

MAYOR'S CLIMATE ACTION REPORT



Berkeley Mayor Tom Bates
Feb. 12, 2015

Introduction

Among the threats facing humankind, global warming may pose the greatest danger of long-term catastrophe. Science has long recognized the looming crises linked to increased emissions of greenhouse gases caused chiefly by burning of fossil fuels. In November the United Nations Intergovernmental Panel on Climate Change issued what a New York Times headline called the panel's "**Starkest Warning Yet on Global Warming.**"

[The NY Times reported](#): "Failure to reduce emissions, the group of scientists and other experts found, could threaten society with food shortages, refugee crises, the flooding of major cities and entire island nations, mass extinction of plants and animals, and a climate so drastically altered it might become dangerous for people to work or play outside during the hottest times of the year."

Addressing climate change has long been a top priority for Mayor Bates, and he is pleased at the progress that Berkeley has achieved and the leadership it has shown. He plans to continue to push for local strategies that the City can pursue in the battle against global warming. Despite an increase in population, Berkeley has been successful in reducing its greenhouse gas emissions during Mayor Bates' administration, but much more needs to be done.

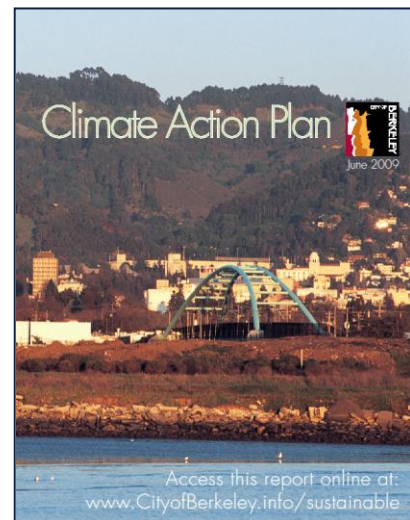
This report identifies the City of Berkeley's significant Climate Action programs, past achievements and some of our future plans. It is intended not only to provide information but also to invite public feedback on what Berkeley can do to create a more sustainable community and planet. It may be viewed online with active hyperlinks at <http://bit.ly/berkclimate2015>.

Bay Area Leader – Berkeley leads the Bay Area in the percent of employed residents who commute to work without an automobile (57%), according to the new "[Vital Signs](#)" website launched last month by the Metropolitan Transportation Commission.

Achievements

- ❖ **Measure G: Greenhouse Gas Emissions** – Spearheaded by Mayor Bates and approved by 82.3% of Berkeley voters in Nov. 2006, Measure G advised the Mayor to work with the community to adopt an action plan aimed at reducing greenhouse gas (GHG) emissions by 80% by 2050. The vote made Berkeley the only city in the U.S. with a voter-approved greenhouse gas emissions target, according to a [2011 report by UC Davis transportation researchers](#).

- ❖ **Climate Action Plan** – Embracing the community's call to action expressed by Measure G, the Mayor played a leadership role in [launching a major planning effort](#) to create the City's Climate Action Plan, adopted by the City Council in 2009. The City's Office of Energy and Sustainable Development worked with other City departments and community organizations over a three-year period that involved many public meetings and input from City commissions to develop the plan, which now stands as a blueprint for a wide range of City programs and activities aimed at reducing greenhouse gases. In addition to Measure G's goal of reducing GHG by 80% by 2050, the Climate Action Plan set an intermediate goal of a 33% reduction by 2020.



The Climate Action Plan builds upon a number of existing City programs and seeks to incorporate new initiatives in several policy areas:

- 1. Transportation**
- 2. Land Use**
- 3. Building Energy Use**
- 4. Waste Reduction and Recycling**
- 5. Community Outreach**
- 6. Resilience and Adaptation**

1. TRANSPORTATION – Berkeley works in several ways to increase bicycling and walking, reduce use of fossil-fueled vehicles and increase use of mass transportation.

- **Bicycles** -- The City received good news last year when the Metropolitan Transportation Commission, of which the Mayor is a member, approved funding to expand **Bay Area Bike Share** to Berkeley and Oakland. Planning is still underway. We continue to add bike parking, and are pulling together a major update of our **Bicycle Master Plan** with enhanced bikeways.



Bicycle City – Berkeley is third among U.S. cities of more than 100,000 population in the percent of workers who commute by bike (8.1%), according to [U.S. Census data](#) from the American Community Survey for 2008-12.

