

Celebrating Local Leadership in Sustainability

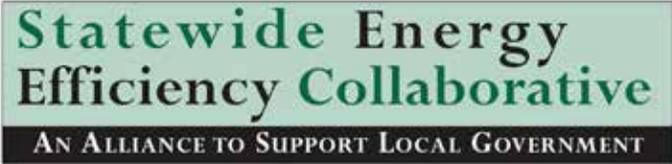


INSTITUTE FOR
LOCAL GOVERNMENTSM

Promoting Good Government at the Local Level

Statewide Energy Efficiency Collaborative

This document was prepared by the Institute for Local Government as part of its work with the Statewide Energy Efficiency Collaborative (SEEC). SEEC provides support to cities and counties to help them reduce greenhouse gas emissions and save energy. SEEC is an alliance between three statewide non-profit organizations and California's four Investor-Owned Utilities. It builds upon the unique resources, expertise and local agency relationships of each partner.



This program is funded by California utility customers and administered by Southern California Gas Company, San Diego Gas & Electric Company, Pacific Gas and Electric Company and Southern California Edison, under the auspices of the California Public Utilities Commission.

Celebrating Local Leadership in Sustainability

This is a challenging time for local agencies in California. Continued population growth coupled with a weak economy has stretched fiscal and natural resources to the limit. Because of this, city and county officials are taking new and creative approaches to provide services, manage budgets and plan for the future in a way that, over time, will improve the quality of life of their communities.

This report highlights some of the innovative ideas and projects implemented by a diverse group of local agencies that are realizing multiple benefits from their efforts. These projects not only save energy and reduce greenhouse gas emissions, they are helping to enhance environmental quality, conserve scarce resources, improve public health and safety, and create more resilient local economies throughout the state.

By voluntarily implementing these sustainable activities at the local level, cities and counties in California are helping meet ambitious state goals to reduce greenhouse gas emissions while improving the quality of life for their residents and setting a stable foundation for the future.

The Institute for Local Government thanks the communities that have shared their stories. Small and large, rural, urban and suburban, these agencies are truly models of leadership at the local level.

About The Beacon Program

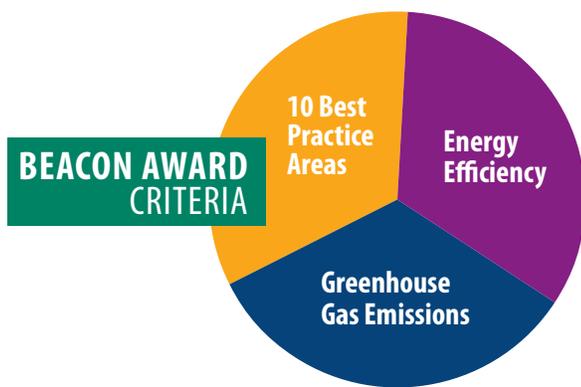
The Beacon Program is a statewide program that recognizes California cities and counties that are working to reduce greenhouse gas emissions, save energy and adopt policies and programs that promote sustainability. The Beacon Program is sponsored by the Institute for Local Government and the Statewide Energy Efficiency Collaborative. It is funded by California utility customers and administered by Southern California Gas Company, San Diego Gas & Electric Company, Pacific Gas and Electric Company and Southern California Edison, under the auspices of the California Public Utilities Commission.

Information about the Beacon Program is available at www.ca-ilg.org/BeaconAward.

Information about the SEEC partnership is available at www.ca-ilg.org/SEEC.

Demonstrating Local Sustainability

The Institute for Local Government applauds Beacon Program participants for their continued efforts towards sustainability and for their contributions to this report.



Details about Beacon participant accomplishments are available at www.ca-ilg.org/participant-accomplishments.

Beacon Program Participants as of June 2013

By participating in the Beacon Program, the following communities have demonstrated their commitment to sustainability. By tracking results, these communities are able to show quantifiable energy savings and greenhouse gas reductions.

- | | |
|-----------------------|------------------------|
| Apple Valley | San Diego County |
| Arcata | San Luis Obispo County |
| Beaumont | San Pablo |
| Benicia | San Rafael |
| Brea | San Ramon |
| Carson | Santa Barbara |
| Chula Vista | Santa Clarita |
| Citrus Heights | Santa Cruz |
| Davis | Santa Monica |
| Delano | Santa Rosa |
| El Cerrito | Simi Valley |
| Glendale | Sonoma County |
| Hayward | South Gate |
| Hermosa Beach | Taft |
| La Mesa | Tulare |
| Livermore | Union City |
| Manhattan Beach | Ventura |
| Palm Springs | West Covina |
| Palo Alto | West Sacramento |
| Pittsburg | Woodland |
| Pleasanton | Yolo County |
| Rancho Cucamonga | |
| Rancho Palos Verdes | |
| Redlands | |
| Riverside | |
| Rolling Hills Estates | |
| Sacramento | |
| San Carlos | |

