Community Guide to Boulder's

Climate ACTION PLAN

2009/2010 PROGRESS REPORT

2009 Greenhouse Gas Inventory • 2009 Program Results • 2010 Progress and Plans

July 2010 • City of Boulder

introduction

Welcome to the 2010 Progress Report for Boulder's Climate Action Plan. We are pleased to report that our community greenhouse gas emissions went down for the third year in a row! Our collective efforts helped keep approximately 135,000 metric tons of carbon dioxide from entering the atmosphere in 2009.

Individuals, businesses and organizations across Boulder have taken steps to reduce their carbon footprint this past year. More than 600 homeowners took ClimateSmart loans to improve the energy efficiency of their homes and nearly 500 Xcel Energy rebates were received by commercial property owners for improving the energy efficiency of their buildings. More than 1,800 kilowatts of solar photovoltaic systems were installed; a 57 percent increase in total capacity which is now enough to power more than 950 households. Single family household trash sent to the landfill went down by 19 percent as a result of the new curbside compost program. Vehicle miles traveled within the Boulder Valley continued their downward trend, decreasing by more than 4 percent over the past two years. Additional efforts undertaken by community climate action leaders can be found in the program summary sheets of Appendix A. This report also describes the programs being designed for 2010 and some of their early successes.

While there is much good news and we're headed in the right direction, this past year's nearly 1.5 percent greenhouse gas reduction indicates that we need to do more if we are to meet our community goal of cutting greenhouse gases an additional 26 percent by 2012. Everyone needs to be involved to meet this sizeable challenge.

The City of Boulder — with its partners Boulder County, Xcel Energy, the Governor's Energy Office, the University of Colorado (CU) Green Teams, and local businesses and nonprofits — can help you take action on a variety of fronts. Assistance ranges from rebates for insulating your home or tuning up the HVAC system in your office building to subsidized Eco Passes for riding the bus and low-cost trees to plant in your yard. The City of Boulder is working to make these programs easy for you to understand and access. If you have questions or need help, give us a call at 303-441-4900.

As you read this report, reflect on what you've done this past year to reduce your impact on climate change. Celebrate our collective success and then gather ideas here for more actions you can take this year — with help from the city and its partners — and do your best to take on something new in 2010.

For more information on the Climate Action Plan and city programs visit www.bouldercolorado.gov/LEAD.

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Section one

2009 Greenhouse Gas Emissions Inventory

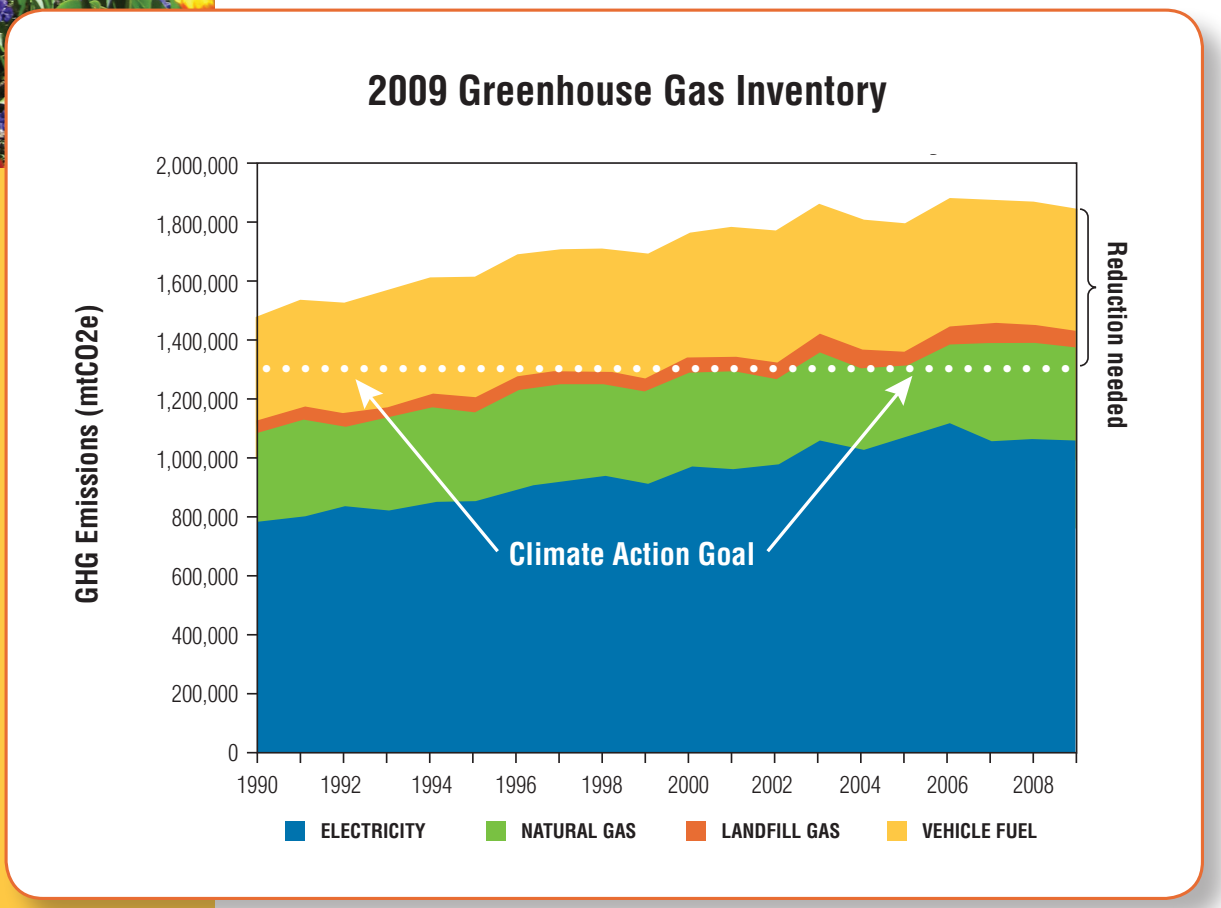
The climate action challenge can seem daunting, but it is achievable.

Community greenhouse gas emissions decreased by more than 1 percent in 2009 compared to 2008. This can largely be attributed to decreased electricity use (2 percent) by both the commercial and residential sectors. Electricity use reductions were supported by Climate Action Plan (CAP) programs, ClimateSmart loans and Xcel rebates. The weak economy and cooler than average summer also likely contributed. Notable changes in the inventory include:

- The amount of solar photovoltaic capacity increased by 57 percent,
- Transportation emissions decreased by 0.7 percent,
- Solid waste emissions went down by 1 percent,
- City hydroelectric generation increased by more than 3 percent,
- Windsource electricity use went down by almost 4 percent, and
- Boulder's population increased by 0.5 percent and the total number of jobs was unchanged from 2008.

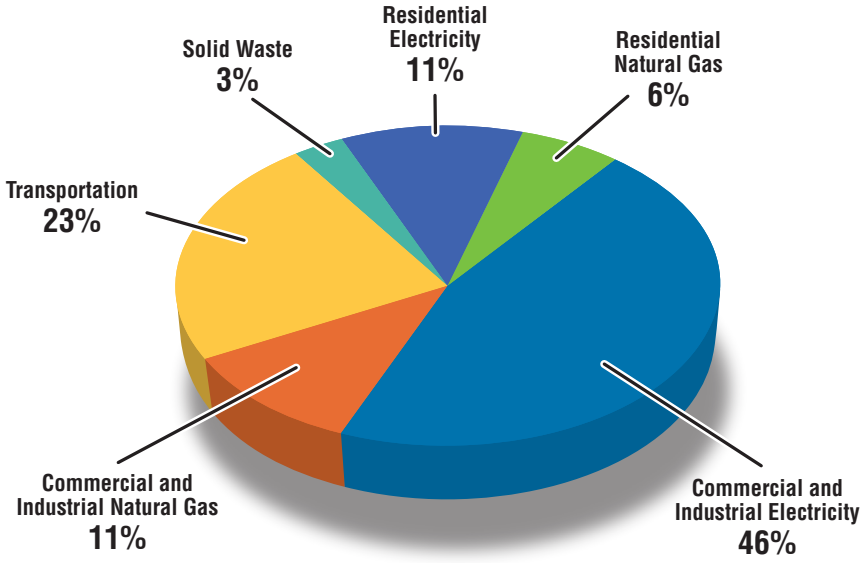
While emissions are going down, significant greenhouse gas reductions are still needed to meet the climate action goal by 2012.

This chart shows the emissions inventory from 1990 through 2009.



The chart below shows the 2009 greenhouse gas inventory categorized by sector and emissions source.