- **Pedestrians** – In a [survey published in December of 2013](#), Berkeley ranked third in the nation among cities of 100,000-plus population in the percent of residents who walk to work (18.1%). The City adopted a **Pedestrian Master Plan** in 2010.
- **Vehicles** – The City promotes **car sharing**, public **charging stations for electric vehicles** and **green taxis** among other measures.

✧ **Car Sharing** -- The number of car share vehicles offered by **City CarShare** and **ZipCar** increased to 123 as of Jan. 2013, a 35% increase since 2010. The City also included car sharing in its “[goBerkeley](#)” pilot program that began in July 2013, adding five car share vehicles, including two electric vehicles with charging stations, in the



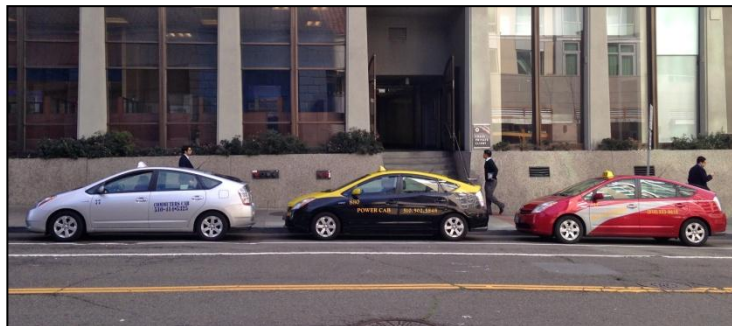
Telegraph and Elmwood commercial districts. The added vehicles and goBerkeley outreach was followed by 200 more Berkeley residents becoming CarShare members, plus 10 Berkeley businesses joining.

- ✧ Electric Vehicle Charging Stations -- Last May, the California Energy Commission approved funding for six additional electric vehicle charging stations in two City garages and the Berkeley Marina, quadrupling the two stations that exist in the Center Street Garage. The City also has launched an expedited permitting process for private businesses to install public charging stations in their parking



lots, with the first two stations coming online at Whole Foods on Telegraph Avenue last year. The City is also working on a pioneering pilot project to permit curbside charging in residential areas.

- ✧ Green Taxis – A Berkeley ordinance initiated by Mayor Bates and adopted by the City Council in December 2011¹ requires that an increasing percentage of Berkeley's taxi fleet be low-emission



vehicles. For this calendar year (2015), taxi business owners who apply for a transfer of the owner permit must show proof that 50% of the business' fleet is low emission, which is defined as a hybrid or natural gas vehicle or one certified to have a minimum 32-mpg rating for city driving. The required percent of low emission vehicles goes up to 75% in 2016 and 100% beginning in 2017.

Berkeley First – Berkeley was the first U.S. city to incorporate car sharing in its municipal fleet, according to a [report by UC Davis transportation researchers](#). Beginning in August 2004, the City has been substantially reducing its fleet vehicle cost and energy use by contracting with City CarShare to provide fuel-saving hybrid vehicles to be used for City employees during work hours and by the public during the evenings and weekends.

¹ Berkeley Municipal Code Section 9.52.030

- Parking – A chief feature of the City’s “[goBerkeley](#)” pilot program was adoption of differing parking rates and time limits that varied by zone. It was intended to shift some of the parking from heavily congested parking areas to less used blocks nearby. This “on demand” parking experiment began in July 2013 in three commercial districts -- Downtown, Telegraph/Southside and Elmwood. Data collected 14 months later showed that parking increased in the under-utilized areas and that space availability increased in the most congested zones. A survey of drivers found 78% reported finding parking in the pilot areas to be “Very Easy”, “Somewhat Easy” or “Neutral,” a 41% increase from the pre-pilot period. The City also has been improving its garage parking, with its underground Oxford Garage added in 2009, and plans are underway to rebuild and expand the seismically unsafe Center Street Garage.



- Mass transit – Another feature of the City’s “[goBerkeley](#)” pilot program consisted of AC Transit passes distributed in three commercial areas (Downtown, Telegraph/Southside and Elmwood), with 651 6-month “TravelChoice Berkeley” passes distributed to residents and 1,000 “EasyPass” passes to employees of businesses. Surveys showed that about half of the pass recipients used them on a regular basis with reported increases in regular transit use as well as increases in bicycling, walking and carpooling. In addition, under the [Downtown Area Plan](#), adopted in 2012, owners of new buildings with more than 20,000 square feet in the Downtown area must provide each residential unit and employee with a free, unlimited bus pass.



