin. In 2018, the **KICP** supported school programs for over 4,000 elementary school students, hosted a training seminar for stormwater professionals, and continued to implement a shared water quality monitoring and analysis program among other activities. The **KICP** also recently completed a robust strategic planning effort resulting in a set of ambitious new goals and objectives to protect, promote, and improve local water quality in the years to come.
- Through a partnership with the Arbor Day Foundation in 2018, the county supported nearly **500 trees distributed and planted**, filtering over 3 million gallons of stormwater over the first 20 years of the growth of the tree. The partnership has grown and the Town of Lyons, City of Boulder, and a corporate sponsor are contributing to offer approximately 800 trees in 2019.
- Boulder County has approved 12,720 **on-site septic systems** which helps ensure clean ground water and surface water, as old systems often fail and pollute the water.





# zero waste



## INFRASTRUCTURE

Boulder County is committed to responsible and sustainable management of waste streams. The county manages the county-owned recycling center and mountain drop-off centers, and provides hazardous material drop-off centers.

- The construction of the **Recycling Center** at 1901 63rd Street in Boulder was completed in 2001. Operated under contract by Eco-Cycle, this has handled 650,000 tons of recyclables since it opened, including cans, bottles, paper, and cardboard.
- In 2007, a major upgrade of the **Recycling Center** allowed it to process single-stream recyclables, thus making recycling more convenient for residents and businesses.
- Boulder County has provided partial funding and loans for the construction of the **Hazardous Materials Management Facility**, which opened in 2011. In 2018, the HMMF served 19,146 households and 336 businesses, and collected more than 1 million pounds (517 tons) of hazardous materials. The **HMMF** has increased diversion from the landfill to 89%.
- New waste streams accepted at the **HMMF** include all batteries and household sharps.
- A loan from the Boulder County Recycling Fund enabled the City of Boulder to secure the purchase of 6400 Arapahoe Avenue, now home to the ReSource sales yard and Eco-Cycle's Center for Hard to Recycle Materials (CHaRM).
- Boulder County added compost service in mid-2015 to the county-operated **Nederland Transfer Station**, which collected 46 tons of food and yard waste from this mountain community in 2018.
- Boulder County added styrofoam recycling at both **Mountain Transfer Stations** in 2018 and mattress recycling at the **Nederland Transfer Station**. The styrofoam recycling program has diverted 182 cubic yards from the landfill and the mattress recycling program has diverted 255 mattresses from the landfill.
- Boulder County takes woody material that might otherwise go to the landfill from public and private forest management and wildfire mitigation: 6,900 tons were converted to compost and 5,500 tons were used in biomass heating systems at the county parks office building and the county jail since 2014.



The Recycling Center has handled 650,000 tons of recyclables since opening in 2001.



# ZERO WASTE PROGRAMS

Boulder County offers community zero waste funding, supports recycling and compost programs and education, increases food waste awareness, and provides business education and incentives.

- Free tours of the Boulder County **Recycling Center** are offered year-round to interested groups. In 2018, 118 guided tours with a total of 2,925 attendees provided the opportunity to learn about the importance of recycling and how recyclables are sorted and processed for residents and non-residents of Boulder County.
- Boulder County's **Zero Waste Funding program** distributes \$50,000 annually to communities, non-profit groups, schools and universities, and businesses for education and infrastructure initiatives that promote waste reduction and diversion throughout the county. Since its inception in 1997, the county has awarded over \$1.1 million dollars to local organizations striving towards Zero Waste.
- Boulder County offers free seasonal **Backyard Compost Workshops** in various locations throughout the county in an effort to promote composting education in the community. Since 2014, 55 workshops have been held and over 600 residents have attended. In addition to the valuable composting education provided, SoilSaver compost bins are available to purchase at wholesale price at each workshop.
- Since 2003, Boulder County has offered coupons to incentivize businesses to start recycling or composting services. The coupons provide \$150 towards the cost of the first three months of service.
- Between 2010 and 2018, **Boulder County Partners for a Clean Environment (PACE)** advised more than 1,050 businesses to help them increase waste diversion and 48% of these businesses improved their waste diversion.
- Since 2011, 79 businesses have achieved **PACE** certification in waste (requiring an 85% diversion rate).
- Each year, the Boulder County Fair is held at the Longmont Fairgrounds as a **zero waste event**. The fair brings in over 150,000 attendees over a 10-day period. As a result of the county's zero waste initiatives, food vendors are required to offer recyclable or compostable food service ware, more than 100 volunteers are recruited to provide zero waste education and waste sorting, and special collections of hard-to-recycle materials are installed to increase diversion efforts.



**In 2018, 118 guided tours were given at the Recycling Center.**

# environmental education



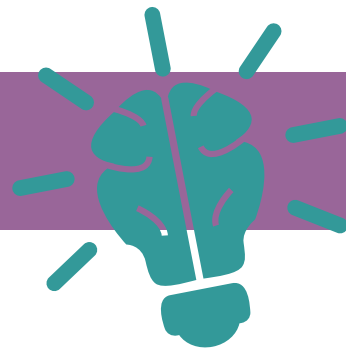
## EDUCATION PARTNERSHIPS

Environmental Education (EE) helps youth to both build a connection to the natural world and to develop the knowledge, skills, attitudes, motivations, and commitment needed to act in ways that support the health and vitality of all living things.

- Launched in 2017, **E Movement** is a collective of schools, teachers, environmental educators, and community partners in Boulder County working to increase and recognize engagement, environmental literacy, and holistic learning within our education system.
- **E Movement** currently includes over 100 teachers, 15 environmental educators, and 30 community partners. In 2018, E Movement received the “Advancing Environmental Literacy” Award by the Colorado Alliance for Environmental Education.
- Eco-Cycle’s **Green Star Schools** program helps schools in Boulder County move towards Zero Waste by increasing the volume of recyclables collected, initiating compost collections, monitoring trash volumes, implementing multiple waste reduction projects, and conducting extensive training and education. Eco-Cycle continues to integrate English-as-a-second-language and lower income students into the program as it expands into new schools.
- In Boulder County, 50 schools are participating in **Green Star Schools**, representing 60% of the public schools within the county. The total number of participants for the program overall is 21,124 students and 2,485 staff. In addition, approximately 215 tons of compostables and 155 tons of recyclables were diverted from the landfill during the 2017-2018 school year.
- Elementary schools across Boulder County participate in the **Kilowatt Kidz**, a month-long energy challenge where students learn about important and fun ways to save energy in their home. The program is funded by Boulder County and implemented by Eco-Cycle. Since 2011, the **Kilowatt Kidz** program has reached more than 6,000 students in Boulder County.
- Boulder County offers an educational opportunity for 4th grade students to learn where their food is grown, interact with local farmers, explore the diversity of Boulder County agriculture and natural resources, and have the opportunity to climb into tractors and combines. Since 2010, more than 10,000 students in Boulder County participated in the **From Our Lands to your Hands** program.



# grant funding



## COMMUNITY SUSTAINABILITY GRANTS

Boulder County's Environmental Sustainability Matching Grant Program is providing opportunities for municipalities in the county to undertake environmental sustainability priorities within their communities.

- Since the program launched in 2014, the program has funded \$724,380 in local community sustainability projects.
- The municipal grant awardees have pursued diverse community-wide projects, including, but not limited to, outdoor water conservation, public engagement on community renewable energy goals, efforts to streamline city permitting to increase solar and electric vehicle adoption, workforce development in underserved communities to save energy, public transit incentives and education, recycling and yard waste drop-off events, and resilient local food projects.