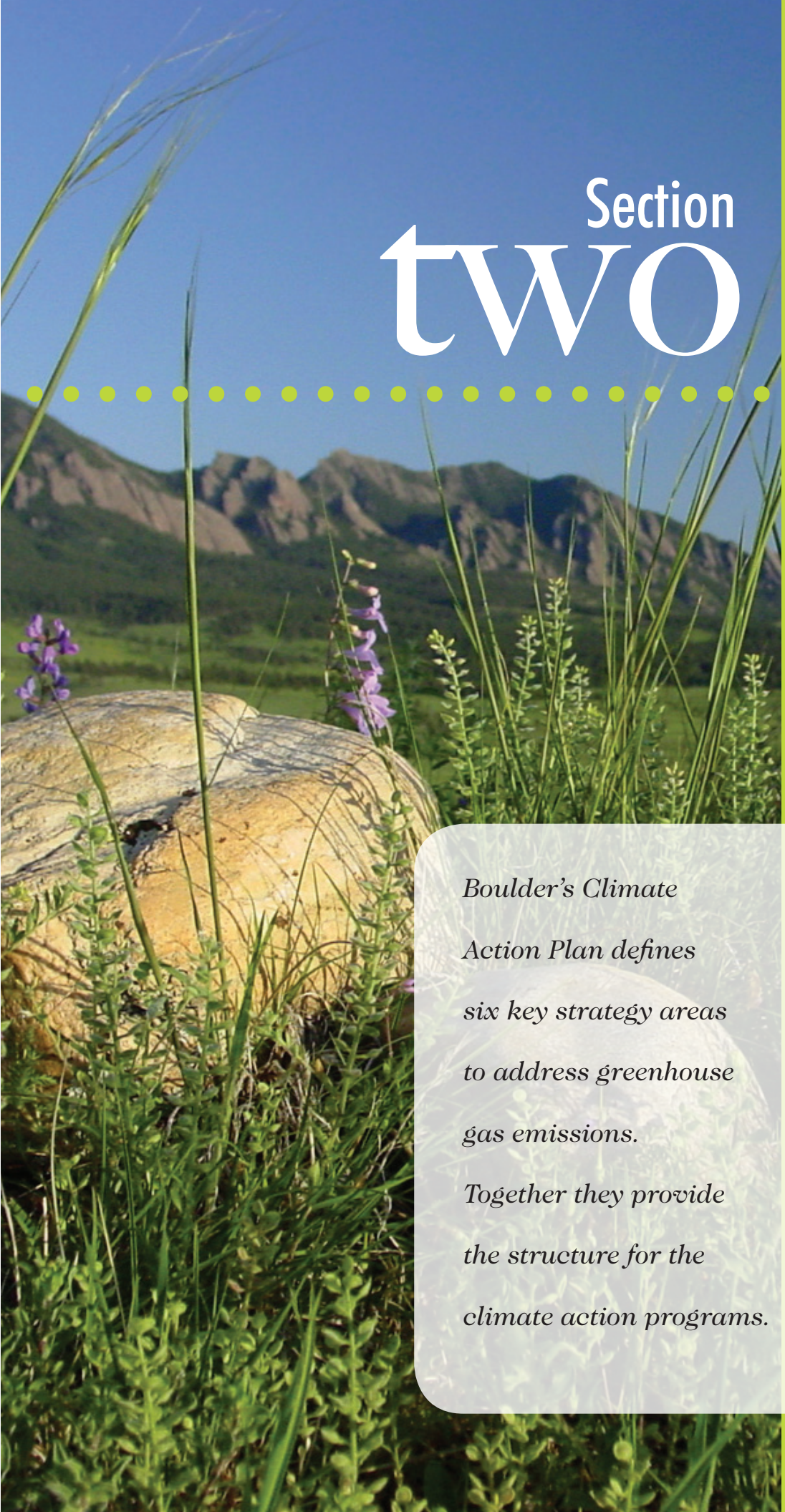
2009 Greenhouse Gas Emissions Inventory



The greenhouse gas *inventory* tracks *actual* electricity and natural gas use, Windsource subscriptions, renewable energy credit purchases made by Boulder residents and businesses, city hydroelectric generation not claimed by Xcel Energy, vehicle miles of travel within the Boulder Valley area and materials sent to the landfill. The inventory system follows standard methods. The *program results* included in this report represent emission reduction *estimates* associated with program participation and generally should be reflected in the emissions inventory as these estimated reductions show up as either decreases in carbon-based energy use or increases in alternative energy use. Energy supplied by solar PV and thermal systems is reflected as reductions in electricity and natural gas use, respectively.

The inventory totals may not reflect the entire amount of emissions reduced (135,000 metric tons in 2009) due to program impact, as the estimated reductions may be offset by other changes, such as new construction and new home appliances, increased plug loads, or business process changes that may increase electricity and gas use. In addition, some program successes don't represent reduced emissions but rather "avoided" emissions, such as is the case with new construction standards that require heightened energy efficiency in building construction.

progress



Section two

2009 Results and 2010 Progress

Boulder's Climate Action Plan defines six key strategy areas to address greenhouse gas emissions. Together they provide the structure for the climate action programs.

This section summarizes strategy area results and progress for 2009 and 2010. It covers primarily City of Boulder programs but also includes significant programs administered by Boulder County and Xcel Energy. Appendix A includes program summary sheets highlighting additional efforts undertaken by community climate action leaders around Boulder County. These summaries were generated as part of the April 2010 Community Climate Action Summit.

The Local Environmental Action Division (LEAD) is a new group within the city's recently reorganized Community Planning and Sustainability Department. The LEAD team is organized to provide energy and zero waste programs and services correlated to the Reduce Use, Ramp Up Renewables and Waste Not strategy areas. The Planning and Development Services workgroup, a shared service area between Planning and Public Works, oversees regulations related to land use and development in the city, and is responsible for the Build Better strategy area, with assistance from LEAD. GO Boulder, the work group in the city's Transportation Department that promotes the use of alternative modes of travel, coordinates Travel Wise activities. The Grow Green strategy area work is led by the Parks and Recreation Forestry team. Also as part of the reorganized Community Planning and Sustainability Department, a Regional Sustainability Coordinator position was created to leverage our local efforts through regional partnerships across all six strategy areas, with a key focus on Ramp Up Renewables.

Section 2.1

Strategy Area 1: Reduce Use

- Retrofit existing buildings and replace appliances to improve energy efficiency.
- Promote energy-conserving behavior.

Energy use in buildings accounts for 74 percent of greenhouse gas emissions in Boulder. Lowering energy use through improved energy efficiency and conservation is the easiest, most cost-effective way to reduce greenhouse gas emissions. Energy efficiency refers to ensuring that existing buildings are well-insulated and well sealed to minimize energy waste and are heated, cooled, and lighted as efficiently as possible. Conservation means using less energy on a routine basis, for instance, by turning off lights and powering down computers when not in use.

The essence of the Reduce Use strategy is to provide one-stop-shop, convenient programs that build on existing community efforts already underway and that leverage the city's resources to provide all Boulder businesses and residents with the information, services and financing they need to take action.

The city's new energy efficiency programs are being developed in coordination with Boulder County, the Colorado Governor's Energy Office, the Department of Energy (DOE), Xcel Energy, the Center for ReSource Conservation, Eco-Cycle and other community partners and consultants. These coordinated efforts will be bolstered by a $25 million DOE Retrofit Ramp-up grant awarded to Boulder County, the City of Boulder, the City and County of Denver, the Governor's Energy Office, Garfield County and other partners. About $12 million will be used in Boulder County over the next three years to target building energy efficiency retrofits

The city also received $1,017,000 in federal American Recovery and Reinvestment Act (ARRA) funds in 2009 to be invested over three years in the following areas: $400,000 for energy efficiency upgrades in city facilities, $250,000 in a citywide bikeshare program, and $367,000 for residential and commercial energy efficiency programs. Federal funds will allow the city to leverage its CAP tax and trash tax revenues, both of which were increased by the City Council in 2009 to support the community climate and zero waste goals. The CAP tax definitions were also clarified in 2009 to set large electricity customer (industrial) rates to lower levels consistent with the original intent of the tax.

2009 Accomplishments

While significant time was devoted to re-tooling the CAP strategy in 2009, previous CAP programs continued to operate. Through the residential and business programs, community greenhouse gas emissions were reduced by nearly 33,000 tons CO2e in 2009.

Residential Programs

Energy use in residences accounts for 17 percent of greenhouse gas emissions in Boulder.

- **Residential Energy Action Program (REAP)** promoted Xcel Energy residential energy audits (400 completed) and provided implementation assistance and access to financial incentives. The program is administered by the Center for ReSource Conservation and sponsored by the City of Boulder and other municipal partners.
- **Neighborhood Sweeps** sponsored by the city delivered 205 conservation kits to residents in the Orchard Grove neighborhood and Arborwood Apartments. Estimated annual emissions reduction is 122 tons CO2e.
- **ClimateSmart Loan Program** provided $9,760,000 in loans to 612 Boulder County residences, avoiding approximately 2,300 tons CO2e annually. The most common improvements are summarized in the table below.

Most Common ClimateSmart Loan Improvements

Measure	Number of Projects	Dollar Amount (rounded)	Percent of Total Dollars Loaned
Air sealing & insulation	662	$1,0402,000	11 %
Exterior windows and glass doors	227	$1,931,000	20 %
Solar PV	229	$3,576,000	37 %

- **SmartGridCity™ Project,** coordinated by Xcel Energy, installed approximately 20,000 advanced electric meters (smart meters) at Boulder residences.
- **Xcel Energy Audit and Rebate Programs,** were promoted by the City and experienced increasing levels of participation in 2009.