2. LAND USE – Berkeley’s Climate Action Plan seeks to increase use of mass transit (and decrease use of the personal automobile) by aligning with the **Smart Growth** and **Transit-Oriented Development** policies of concentrating housing, jobs and commercial activity along transit corridors and near public transportation hubs.

- [Measure R of 2010](#) -- To promote Smart Growth, Berkeley voters in 2010 passed Measure R to increase development density in Berkeley’s Downtown. Measure R called for “allowing for 2 residential buildings and 1 hotel no higher than our existing 180 foot buildings and 2 smaller office buildings up to 120 feet, concentrating

housing and jobs, thus helping to make Berkeley one of the greenest cities in the United States.”

- [2012 Downtown Area Plan](#) -- The goals of Measure R were implemented into City zoning codes in the City's 2012 Downtown Area Plan, a product of extensive community input involving more than 200 public meetings. The plan not only provides for the addition of greater Downtown housing density but also includes green requirements in new developments such as meeting LEED Gold building standards for projects over 20,000 square feet, fees to fund open space, car sharing spaces and wiring for electric vehicle charging stations in parking areas.



- [New Housing](#) – More than 3,000 housing units have been added to Berkeley's housing stock during Mayor Bates' administration, and several proposed development projects are at various stages in the pipeline that, if built, would add about 1,500 new residential units to the Downtown transit hub, including rooms in two new hotels.



3. BUILDING ENERGY USE – Buildings are responsible for about 45% of our community's greenhouse gas emissions. Berkeley's residential energy consumption (electricity and natural gas) fell about 13% between 2000 and 2013, while the city's population grew about 10% in the same period. Sections below describe some of the areas of Berkeley's progress in reducing energy used by buildings:

Berkeley First – Did you know that Berkeley in 2008 was the first city to implement a pioneering method of financing for solar installations called **PACE** (Property Assessed Clean Energy)? PACE allows owners to pay for solar panels or other energy efficiency improvements through installments on property tax bills. Berkeley's program became a model for other PACE programs across the country.

- Solar leader – Berkeley is a solar pioneer. Its “[Berkeley FIRST](#)” program, launched in 2008, made Berkeley the first city in the nation to implement an innovative type of



financing for solar and other energy efficiency measures called “[PACE](#),” or Property Assessed Clean Energy.² This approach -- by which the property owner pays for solar systems and other energy-saving measures in annual installments on property tax bills – has become a national model. The PACE program reflects the community’s broad-based commitment to clean energy that has made Berkeley a Bay Area leader

in solar installations per capita (see box below). According to the [City’s most recently posted data](#), 1,253 solar systems were installed in Berkeley between 2000 and 2013, putting the city at 39% of its 2020 target of 3,200 systems. Berkeley’s solar panels annually reduce utility bills by \$1,142,000, produce 8.8 million KWh of electricity and offset more than 4,300 metric tons of greenhouse gases.

City of Solar Rooftops – During the three years that the Northern California Solar Energy Association (NorCal Solar) conducted surveys of solar installations, 2007-2009, Berkeley ranked first each year in installations per capita for Bay Area cities of more than 100,000 people.

- Berkeley Energy Saving Ordinance (BESO) -- Two Berkeley laws, the 1987 Residential Energy Conservation Ordinance (RECO) and the 1994 Commercial Energy Conservation Ordinance (CECO), require that all buildings that are sold or remodeled to install measures to save energy and water. The City has been working on a new law, the Berkeley Energy Saving Ordinance (BESO), to replace RECO and CECO. BESO would require owners of all commercial buildings and all multi-unit residential buildings of more than 4 units to have periodic energy and water-use audits by an approved contractor, in the expectation that the cost of the audit could identify upgrades that would reduce energy and water use and result in cost savings that would offset the cost of the audits and upgrades. Single-family homes and multi-unit buildings of up to 4 units would be required to have audits within 12 months of a sale of the building. City staff is now preparing the language of an implementing ordinance to present to the City Council in the near future.

² Berkeley’s PACE development and implementation was led by Cisco DeVries, who was then Mayor Bates’ Chief of Staff.

- City Government Buildings – Ongoing energy upgrades have increased the energy efficiency of City buildings. Energy and natural gas usage per square foot fell to 20 KWh in 2013 from 22 KWh in 2000 (a 9% drop), though total City energy use increased, mainly because of an increase in total building square footage. The City last year also replaced its more than 8,000 streetlights and park lights with energy-efficient LED bulbs, which is expected to cut streetlight energy use by more than 50% and save more than 2.37 million KWh and \$380,000 in energy costs per year.