The table below summarizes some of the more popular residential programs. Approximately 425 tons CO2e will be avoided annually as a result of these programs.

Most Popular Xcel Energy Residential Programs	
Xcel Energy Program	**Boulder participants**
Low Income Kits	637
Energy Audits	400
Insulation Rebates	389
Heating System Rebate	294
Evaporative Cooling Rebate	189
Water Heater Rebates	94
Low Income Weatherization	60
Refrigerator Recycling	60

Business Programs

Energy use in commercial and industrial buildings accounts for 57 percent of greenhouse gas emissions in Boulder.

- **Energy Assessments** were completed at 183 commercial properties through a city of Boulder and Xcel Energy partnership. The city promotes Xcel Energy's assessment program and, with technical assistance provided through a contract with Boulder County Public Health and the Partners for a Clean Environment (PACE) program, provides technical assistance after the assessment is complete to help commercial property owners implement recommendations.
- **10 for Change Program** membership grew to over 65 business participants that achieved an overall energy reduction of 7 percent or 1,500 tons CO2e. This city program helps local businesses improve the energy efficiency of their buildings and operations.
- **A Commercial Green Lease** addendum was developed by the city with the assistance of local real estate professionals. This agreement allows commercial property owners and their tenants to share costs for energy efficiency improvements and other environmental initiatives in commercial rental properties.
- **A Commercial Lighting Study** and building stock analysis were completed by the city to gain a better understanding of Boulder's existing commercial properties and inform the development of new programs.
- **Xcel Energy Audit and Rebate Programs** for businesses are promoted by the City and have experienced increasing levels of participation in 2009.

This table summarizes participation in some of the commercial programs. Approximately 13,600 tons CO2e will be avoided annually as a result of the commercial programs. Because the average business energy use is more than 20 times the average household, energy efficiency improvements are high impact.

Most Popular Xcel Energy Commercial Programs

Xcel Energy Program	Boulder participants
Energy Assessment	183
Lighting Efficiency Rebate	87
Variable Frequency Drive Rebate	23
Cooling Efficiency	21
Motor Rebate	20
Custom Efficiency	19
Compressed Air Efficiency	8
Building Recommissioning	5

- **Regional Coordination Efforts** included active city support for energy-related bills at the Colorado legislature and involvement in Public Utilities Commission decision-making:
  - State Bill (SB)10-100 — Cross-boundary Energy Improvement Districts
  - SB10-096 — Transparency in gas and electric utility bills
  - SB10-180 — SmartGridCity™ Task Force
  - Xcel Energy's May 2009 Application for Electric Rate Increase
  - Security and Privacy Concerns of Smart Grid
  - SmartGridCity™ Pricing Pilot
  - SmartGridCity™ and Advanced Metering Technology Investigation
  - Pilot Projects Related to Street Lighting and Traffic Signal Lighting
- **City Organization Energy Efficiency Improvements** were initiated in collaboration with the Governor's Energy Office. The energy savings projects will be partially funded with $400,000 in ARRA funds allocated to the city. The city also received $1.5 million in Qualified Energy Conservation Bonds, which will provide low-interest financing to Phase 1 of the project. The initiatives will reduce GHG emissions in City of Boulder-owned buildings and operations by an estimated 5,000 tons CO2e, or 15 percent. The city organization's energy strategy team is also working with consultants to provide an analysis of an energy independence goal and its associated costs and impacts.

2010 Progress and Plans

- **$25 million Department of Energy (ARRA) grant** was awarded to Boulder County of which $12 million will fund countywide efforts to facilitate residential and commercial building energy efficiency retro-

fits, create financial tools including micro loans, implement a social mobilization campaign, and retain and create jobs.

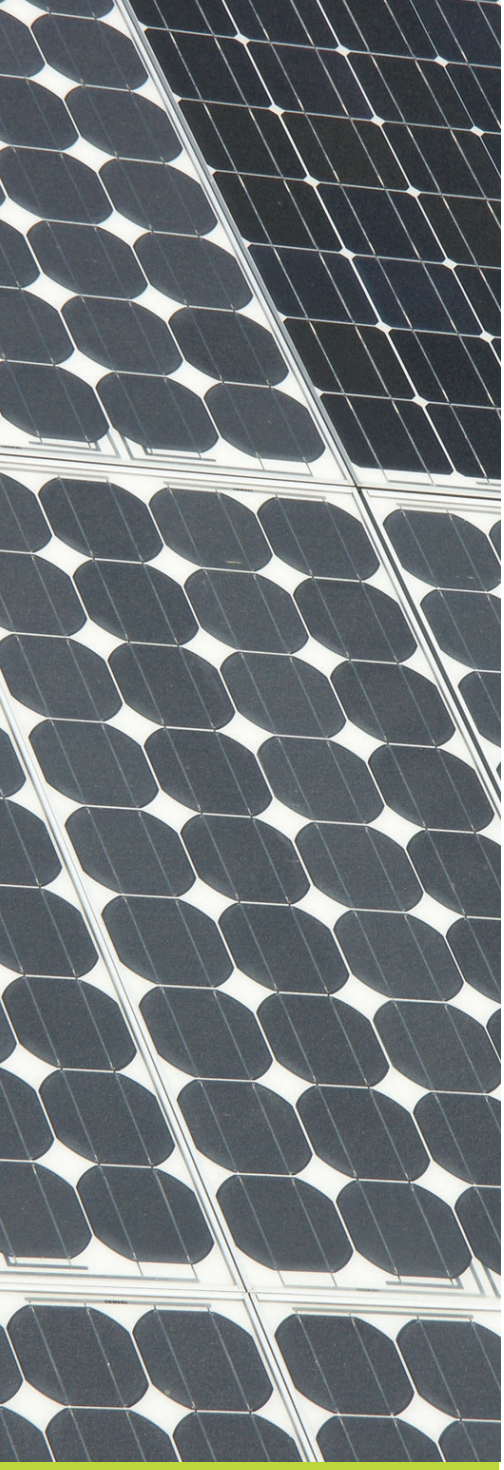
- **The first Community Climate Action Summit** was held in April and engaged organizations from throughout Boulder County in a conversation about achieving community climate goals. More than 170 people attended from a cross-section of local organizations, businesses and groups currently taking a leadership role in climate action. A keynote from Ann Hancock, director of the Sonoma County, CA, Climate Protection Campaign, kicked off the event. Attendees learned about current strategies, plans and programs and discussed how to collaborate more in the future. Posters from numerous organizations were on display, highlighting their successes and challenges in reducing — and helping others reduce — greenhouse gas emissions. Copies of the posters are included in Appendix A. An October summit will follow up on priorities identified in April for further discussion and action.

Micro Loans

Micro loans for small energy efficiency retrofit projects, ranging from $500 to $3,000, are expected to increase retrofit efforts, provide a revolving pool of funds, and help drive the market. The program will also serve as a national model for other communities.

Residential Programs

- **SmartRegs energy efficiency requirements,** if approved by City Council, will require energy efficiency improvements in rental properties, representing nearly half of Boulder's housing stock. Because the economic drivers do not exist in cases where a tenant pays utility bills, these codes will achieve emission reductions that would likely have not occurred otherwise.
- **Two Techs** program design began in February 2010 to create a countywide program that offers comprehensive, one-stop-shop home energy efficiency services. The program is expected to be running countywide in September 2010, with the goal of visiting 500 Boulder households this year and 3,000 per year in future years.
- **Social Mobilization** program design will be coordinated by Boulder County as part of the Retrofit Ramp-up grant with significant participation from the city. Consultant selection will be completed during the summer of 2010.
- **SmartGridCity™** capability was expanded through Xcel Energy's new MyAccount website, which includes online energy use data. Residents with smart meters can view more detailed electricity use data up to midnight the previous day. All residents have access to monthly electricity and natural gas use data as well as other features. Xcel Energy will be requesting participation in a SmartGridCity™ device pilot and a



pricing pilot later this year.

- **ClimateSmart Loans** for residents are on hold until mid summer pending program adjustments to address federal guidelines. Applications for the first round of commercial loans are due in July.

Two Techs

Two Techs is a one-stop-shop program to help residents create and implement a customized energy efficiency plan. A personal "energy concierge" installs several free energy and water saving items, helps residents through each step of the process, and provides ongoing support after work is complete.