4. WASTE REDUCTION AND RECYCLING – The City’s goal is Zero Solid Waste by 2050. Berkeley’s emphasis on recycling efforts was accompanied by a 50% decrease in solid waste disposal between 2000 to 2013, and commercial solid waste is on track to meet the Zero Waste goal, falling 36% between 2007 and 2010, according to the latest data available. The City works with the Ecology Center to provide residential curbside recycling of plastics, bottles, cans, paper, green waste and food waste, and is continually seeking new ways to reduce materials sent to landfills.



Beginning last July, all businesses in the City are required to have recycling collection for basic recyclables, and also beginning in July, restaurants and markets are required to have recycling for food waste and food-soiled paper. In July of 2013, the City began accepting all types of plastic containers in the recycling stream.

5. COMMUNITY OUTREACH – A critical element of our Climate Action Plan is community buy-in by residents and local institutions, organizations and businesses. The number of Berkeley businesses certified as green by the [Bay Area Green Business](#)



[Program](#) has grown each year, reaching 189 (about 5% of total Berkeley businesses) in Feb. 2014. In addition, the City works closely with the Ecology Center on implementing its Climate Action Plan goals. In 2012, the Ecology Center convened the [Berkeley Climate Action Coalition](#) (BACC), which brings together a broad range of stakeholders to further the City's efforts to reduce greenhouse gases. About 800 people participated in BACC and other Ecology Center Climate Action programs in 2013.

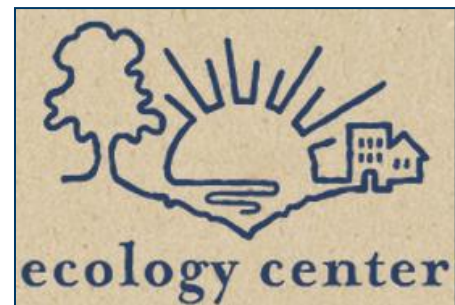
City Partnerships

In addition to efforts organized under the Climate Action Plan umbrella, the City also works in partnership with other local governments and community organizations to further our environmental goals. Below are some examples:

- ❖ **East Bay Green Corridor** – The East Bay Green Corridor is a partnership of Berkeley and eight other cities along with UC Berkeley, the Lawrence Berkeley Lab, Cal State East Bay and the Peralta Community College District dedicated to fostering the growth of green industries and safeguarding the environment. Mayor Bates was a leading co-founder when the Corridor was established in 2007. Its initiatives have included a regional standardized permit process for solar installations.

- ❖ **Partnerships with Community Organizations** –

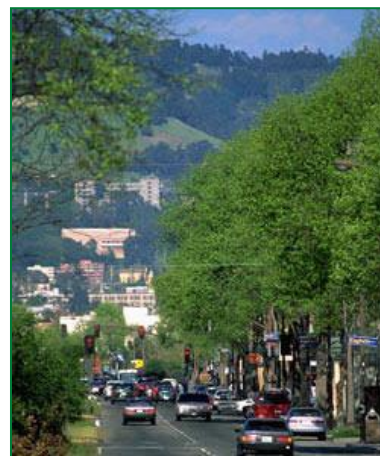
The City has forged successful alliances with environmental organizations such as the [Ecology Center](#) and [Rising Sun Energy](#) to foster a number of efforts that further our Climate Action goals, including recycling, public education, youth workforce training and assistance to residents and businesses on various strategies for reducing their carbon footprint.



- ❖ **Community Energy Services Corporation (CESC)** – The [Community Energy Services Corporation](#) is a non-profit organization created by the City in 1985 to assist the City and residents with energy efficiency. It offers a range of services, such as free solar energy assessments. Initially, the City's Energy Commission served as the CESC board, but because of CESC's success, the City Council in 2008 voted to strengthen CESC's autonomy by authorizing it to appoint its own board of directors.

6. RESILIENCE AND ADAPTATION – The City also pursues strategies to improve our ability to withstand and adapt to the impacts of climate change.

- Rockefeller Resilient City -- In Dec. of 2013, Berkeley was selected as one of the 33 inaugural members worldwide for the Rockefeller Foundation's new Resilient Cities Centennial Challenge. San Francisco and Oakland also were chosen for the program, which recognizes these cities' potential for effective resilience progress and provides two years of funding for a Chief Resilience Officer.
- Trees, Water – Between 2000 and 2013, Berkeley added more than 4,360 street and park trees, representing significant environmental and quality-of-life benefits. Community-wide water consumption decreased 17% between 2000 and 2013, though it increased for the three years after 2010, likely because the three years of drought caused an upsurge in watering for landscaping. Local anti-drought measures have included reduced City usage in several areas and suspension of sidewalk power-washing by the Downtown Berkeley Association.



Details about the City's Climate Action efforts and data on its progress can be found on the [Climate Action Plan website](#) and in a [June 3, 2014, City staff report to the City Council](#).

Awards and Honors

- ★ **2014 Solar Champion Award** – Presented to Berkeley by the Environment California Research & Policy Center for ground-breaking efforts to promote local solar energy. Berkeley received the same award in 2009
- ★ **Climate Action Plan Milestone Achievement Award** – The International Council for Local

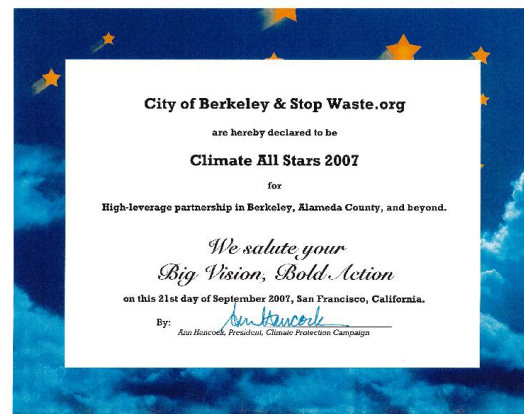


Environmental Initiative's Climate Protection Campaign's "[Milestone 5 Award](#)" presented to Berkeley in 2011 for achieving all 5 of the milestones identified as necessary for plans to reduce greenhouse gas emissions

- ★ **Environmental and Transportation Stewardship Award** – Presented to Berkeley for its "Visionary Leadership" by City CarShare in 2011
- ★ **2010 Innovation in Green Community Planning Award** – Presented to the City by the California chapter of the American Planning Association in recognition of the Climate Action Plan
- ★ **2009 Climate Protection Award** – Presented to Berkeley by the [U.S. Environmental Protection Agency](#) (EPA) in "recognition of exceptional contributions to global environmental protection." Special note was made of the City's PACE (Property Assessed Clean Energy) financing for solar power and its Climate Action Plan.
- ★ **City Solar Award** – Presented to Berkeley by the Northern California Solar Energy Association (NorCal Solar) for each of the three years that NorCal Solar conducted surveys of solar installations, 2007-2009. Berkeley ranked first each year in installations per capita for Bay Area cities of more than 100,000 people.
- ★ **2009 Clean Air Award** – Presented to Berkeley and Mayor Bates by Breathe California for "Technology Research" with special recognition of the [Berkeley FIRST](#) program, in which Berkeley pioneered a solar-financing mechanism called PACE (Property Assessed Clean Energy)
- ★ **7th Greenest City** – Berkeley ranked 7th among the "[Top 10 Green U.S. Cities](#)" selected by Mother Nature Network in 2009
- ★ **Top Green City** – Berkeley named in 2009 as one of the "Top 12 Greenest Cities in the U.S." by [Greentech Media](#)
- ★ **2009 Green Business Award** – Presented to Berkeley in the Community category from the Francisco Business Times



- ★ **United Nations Institute for Training and Research (UNITAR) 2008 Americas Award for Excellence in Environmental Sustainability** – Presented to Mayor Bates in recognition of his work on Berkeley's Climate Action Plan as “a best practice on how a community-based effort has served to identify and implement strategies that achieve Berkeley's greenhouse gas emission reduction target”
- ★ **Model City for Solar Award** – Presented to Berkeley by the Silicon Valley Leadership Group presented at the Solar Summit 1.0 in 2008 for Berkeley's innovative programs to encourage solar energy
- ★ **Solar America City** – Berkeley named [one of 13 Solar America Cities](#) in 2007 by the U.S. Department of Energy for “comprehensive approaches to urban solar energy use that can serve as a model for cities around the nation”
- ★ **Number 3 Cleantech City in the U.S.** – Berkeley ranked third among the top five clean tech-friendly U.S. cities in 2007 [by Sustainlane Government](#)
- ★ **Climate All Star** – Berkeley and StopWaste.org jointly named “Climate All Stars 2007” by the Climate Protection Campaign in 2007
- ★ **Harvard honor** – Berkeley's Fleet Car Sharing named among the “Top 50 Innovations in American Government” by the Ash Institute of the Kennedy School of Government at Harvard University in 2005
- ★ **PG&E honor** – Mayor Bates saluted in 2005 by the PG&E Advisory Board with a plaque “For his Tireless work & Vision On Behalf of our Community; His Advocacy for Alternative Fuels, Energy Conservation, Economic Development and Environmental Quality.”
- ★ **Flex Your Power Award** – State of California “Flex Your Power Energy Efficiency Award” presented to Berkeley in 2004