Business Programs

- **EnergySmart@Work** is a new suite of countywide commercial programs designed to shift norms, tune up building energy systems and replace inefficient equipment. It will launch in the fall, with the goal of engaging 600 businesses this year and 1,000 per year in future years. The EnergySmart basic tiers of service include:
  - **Learn It** — Efficiency information and door-to-door assistance
  - **Tune It** — Quick and easy efficiency improvements
  - **Change It** — Assistance to identify projects and upgrade equipment, including financial incentives
- **10 for Change program** membership (over 100 as of July 1), offerings and services will expand throughout the year and will continue to help Boulder businesses make energy efficiency upgrades.
- **Green Lease Addendum** is under evaluation by community members and will be available for commercial properties later this summer to attach to their leases.
- **Commercial Energy Conservation Ordinance (CECO)** (phase two of SmartRegs) will look carefully at the existing stock of commercial buildings to evaluate the feasibility and implementation options for improving energy efficiency. Current research will continue into the fall.
- **City organization energy savings performance contract** completed the first phase of audits in city-owned buildings in March and will begin construction in August. New funds leveraged for the contract include: $1.5 million of Qualified Energy Conservation Bonds (QECBs) through the Governor's Energy Office, $50,000 from the Colorado Carbon Fund and $733,000 from Xcel Energy's solar rebate program. Projects include new heating and cooling systems, indoor and outdoor lighting, and solar PV and thermal hot water systems. Two more phases of audits and implementation will take place in 2010 and 2011.
- **The City organization Energy Strategy Team** is expanding the energy independence goal analysis completed in 2009 to cover other goal areas including greenhouse gas emissions, solid waste, transportation and water and will develop a strategic plan for achieving the broader set of goals.

Section 2.2

Strategy Area 2: Build Better

- Maximize opportunities for energy efficiency in new buildings.

Energy use in buildings accounts for 74 percent of greenhouse gas emissions in Boulder. The best time to ensure maximum energy efficiency in buildings is when they are being designed and built. This can include siting buildings for solar access, building passive and active solar systems, ensuring shading over windows, and making use of the latest technologies for insulation, circulation and energy supply. Boulder implemented improvements in building construction through its nationally-recognized Green Building and Green Points programs which were updated in 2008, with new requirements effective in March 2009.

2009 Accomplishments

Community greenhouse gas emissions avoided as a result of the city's new construction programs are estimated at 980 tons CO2e for 2009.

- **Residential construction** included 47 new single-family homes, 9 new townhouses, 3 new duplexes, 129 new condominium/ apartment units and 432 residential remodels constructed under the energy efficiency requirements in the residential building code. Twenty-six homes received ENERGY STAR rebates from Xcel Energy.
- **Commercial construction** included 16 new commercial buildings and 232 commercial building remodels constructed under the increased energy efficiency requirements in the commercial building code.

2010 Progress and Plans

- **Residential Green Building and Green Points** program may be replaced by or integrated with the National Green Building Standard.
- **Energy efficiency standards** for new commercial buildings may be revised based on proposals from the Boulder County Consortium of Cities' Codes Working Group.
- **A new Regional Fire Training Center** will be opened in late July and will be submitted for LEED Gold certification making it the first City of Boulder building to be built to this standard.

Section 2.3

Strategy Area 3: Ramp Up Renewables

- Promote use of renewable energy sources for individual buildings and sites.
- Increase renewable sources in our regional energy supply.

Solar, wind, and hydroelectric power emit virtually no greenhouse gases. Installations of photovoltaic systems and solar thermal systems have become more common in recent years thanks to rebates from Xcel Energy, ClimateSmart loans, and federal tax credits. Also, the City of Boulder operates seven hydroelectric plants to generate electricity and captures methane, a by-product of wastewater treatment, to heat buildings and generate electricity.

Another way that households and businesses support renewable energy is by subscribing to Windsource (wind power from Xcel Energy) and purchasing offsets from organizations like the Colorado Carbon Fund. While these options have lower upfront costs than system installations, the greenhouse gas benefit lasts only as long as the subscription or purchase. After that, unless the subscription or purchase is ongoing, the wind energy or offset credit can be sold to someone else, possibly not in Boulder.

2009 Accomplishments

Community greenhouse gas emissions were reduced by approximately 74,000 tons CO2e in 2009 from renewable generation and energy use.

- **Solar PV systems** are going strong in Boulder. The city began tracking PV systems through its building permitting system in 2007 when the city's solar rebate was implemented. In 2009, 1,800 kW of new PV were permitted, bringing the total of new permitted PV to nearly 5,000 kW since 2007, which generated approximately 7,200 MWh of electricity in 2009. The average residential system size is 4 kW.
- **Financial incentives for solar** continued to be provided by Xcel Energy, the federal government and the City of Boulder, although the amount of the Xcel Energy rebates was reduced. The ClimateSmart Loan Program spurred interest in PV systems in spite of the poor economy with 229 systems financed throughout the county. The city's ClimateSmart solar grant awarded nearly $75,000 to six homeowners in the permanently affordable housing program and to three non-profits.

- **Windsource,** Xcel Energy's voluntary wind program remains popular although the total amount of Windsource electricity purchased by Boulder customers went down by nearly 4 percent. Some fraction of this reduction may be related to a reduction in electricity use by participating residents and businesses.
- **City organization solar systems** are in operation at four city facilities — at the Municipal building, Park Central and George Reynolds Library, as well as a solar thermal system at North Boulder Recreation Center.
- **Regional sustainability activities** included active city support for the following renewable energy-related bills at the Colorado legislature:
  - House Bill (HB)10-1342 — Community Solar Gardens
  - HB10-1001 — Electric Utility Renewable Energy Standards
  - HB10-1182 — Clean Energy Development Authority Financing Limits

Additionally, the city and Boulder County have partnered with the City and County of Denver, Environmental Defense Fund, Western Resource Advocates and the University of Colorado to develop the Planning for Responsible Electric Portfolio and Advancement of Renewable Energy (PREPARE) Coalition.

The coalition is sponsoring a study to assess system-wide and site-specific options for renewable energy integration into Xcel Energy's power generating portfolio. This will include investigating the feasibility of generating electricity or preheating boiler water with biomass, biogas, concentrated solar power, and/or solar photovoltaic systems.

The results of the study will be used to advocate the retirement, repowering and/or replacement of the coal-fired units at Cherokee (Units 1-4 representing approximately 715 MW) and Valmont (Unit 5 representing approximately 186 MW) as an important and necessary step to reduce air pollution and greenhouse gas emissions.

2010 Progress and Plans

- **A Clean Energy Strategy for Boulder** will be a key focus in the 2010/2011 time period. Work has already begun through the Decarbonization Tech Team, a group of community experts, who drafted the following goal statement:

  Our goal is to assist the Boulder community in meeting and exceeding its climate goal (Kyoto goal of 7% below 1990 emission levels by 2012) by focusing on switching from fossil fuel energy to more clean renewable energy. We will focus on strategies for "greening our electrons" and other technologies and will work with other tech teams to reach and exceed our

emissions reduction goals and to serve as a model to other cities and communities. The decarbonization numeric goals suggested by the Tech Team are: 30% reduction in the carbon intensity of our energy supply by 2012, and 80% to 100% by 2020.

City staff will be conducting a scoping process in Fall 2010 in preparation for a concerted planning effort in 2011.

- **Residential and commercial programs** described in the Reduce Use strategy will provide information on how to incorporate renewable energy into personal and business plans for energy and greenhouse gas reductions.
- **ClimateSmart solar grants** totaling $80,000 were awarded to three non-profits in May, including: housing being developed by Thistle Communities that will be transferred to the city's permanently affordable housing program, the Geological Society of America and a Flatirons Habitat for Humanity housing project.
- **City organization energy performance** contract will install three solar PV and two solar thermal systems at the three recreation centers and a solar PV system at the Main Library. The 1 megawatt PV system at the city's wastewater treatment plant on 75th Street will be generating power starting summer of 2010.
- **Plug-in hybrid electric vehicles** will be funded through a $500,000 Water and Energy Appropriations Bill. This three-year project, starting in fall 2010, will develop and integrate plug-in electric technology in the City of Boulder.
- **Medical marijuana growers** in Boulder are now required to directly offset 100 percent of their electricity consumption through the purchase of renewable energy in the form of Windsource, a verified subscription in a Community Solar Garden, renewable energy generated on-site, or equivalent.
- **Community Solar Gardens** legislation goes into effect October 2010. City staff are working with interested groups to prepare for development of solar garden projects and are analyzing the city's zoning code to identify potential revisions needed to accommodate new facilities.
- **Rooftop Renewables** will be on the November 2010 ballot as voters consider a potential change to the City Charter to allow renewable energy installations to exceed the 55 foot height limit and current roof coverage limits.

Section 2.4

Strategy Area 4: Travel Wise

- Increase the percentage of trips made by transit, bike and walking.
- Encourage the use of low-emission vehicles.

Transportation accounts for 23 percent of greenhouse gas emissions in Boulder. This percentage would be higher without ongoing community support for alternatives to vehicles. Boulder is a national leader in clean transportation and sustainable development: a high (and growing) percentage of residents, workers and students bike or walk to get around, rather than drive. The city supports this by providing a growing network of multi-use paths and other bicycle and pedestrian facilities, and by continuing its long-standing commitment to being a compact city. Boulder's extensive, locally-subsidized bus service is also well-used by the community. The city also encourages the use of low-emission vehicles through its fleet purchases and encourages priority parking for hybrid vehicles. However, the push to provide clean transportation choices must be sustained and expanded, as almost a quarter of Boulder's greenhouse gas emissions are attributed to vehicle use.

2009 Accomplishments

Vehicle miles of travel decreased by more than 1 percent, contributing to a greenhouse gas emissions reduction of approximately 3,000 tons CO2e in 2009.