2015 Plans

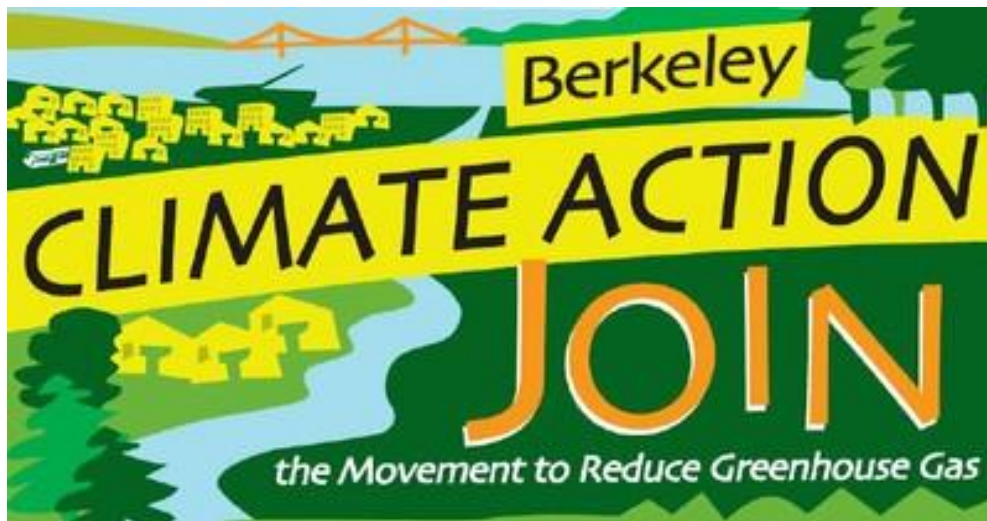
Despite Berkeley's accomplishments, City staff has concluded that Berkeley cannot meet its Climate Action goals without deeper energy savings, especially in buildings, which are estimated to be responsible for about 45% of the community's greenhouse gas emissions. The Mayor will continue working on our broad range of initiatives aimed at meeting our Climate Action Plan goals. In addition, he will seek to expand the City's efforts on several fronts.

- ❖ **Georgetown University Energy Prize** – The [City has been selected](#) as one of 50 cities nationwide to compete as semi-finalists for a \$5-million prize for the city that most successfully reduces municipal and residential energy consumption during a two-year period, 2015-2016, and demonstrates potential for continued energy-efficiency improvements. The City is implementing a new Energy Plan to achieve significant reductions in energy that will incorporate continued implementation of existing Climate Action programs and new initiatives. As a result of Berkeley being chosen as a semi-finalist, PG&E has pledged \$20,000 to be used for the Energy Plan and Climate Action Plan.
- ❖ **Berkeley Energy Saving Ordinance (BESO)** – As described earlier in this report, the BESO is still being worked on. The Mayor hopes to use it as an effective vehicle to accomplish significant reductions in energy use by buildings.
- ❖ **Commercial Solid Waste Reduction** – The current method of collecting commercial rubbish in Berkeley – including construction debris, as well as trash from businesses -- does not support the City's Zero Solid Waste goal. Several private waste-haulers have independent, unmonitored contracts to take away commercial trash. The present system prevents the City from measuring how much waste is going to landfills and from offering an effective incentive program for diverting more material from the waste stream. The City Council, which received a [staff report](#) on the issue on Feb. 10, is considering a new system that could include City operation of some or all commercial solid waste collection.



- ❖ **Self-financing Energy and Water Savings Improvement** – The City plans to partner with outside expertise in developing further plans to design, finance and implement a range of measures to increase energy and water efficiency, targeting strategies whose cost savings will pay for implementation.
- ❖ **Partnership with School District on School Energy Upgrades** – The City will continue to work with the Berkeley Unified School District to improve energy efficiency in school buildings.

*You can view this report online
with active hyperlinks at
<http://bit.ly/berkclimate2015>.*



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