- **RTD's Eco Pass** programs in Boulder continued to expand in 2009. The number of eligible Eco Passes in Boulder increased by over 3,000 for a total of approximately 68,000 passes available to employees, residents and CU students. Approximately $38,000 in CAP funds were used as additional funding to subsidize neighborhood Eco Pass programs. Approximately 7,000 households in 42 Boulder neighborhoods received nearly 12,000 passes. The Eco Pass, particularly in combination with parking management policies, continues to be one of the most effective tools for changing travel behavior, reducing vehicle miles of travel (VMT) and transportation-related emissions.
- **Travel Diary Survey,** a periodic travel behavior survey of Boulder residents, was expanded to collect more details on specific populations to assess potential future expansion of all-access transit passes, similar to Eco Passes. The populations include affordable housing residents; Boulder Valley School District students, faculty and staff; and residents

and employees of mixed-use/transit-oriented developments. An investment of $2,000 of CAP tax funds was put towards the survey.

- **Bikeshare for Boulder** would provide a network of self-service bicycle stations at high-demand locations. Work was initiated in 2009 when the feasibility, possible designs, and impact of a bikeshare system were analyzed with the assistance of resident technical committees. The program will receive $250,000 of the city's 2009 ARRA funds.
- **Driven to Drive Less Grant** was received by GO Boulder from federal transportation funds to develop an innovative, highly visible "one less car" campaign in which residents and employees in Boulder can pledge to not drive their vehicle for specific periods of time. Participants will be given incentives and tools to assist them.
- **City Energy Strategy Team** increased the goal of purchasing more efficient and lower emission vehicles, including alternatively fueled vehicles, from 65 percent of purchases to 90 percent of purchases. Also, the annual VMT target for city fleet use was reduced by nearly 3 percent. Both of these new goals were met. Emissions from city fleet operations for 2009 were decreased by 25 percent compared to 2008 and were 35 percent less than 1990 emission levels (1,962 tons CO2e compared to 3,307 tons CO2e); meaning city Fleet Services has met its own Kyoto Goal targets!

2010 Progress and Plans

- **GO Boulder** will continue efforts to expand access to Eco Passes and develop new all-access transit pass programs. The CAP Transportation Tech Team has identified possible programs and tools to assist existing and new neighborhood coordinators, which could be funded with CAP tax funds. GO Boulder is working with Boulder County and the Boulder Valley School District (BVSD) to examine the feasibility of an all-access pass for BVSD students, faculty and staff.
- **Bikeshare** selection process began in May 2010 to hire a vendor to design, implement and maintain the system that will be launched in 2011.
- **Eco Pass Improvement Campaign** (EPIC) will continue to provide customized outreach and creative web-based marketing to increase Eco Pass pick-up rates and use by employees of participating businesses.
- **Reduce Use** programs (e.g., Two Techs) will coordinate with the Driven to Drive Less campaign and provide other information on how to reduce transportation emissions.
- **City Energy Strategy Team** is preparing a Fleet Strategic Business Plan to identify goals and initiatives linked with other city plans including the CAP. As a SmartGridCity™ project, the city will convert hybrid vehicles to plug-in hybrids with vehicle-to-grid capability.

Section 2.5

Strategy Area 5: Waste Not

- Reduce and eventually eliminate the amount of waste going to landfills.

Solid waste accounted for 3 percent of greenhouse gas emissions in 2009. This percentage would be higher without the longstanding community commitment to recycling and reducing waste. Landfill waste emits methane, so reducing waste reduces greenhouse gas emissions. In fact, methane is 25 times more potent as a greenhouse gas than carbon dioxide. Boulder has set a goal of becoming a zero waste community. Through curbside collection of recyclable and compostable materials and a range of other recycling and re-use programs, the community's efforts to reduce its landfill waste will reduce greenhouse gas emissions.

2009 Accomplishments

Community greenhouse gas emissions from solid waste were reduced by approximately 625 tons CO2e or 1 percent in 2009.

- **Total tons of solid waste** generated went down by 1 percent. Residential solid waste diversion through recycling, composting and other programs increased from 38 percent to 48 percent and commercial diversion increased by 1 percent to divert 26 percent of waste.
- **Curbside single-stream recycling** and compostable materials collection became available to all single-family homes. The types of plastics that can be recycled were also expanded. A fall 2009 survey showed high satisfaction levels with 62 percent of respondents reporting a decrease in trash generated and 75 percent reporting no wildlife disturbances.
- **CU, Eco-Cycle and Growing Gardens** continued to provide zero waste education to Boulder residents and students at CU and BVSD through a city partnership. The CU Green Teams delivered recycling guidelines to 1,545 off-campus (Uni-Hill and Goss Grove) student households and spoke with 632 students, 74 percent of which were recycling at their homes.
- **The city's trash hauler ordinance** was amended to require haulers to include appropriate recycling collection for multi-family housing.
- **New facilities for ReSource and CHaRM** are closer to reality since the City of Boulder coordinated with Boulder County to purchase 6400 Arapahoe Road. The goal is to provide upgraded, expanded facilities for Eco-Cycle's office, the Center for Hard to Recycle Materials (CHaRM)

and the Center for ReSource Conservation's ReSource used building materials yard. ReSource moved onto the site in November 2009.

- **A new Hazardous Material Management facility** is also in the works. An intergovernmental agreement between Boulder and seven other municipalities (Boulder County, the City and County of Broomfield, the cities of Lafayette, Longmont and Louisville, and the towns of Erie and Superior) have agreed to fund construction and operation of a new facility on 63rd Street, behind the Boulder County Recycling Center.
- **City organization Zero Waste program** was launched to provide single stream recycling and composting in all city facilities. The new system was set up in over half of the facilities in 2009. More than 120 tons of recyclable materials and nearly 16 tons of compostable materials were collected from city facilities in 2009.

2010 Progress and Plans

- **Hazardous Materials Management facility** construction began in May; the facility will open in 2011.
- **New facility development** includes planning for building and site improvements at the 6400 Arapahoe Road site in partnership with Eco-Cycle and the Center for ReSource Conservation (CRC).
- **Reduce Use programs** (Two Techs and EnergySmart) will provide residents and businesses with information on how to incorporate zero waste into their carbon reduction efforts.
- **Master Plan for Waste Reduction** update will be initiated in late 2010.
- **City organization Zero Waste services** are now available at all city facilities. Expanded employee outreach began in May.

Section 2.6

Strategy Area 6: Grow Green

- Plant more trees and protect the existing urban forest.

Trees in the urban forest and on parks and open space absorb carbon dioxide, the most prolific greenhouse gas. Trees also reduce energy use in buildings by providing shade and blocking wind. Further, maintaining the city's urban growth boundary and directing growth to "infill" areas helps protect surrounding natural areas and green spaces.

2009 Accomplishments

- **City tree replacement ratio** increased to 1:1, with a long-term goal of 2:1 for trees on city-owned property, rights-of-way and medians. There were 308 trees planted in city parks, street rights-of-way and median areas through the Parks & Recreation Forestry tree planting program. Locations include: the downtown business improvement district, residential rights-of-way, city parks, Flatirons Golf Course and Boulder Reservoir. Some of the trees were funded through a grant from Denver's Mile High Million Program while others were donated by the Boulder Yamagata Sakura Project and Boulder County Parks and Open Space. The city also provided 100 trees sold through the Center for ReSource Conservation to plant on private property.
- **Tree management and health** program continued to detect and promptly remove diseased trees and prevent spread to healthy trees.

2010 Progress and Plans

- **City requirements** to improve tree protection are under consideration as are potential changes to strengthen tree planting and protection specifications in the city's Design and Construction Standards.
- **Approximately 380 trees will be planted** by Parks & Recreation Forestry in 2010 in city parks, street rights-of-way and median areas. Locations include: the downtown business improvement district, University Avenue to support the "Greening the Hill" program, several parks and medians, and Flatirons Golf Course.
- **Reduce Use** strategy area programs will inform residents and businesses on how to incorporate trees and landscaping in their carbon reduction efforts.

ClimateSmart

Working together to reduce global warming

www.beClimateSmart.com

Appendix A Climate Action Summit Posters

Organization

Whittier Neighbors for Sustainability (WNS)

Description: WNS was formed in spring 2008 and is dedicated to promoting a community-focused, sustainable neighborhood.

Goals:
- Build a sense of community among neighbors
- Share ideas and work together to make our neighborhood more sustainable

Program success: Movie night and cookie bake-off in a neighborhood park in July 2008 and August 2009. We showed short, environmental-themed videos and shared cookies, and attendees said that they enjoyed it. Approximately 100 neighbors attended in 2009, and we expanded the WNS email list to 150 members.

Challenges: The biggest barrier is that steering committee members are busy, and we have struggled to maintain momentum in meeting and planning events

Needs:
- If some city-wide climate action events were organized so that we could then advertise to our neighborhood members, this would likely help us to build momentum without doing all of the work ourselves.
- Have city or other representatives come to our neighborhood group to talk about how we can participate in existing programs, such as Two Techs and a Truck, the ClimateSmart Loan Program, and Smart Grid City.

Short-term goals: Ideas for future activities include:
- Presentations by neighbors about actions they have taken to live sustainably
- Presentations by organizations/companies about products/services for living sustainably
- Learning projects: working together to make a neighbor's home more sustainable (e.g., installing new windows together)
- A sustainable home tour
- A block party/yard sale/sustainability fair

COMMUNITY climateaction SUMMIT

Organization

Shanahan Neighbors for Climate Action

Program Name

Ongoing global warming education and carbon reduction programs

Description: Monthly events with noted speakers or other media to educate our neighborhood about global warming and its effects, and on how they can most effectively reduce their carbon footprint. We set an "action item" each month for attendees to complete. This may be calling our legislators to encourage support of pending climate legislation, or more direct action, such as eliminating a certain number of automobile trips that month.

Goals: To create a sustainable neighborhood environment that minimizes our negative impact on the environment.

Program success: Encouraged and sponsored 30 homes to take part in the "LC-30" program in 2007-2008, to reduce participants' carbon footprint and measure and report progress and results. Achieved an overall average reduction of 23%.

Challenges:
- Effectively communicating information
- Identifying paths to achieving goals
- Motivating people who are not fully aware of the urgency of action
- Getting people, once educated, to follow through with action

Needs:
- Gathering demographic data about the households in our member group
- Identifying cost-effective ways they can achieve demonstrable results
- Learning better methods to monitor and measure progress results, and to motivate those who have yet to take any effective action toward carbon reduction; and learning how others have achieved substantial goals
- Interested in coordinating our efforts with the city to plan neighborhood energy efficiency initiative similar to Techs and a Truck and, if appropriate, beta testing the city program

Short-term goals:
- Continuing to have educational programs; we will be hosting Amory Lovins and Rocky Mountain Institute in April.
- Currently in the planning stages of an awareness and carbon reduction campaign, targeting those members that have not yet made demonstrable progress in carbon reduction.
- We have discussed a 10% decrease in our carbon footprint as a 2010 goal but are struggling with how to achieve and measure it.

COMMUNITY climateaction SUMMIT

Organization **Newlands Neighbors**

Program Name **Greenlands**

Description: Newlands Greenlands is a community based volunteer organization working toward a sustainable community through green social and educational gatherings and information sharing in the Newlands neighborhood of Boulder. This neighborhood is roughly defined as Alpine to Iris, Broadway to Third Street. (approx. 1,000 households).

Goals: Work toward a sustainable community

Program success:
- Created a core of 9 neighbors that serve as the steering committee
- The first neighborhood event, Climate Action Kickoff, was held in Jan.2008. Topic: What can neighbors do to help Boulder achieve the Climate Action Goals? Approximately 75 people attended.
- Website has grown from the original 12 users to 81 registered users in approximately 18 months.

Challenges:
- Lack of personal awareness on how lifestyle affects the bigger environment.
- Making time for steering committee meetings to plan and execute events.
- Recruiting more volunteers has been difficult.
- Getting the word out on events.

Needs:
- Free meeting space at North Boulder Rec. Center to show environmental films, or to invite speakers.
- Help organizing block leaders since current core team do not have the time/energy to make this happen.
- Funds for printing a tri-annual newsletter and website hosting fee
- A city-wide neighborhood website may be better than having each neighborhood pay for and maintain a site.

Short-term goals:
- Build community on a small scale.
- Increase our "registered users" on Greenlands website (currently @ 81 as of 3/29/10).
- Use website, posting flyers in neighborhood, and yard signs to announce events.
- Grow slowly and cultivate the core that has developed
- Gardening and local food events are planned

COMMUNITY climateaction SUMMIT

Organization

Center for ReSource Conservation (CRC)

Description: We provide programs and services that empower individuals, families and businesses to turn natural resource conservation beliefs into action in their daily lives. We share practical solutions for environmental living through print and on-line communications materials, direct services, events, workshops, demonstration projects, tours, and walk-in/email/and phone-in requests for information.

Goals: REAP outreach to 1,500 customers, with 398 participating in audits & 225 participating in the action program, with estimated GHG reduction of 440 metric tons

Program success:

- In 2009 the CRC's energy division delivered direct outreach to 924 customers, resulting in 465 energy audits and 269 action consultation. 60% of homes reduced their greenhouse gas emissions; 80-90 % made home improvements as a result of the action program, with an investment average of $7,185 per home for a total homeowner investment of $1.9 million, resulting in a reduction of 230 metric tons per home per year.
- In 2009 our water division conducted over 2,000 free sprinkler system efficiency checks in 9 cities, sold 500 Garden-In-A-Box kits in 2009 and 700 in 2010.
- In 2009, CRC's ReSource yard moved to its new location at 6400 Arapahoe, resulting in immediate increases in material donations, customers and sales.

Challenges:

- Increased financial resources to increase scale and rate of adoption across all fronts.
- Need to plan and implement for large-scale adoption of products and services.
- A more cohesive approach towards marketing and dissemination would produce more results.

Needs:

- Financial resources to hire community outreach & marketing staff
- Venture capital for income-generating activities
- Business development assistance (business plan writing, market analysis, etc.)
- Technical assistance for homeowners interested in energy efficiency and conservation
- Increased marketing, social marketing, and community outreach
- Better coordination between agencies to reduce duplication and identify gaps

Short-term goals:

- Commercialize "Garden-In-A-Box" to extend its reach, impact and sales to 4,000 customers a year, and generate income to support the program.
- Engage in more sustained grassroots efforts and work directly with homeowners.
- Work with homeowner associations, neighborhood groups and informal community groups (especially in Boulder County) to further promote energy conservation measures and increase the adoption of water conservation practices.
- Incorporate agriculture into the product mix.
- Explore possibility of ReSource engaging in the production of furniture from reused materials it collects. Also establish Boulder Community Tool Library at ReSource.

COMMUNITY climateaction SUMMIT

Organization

City of Longmont

Program Name

New Energy Community "Main Street" Program and Commercial Efficiency Matching Grants

Description: The city partnered with the Longmont Downtown Development Authority to offer free comprehensive energy audits to small to medium sized businesses in the downtown area. This was accompanied by implementation services that helped businesses understand their audit report, obtain bids from local contactors, and apply for all available rebates and incentives. The city also offered matching grants to help businesses pay for the projects, up to $5,000 or up to 70% of the total project cost (including all other incentives).

Goals: To increase the number of businesses that implement energy or water efficiency measures.

Program success:

- Significant increase in number of businesses that implemented efficiency measures after an audit.
- Between August and December 2009, 21 businesses had audits completed for their buildings. Of these, 13 businesses (62%) completed projects.

Challenges: Split incentive between building owners and tenants and longer pay backs remain major barriers to implementing measures that go beyond lighting upgrades.

Needs:

- Help building effective partnership with business organizations that can champion these programs and increase business trust, understanding and participation.
- Collaboration among diverse governmental, NGO and business organizations to increase awareness and understanding that the rebates and incentives may not be around forever and that higher performance standards and higher energy costs are on the horizon.

Short-term goals: Offer a slightly modified version of program that will bring free, or highly subsidized, tune-up services to targeted businesses, which will allow businesses to improve their efficiency in a very quick and streamlined process.

COMMUNITY climateaction SUMMIT

April 2010

Organization

The Environmental Center at the University of Colorado, Boulder

Program Name

Student and Community Outreach on Renter Efficiency (SCORE)

Description: Teams of two CU undergraduate students visit homes of student renters to educate them on basic conservation and efficiency actions that will save them money. The teams also conduct a walk-through diagnosis of the property's efficiency and install about $30 worth of free equipment: CFLs, low-flow showerheads, water heater pipe insulation and weather-stripping.

Goals:
- Educate and recommendations to student renters on good energy habits and knowledge of residential efficiency.
- Understand the current state of efficiency in several rental properties to inform and enhance future outreach efforts.
- Inform the creation of a customized energy conservation and efficiency occupant user manual.
- Achieve immediate energy savings and emissions reductions through the direct installation of energy-saving items, e.g. CFLs.
- Qualify student renters (and their landlords) for low-income weatherization funding and services available through Long's Peak Energy Conservation.

Program success:
- The program was funded with a Wells Fargo grant.
- In February and March 2010, the program employed 13 students, visited 73 rental properties and spoke with over 220 students in their homes about energy use behaviors.
- Installed almost 700 CFLs, 85 low-flow showerheads, 50 pieces of window film insulation and 80 feet of water pipe insulation.
- Estimated $6,500 annual energy savings and 55 tons of annual carbon emissions reduction from direct installs (not including behavior changes).

Challenges: No significant barriers, although teams could have visited more rentals and students with greater funding and an earlier start.

Needs: No additional assistance needed at this time.

Short-term goals: Program will continue in October 2010, pending funding support. Target for October – March will be an additional 100-150 student rentals.

COMMUNITY climateaction SUMMIT

Organization **Elevations Credit Union**

Program name **Sustainability Improvements**

Description: Elevations used local resources and utility rebates to incrementally reduce energy use, reduce carbon footprint and work towards becoming a zero waste business.

Goals: Reduce operating costs, improve building performance and employee comfort.

Program success: By reducing the size of our HVAC units and replacing them with smaller, higher efficiency units, we reduced energy consumption, reduced facilities operating costs and improved employee comfort.

Challenges: The lack of a smart meter is inhibiting our ability to improve our utility consumption monitoring efforts.

Needs:
- Assistance with securing funding for a data center audit, a retro-commissioning project and a re-lamping and re-ballasting project for a 60,000 square-foot office building.
- Assistance with developing a 5-7 year strategic sustainability program for the organization.
- Collaboration with other facility managers who have already experienced the same challenges we are currently experiencing. We would benefit from knowledge they've gained through their sustainability planning journey.

Short-term Goals:
- Complete a retro-commissioning project
- Expand our recycling programs to include compostables
- Utilize more wind and solar power resources

COMMUNITY climateaction SUMMIT

Organization

Alliance for Climate Education (ACE)

Description: National non-profit organization dedicated to educating America's high school students about the science behind climate change and inspiring them to do something about it—while having fun along the way.

Goals:
- Reach 22,500 high school students in Colorado this spring semester.
- Start action teams or provide resources for existing environmental groups in 90% of the schools where we give presentations.
- Create a network of local resource partners to keep students engaged.

Program success:
- Reached over 14,000 Colorado students this semester
- Formed official partnerships with four organizations and in conversation with four more.

Challenges:
- Difficulty scheduling presentations because: schools were already booked for their all school presentations, feel climate change is too controversial or teachers are too busy to learn about new programs like ACE.
- Staying abreast of the latest initiatives, legislation and issues.

Needs:
- Get to know others working on climate change in Colorado to help us reach more students.
- Create volunteer or internship opportunities for our students.
- Establish contacts at more schools.
- Increase knowledge about how climate change is affecting Colorado to educate students.
- Measure carbon reduction impact of ACE in student households.

Short-term Goals:
- Continue to get connected with schools and partnerships.
- Look at 2009-2010 school year data and determine our new goals for 2010-2011.
- Set new goals for partnerships and the "Do One Thing" campaign
- Since we are new to Colorado, figure out who we need to know and how we can help.

COMMUNITY climateaction SUMMIT

Organization

Boulder Green Building Guild

Description: Non-profit trade organization representing a wide range of leaders in the green building movement. Dedicated to promoting healthier, resource-efficient homes and workplaces by: advancing the craft of green building; supporting members environmentally-responsible endeavors; providing effective volunteer opportunities; and serving as a focal point for communication on green building.

Goals: Make green building common practice in Boulder County

Program success:
- Almost 600 members and an outreach of almost 3,000
- Over 30 well-attended educational/networking events per year
- Resource for the media
- Great working partnership with the city and County

Challenges:
- Lack of case studies that demonstrate ROIs and provide "befores" and "afters" of actual retrofits that could be easily replicated locally
- Quality control and know-how by subcontractors
- Knowing about all the new products and technologies
- Complication of jurisdictions having "different" green building codes
- Understanding what classes/certifications are of value for those wanting to join the field

Needs: Help bridging to the public and business owners

Short-term goals:
- Building relationship with Center for ReSource Conservation to outreach to the public.
- Get more business for our members.
- Get all the Boulder County jurisdictions involved in helping with outreach to their contractors

COMMUNITY climateaction SUMMIT

Organization **City of Boulder**

Program Name **Climate Action Plan Transportation Tech Team**

Description: The Tech Team's purpose is to serve as an advisory group to city staff and aid in the development of programs/services that reduce transportation-related emissions.

Goals: To meet the CAP goal for transportation-related emissions: 116,000 metric ton reduction per year by 2012 or approximately a 25 percent reduction from 2006 transportation levels.

Program success: 2009 CAP funds were used to maintain participation levels in the Neighborhood Eco Pass Program. In-depth study of the affordable housing population in Boulder to expand the Eco Pass program.

Challenges: Even with additional funds from the CAP tax, GO Boulder's limited funds will probably not be enough to meet the goal without changes in external factors, such as fuel efficiency and increased gas prices.

Needs:
- Increase pick-up rate and use of Eco Passes
- Expand neighborhood Eco Pass programs
- Innovative programs to motivate voluntary travel behavior change
- Outside perspectives and ideas on how to stimulate travel behavior change given obstacles to driving less

Short-term goals:
- Develop tools to aid neighborhood Eco Pass coordinators
- Expand pilot program to develop customized Eco Pass campaign for employers
- Create or expand Eco Pass programs for affordable housing and BVSD student populations.

COMMUNITY climateaction SUMMIT

April 2010

Organization **City of Boulder**

Program Name **Two Techs and a Truck**

Description: The "Two Techs and a Truck" program will provide audit and retrofit services to homeowners and residential rental property owners. The "techs" will be on-site to offer financing opportunities, help fill out rebate paperwork, and take the guess work out of upgrading a home. The program will rely on social mobilization strategies to:

- Build on existing social networks and community leaders;
- Offer rewards to individuals and groups that meet or exceed challenges and contests;
- Maximize the use of social media to raise awareness and provide tools to help make community initiatives fun and convenient;
- Begin to shift the social norms around energy use; and
- Get people signed up for services that result in measurable greenhouse gas reductions.

Goals:

- To reach 10,000 homes by the end of 2012; some portion of which will:
  - Commit to behavior change
  - Make basic property upgrades (insulate & air seal); and
  - Make deeper retrofits to upgrade mechanical equipment, change out windows, add solar, etc.
- To mobilize the community
- Achieve greenhouse gas reductions of 2-4 metric tons CO2 per household

Program success: Refining details of program design—will be a first in the nation!

Challenges:

- Identifying robust financing assistance programs
- Pricing the basic tier of services to balance:
  - Bulk-rate pricing agreements
  - Variation in individual home conditions
- Audit and installation contractor capacity to meet community goals
- Designing service to maximize ease of implementation while preserving choice

Needs:

- Feedback at Summit on design challenges
- Maximum collaboration between community partners and groups

Short-term goals: Start implementation in May/June

COMMUNITY climateaction SUMMIT

April 2010

Organization

City of Boulder Facilities and Asset Management Division

Program Name

Energy Strategy

Description: Operations and maintenance of city facilities, including energy management of buildings

Goals: Provide safe and efficient facilities for use by the public and city staff.

Program success:
- Retrofitting buildings with energy-efficient upgrades.
- Installing renewable energy (solar-PV and solar-thermal) at city facilities.

Challenges:
- Limited funding - plan to spend $10M on improvements to save energy and install renewable energy systems, but more savings are known to exist.
- Limited personnel resources to manage programs.

Needs:
- A common greenhouse gas tracking system for the city & commmunity emmissions with associated reduction targets.

Short-term goals:
- Conduct energy assessments at 66 city facilities and make improvements wherever possible based on resources.
- Install solar-PV systems at 4 buildings.
- Install solar-thermal systems at 2 buildings.

COMMUNITY climateaction SUMMIT

Organization **Boulder County**

Program Name **Partners for a Clean Environment (PACE)**

Description: A business technical assistance and certification program fostering high levels of environmental performance. The program is funded by the cities of Boulder, Longmont and Lafayette, Boulder County Public Health (BCPH), and the communities participating in the Keep It Clean Partnership (KICP).

Goals: Meet with between 300 and 500 businesses annually and assist at least 15% of those businesses in implementing measures aimed at reducing their environmental impacts.

Program success: Many PACE partners make ongoing improvements: Conor O'Neills has made energy, water, stormwater and materials purchasing and recycling changes that reduce costs.

Challenges:
- Small business owners have limited time and financial resources
- Split incentive of property owners not paying utility bills

Needs:
- Understanding of how best to engage and help businesses
- Coordination with other programs and business organizations
- Share successes
- Enhance staff's technical knowledge of efficient energy equipment

Short-term goals:
- Complete program redesign to align with funding partner goals
- Work closely with businesses to assist with project implementation

COMMUNITY climateaction SUMMIT

Organization **Boulder County**

Program Name **ClimateSmart Loan Program**

Description: Program provides a voluntary mechanism for commercial and residential property owners to obtain financing for renewable energy and/or energy efficiency improvements to properties in Boulder County. It is the first of its kind in the U.S.

Goals: To help residential and commercial property owners in Boulder County afford renewable energy installations and energy efficiency retrofits

Program success:
- $10 million invested in renewable energy and energy efficiency in Boulder County
- 282 local contractors funded under this program
- Significant greenhouse gas emission reductions currently being measured in each participating household.
- Has become a national model for other counties wanting to create a similar financing model.

Challenges:
- Getting the word out to all Boulder County property owners
- Banking lobby
- Some community misperception about the program

Needs:
- Greater collaboration across Boulder County municipalities
- Help with outreach/social mobilization efforts to galvanize support for program

Short-term goals:
- Make program even more affordable for every Boulder County resident

COMMUNITY climateaction SUMMIT

Organization **City of Boulder**

Program Name **Commercial Technical Team**

Description: Team assists city staff in strategy and program development to engage industry professionals in achieving our climate action goal.

Goals:
- Reduce energy use and greenhouse gas emissions from the Boulder's commercial building stock.
- Engage approximately half of Boulder's 6,000 businesses by 2012.
- Create commercial programs that reduce greenhouse gas emissions by 264,000 metric tons annually, or approximately 44 metric tons per business.
- Prioritize cost-effective measures that deliver bottom-line savings to businesses.

Challenges:
- Making energy efficiency retrofit measures cost-effective
- Complicated processes to receive federal and utility rebates
- Split incentive of property lease agreements between tenants and property owners
- Access to a complete package of information for energy efficiency measures and programs
- Streamlining access to available services to meet a businesses' schedule
- Access to financial resources
- Need for on-going technical assistance

Needs: Show the payback and ROI for energy efficiency retrofits

Short-term goals:
- Continue to build on relationships with businesses and their networks
- Leverage existing Demand Side Management (DSM) programs
- Provide case studies on investment payback
- Pilot programs that are customized to meet Boulder's market segments
- Customize incentives for businesses
- Provide information on commercial energy efficiency programs
- Provide technical assistance on the existing financial tools and incentives

COMMUNITY climateaction SUMMIT

Organization **Town of Superior**

Program Name **Greening Town Operations**

Description: Superior is coordinating a wide variety of greening activities including energy efficiency, renewable energy, green fleets, recycling and zero waste.

Goals:
- Town facilities all solar
- Easy opportunity to recycle for all households
- Town as green as possible

Program success:
- Installed 5 small PV systems (45 kW total) at 5 town facilities.
- Subscribe to Xcel's wind program for all buildings.
- Net metering at the South Pool.
- Lighting retrofits in all buildings, and all streetlights and town-owned parking lot lighting have been converted to LED.
- Retrofitted Town buildings with lighting occupancy sensors and low flow plumbing fixtures.
- One-quarter of our fleet is "green," hybrid and flex fuel.
- Adopted ordinance allowing electric vehicles on roads, and educated residents on idling recommendations.
- Passed commercial and residential green building codes.
- Established a yard waste drop-off site and compost giveaway.
- Implemented recycling in all facilities, and zero waste at Town Hall and all Town events.
- Mandated embedded recycling for all haulers providing single-family collection.

Challenges: Reduction in renewable energy credit price hurt PV project economics.

Needs:
- Other strategies.
- Other grants and funds.
- More outreach and motivation tips.
- More commercial strategies.
- More vendors with good ideas.

Short-term goals:
- Install 2 large PV systems (200kW) on the water and wastewater treatment plants with a power purchase/lease agreement.
- Install solar electric vehicle charging station.
- Upgrade water treatment plant motors to variable speed drive in 2012.

COMMUNITY climateaction SUMMIT

Organization

University of Colorado Denver, Transportation Group

Program Name

Sustainable Urban Infrastructure, Integrative Graduate Education and Research Traineeship (IGERT) Program

Description: Unique, inter-disciplinary integrated research and teaching program on Sustainable Urban Infrastructure across four graduate programs -- the College of Engineering, the School of Public Affairs, the College of Architecture and Planning, and the Health and Behavioral Sciences Program in the College of Liberal Arts and Sciences. Research areas include: city-wide climate action plans; city-wide vulnerability and resilience; urban food systems; integrated water, energy and waste; and integrated land use and transportation.

Goals: Design, analysis and diffusion of sustainable urban infrastructures of the future through integration across the disciplines of engineering, architecture and planning, public affairs and health and behavioral sciences.

Program success:

- Worked on greenhouse gas (GHG) footprints for Greenprint Denver and many other cities in the Denver Metro area.
- By including emissions from concrete, food, and air travel, we have provided a mechanism for cities to target reductions in GHGs in areas that would otherwise not have been apparent, such as using higher flash content in city concrete mix specifications and reducing city air travel, as well as reductions in vehicle miles traveled and improvements in energy efficient buildings.

Challenges:

- On a national level, lack of carbon trading or carbon tax to bring economic meaning to greenhouse gas accounting.
- On a local level, land use zoning that prevents transit-oriented development and encourages low-density development.

Needs:

- Does anyone know of any good grants for some really talented graduate students in sustainable urban infrastructure?
- We provide a way for other programs to better measure their benefits. In most cases quantifying greenhouse gas emissions is not straightforward and requires research. We may be able to connect programs with interested researchers. We also offer course work for those interested in sustainability, including one class specifically designed to teach city-scale greenhouse gas accounting.

COMMUNITY climateaction SUMMIT

Organization **University Corporation for Atmospheric Research**

Program Name **Sustainability**

Description: Sustainability grows from the grassroots engagement and environmental commitments of our employees. Our program is based in efficiency, both with natural resources and financial resources. We address green building, energy and greenhouse gas emissions management, transportation, zero waste practices and more.

Goals: In development

Program success:
- UCAR celebrates our 50th Anniversary in 2010 with a sustainability theme and the goal of cutting the waste out of event planning
- 15 years of employee engagement in creating a top-notch recycling program

Challenges:
- Effective communication channels
- Collaboration across groups
- Staff time to complete projects and remain educated on best practices

Needs:
- Network
- Sharing ideas and cost-effective best practices, especially for nonprofits /government agencies on an annual budget cycle

Short-term goals: In development

COMMUNITY climateaction SUMMIT

Organization **University of Colorado**

Program Name **Campus Sustainability and Conservation**

Description: Reduce campus energy consumption in short term and achieve CO2 neutrality in long term.

Goals:
- Reduce campus energy consumption by 20%, water by 10%, paper by 20% and campus fleet fuel by 25% by year 2012.
- Long term goal of CO2 neutrality.

Program success:
- Significant reduction in energy and water consumption for past few years.
- Building only LEED Gold Certified buildings and going beyond LEED Gold.
- Five large/medium scale solar PV installation on campus roofs.

Challenges:
- Very large campus to impact (small city, 200+ buildings, over 10 million square feet of buildings)
- Retrofit of existing/old buildings and associated cost

Needs:
- Find and focus on significant common interests and opportunities between our sustainability goals and the city.
- As a big part of the Boulder community, our actions impact the city's sustainability success. We have much to learn from others in the community.

Short-term goals:
- Main focus is on data centers, dining centers and research labs, to achieve our 20% energy conservation goal
- Additional renewable energy on campus.

COMMUNITY climateaction SUMMIT

April 2010

Organization **Boulder Valley School District (BVSD)**

Program Name **Green BVSD**

Description: Building on 20+ years of environmental stewardship, BVSD is committed to becoming an environmental sustainability leader by creating healthy learning environments, while providing students with the skills to address systemic challenges. The Sustainability Coordinator is implementing a Sustainability Management System to identify and coordinate existing efforts, define sustainability for BVSD through short and long term goals, and create plans and strategies to integrate sustainability into our operations and curriculum.

Goals: Five-year goals include:

- 5% improvement in building energy operating efficiency (per square foot)
- New spaces 30% more energy efficient than IECC 2006, and remodeled spaces, 15% more efficient
- Greenhouse gas emissions (GHGs) 10% below baseline levels (FY 07/08)
- At least 100 kW increase in renewables

Long-term goals include:

- Net zero energy use in all new construction
- 80% reduction in GHGs or climate neutral by 2050.

Program success:

- Purchased computer management software to power down computers and monitors when not in use district-wide. Estimated to reduce energy use by 3.9 million kWH/year.
- Increased renewable energy almost 500% in the last two years.

Challenges:

- Lack of resources (both funds and staffing)

Needs:

- Looking for partnership opportunities and new ideas to help educate our students and staff about sustainability.
- Information and advice about how to leverage grant and rebate opportunities

Short-term goals:

- Creation of a Green Curriculum Guide
- Pilot sustainability campaign (New Vista High School)
- Inclusion of sustainability criteria for procurement
- Surplus and furniture re-use
- Increase regionally purchased and organic food
- Recommissioning buildings
- Increase renewable energy systems (4 more PV systems this summer)
- Use utility tracking software and obtain energy star ratings for select schools

COMMUNITY climateaction SUMMIT

Organization

PLAN-Boulder County (PBC)

Description: Citizens' organization that works to ensure that governmental policies in the City of Boulder and in Boulder County are sensitive to all environmental issues. PBC seeks to promote, through education, political action, and encouragement of public involvement, a far-sighted and imaginative pattern of land use so that the area may retain its individual character and remain an attractive and sustainable place to live.

Goals:
- PBC has made climate action - specifically efforts that bring Boulder County residents together to reduce our contributions to climate change - its leading agenda issue.
- Provide more opportunities to inform, educate, and advocate, as local communities take stock of our collective impacts on global climate change.

Program success: PBC's most successful effort has likely been our long-running advocacy for a compact Boulder, with urban growth boundaries surrounded by Open Space. This advocacy has addressed climate change and is linked to greenhouse gas emissions: development and density, green building, Smartgrowth planning, transportation and transit, open space, and many other key issues.

Challenges:
- Lack of public engagement is probably most significant barrier to achieving PBC's climate action goals.
- Secondarily, confusion on the part of the public about what measures are truly effective in reducing greenhouse gas emissions.

Needs:
- Hope to work with the city in educating residents on the facts, goals, and approaches to climate action.
- Especially interested in social mobilization aspect of climate action
- Working with other environmental groups, neighborhood groups, business groups, schools and CU is the only way this effort can be effective.
- Would like advice on where our efforts can be most effectively used.

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