Since 2004, 21 of the 49 cities and counties participating in the Beacon Program have reported saving approximately 30.2 million kilowatt hours of electricity as of June 2013 in agency buildings and facilities, enough to power 5,250 average California homes annually.¹

Beacon Participant Energy Savings in Agency Facilities as of June 2013

Brea	30% electricity savings	2004 - 2011
Manhattan Beach	26% electricity savings	2004 - 2011
Santa Clarita	26% electricity savings	2004 - 2011
West Covina	22% electricity savings	2004 - 2011
Beaumont	17% electricity savings	2004 - 2011
Tulare	16% electricity savings	2004 - 2011
Chula Vista	15% electricity savings 30% natural gas savings	2005 - 2011 2005 - 2011
El Cerrito	14% electricity savings	2005 - 2011
South Gate	12% electricity savings	2004 - 2011
Arcata	12% electricity savings	2005 - 2011
Union City	11% electricity savings	2005 - 2011
Ventura	11% electricity savings	2004 - 2011
Sonoma County	10% electricity savings	2005 - 2011
Hayward	10% electricity savings	2005 - 2011
Palm Springs	9% electricity savings	2004 - 2011
Benicia	8% electricity savings 8% natural gas savings	2005 - 2011 2005 - 2011
Livermore	8% electricity savings	2005 - 2011
Santa Monica	6% electricity savings	2004 - 2011
Redlands	5% electricity savings	2004 - 2011
San Rafael	5% electricity savings	2005 - 2011
Simi Valley	5% electricity savings	2004 - 2011

Beacon Participant Greenhouse Gas Reductions

as of June 2013

Sonoma County	29% agency reduction	2000 baseline, transportation & energy only
Santa Monica	14% agency reduction	1990 baseline
Chula Vista	13% agency reduction	2005 baseline
San Carlos	12% agency reduction	2005 baseline
South Gate	10% agency reduction 5% community reduction	2005 baseline 2005 baseline
Palo Alto	10% agency reduction	2005 baseline
Glendale	5% community reduction	2004 baseline

Demonstrating Local Sustainability



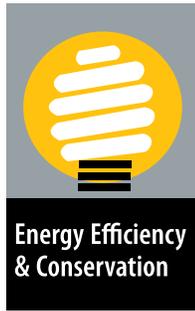
More ideas about best practice options to consider are available at www.ca-ilg.org/SustainabilityBestPractices.

Sustainability Best Practice Activities

Local agencies throughout California continue to pursue sustainability activities that best fit the community's unique circumstances. The activities summarized in this publication reflect a sampling of activities accomplished by cities and counties participating in ILG's Beacon Program. The stories selected represent a range of activities in the ten sustainability best practice areas. The best practice areas represent broad categories in which local agencies can control or influence efforts to save energy and reduce greenhouse gas emissions.

About the Numbers

- The numbers reported in this report were provided by the individual cities and counties unless otherwise indicated.
- The greenhouse gas reductions were calculated using the Climate and Energy Management Suite developed by ICLEI—Local Governments for Sustainability as part of the Statewide Energy Efficiency Collaborative, www.californiaseec.org.
- Greenhouse gas reductions were converted into commonplace equivalents using the federal Environmental Protection Agency's Greenhouse Gas Equivalencies Calculator at www.epa.gov/cleanenergy/energy-resources/calculator.html#results.
- Greenhouse gas numbers reflect carbon dioxide equivalents, a term that translates different types of greenhouse gases into carbon dioxide, based upon their climate warming potential.
- The "What if" scenarios reflect estimated projections of energy, monetary and greenhouse gas savings based on a uniform calculation. The scenarios reflect the possible outcome of cumulative action.



Energy Efficiency

Sacramento

Beginning in 2011, the City of Sacramento began replacing more than 4,000 existing lights, known as high intensity discharge lights, throughout eight city-owned public parking garages with new light-emitting diodes, known as LEDs.

LEDs use two-thirds less energy (70 watts compared to 210 watts) than the existing lights. In addition, most LED fixtures installed use motion sensors that switch to a lower light level when no motion is detected, such as on weekends or late at night, thus reducing consumption further by 40 percent, for even greater energy savings.

Over the 11-year life of the LEDs, the lighting retrofit is expected to save the city \$3.3 million. To pay for the project, Sacramento used city funds and a federal Energy Efficiency and Conservation Block Grant from the U.S. Department of Energy. It also took advantage of financial incentives from the Sacramento Municipal Utility District.

For more information about Sacramento's accomplishments, visit www.ca-ilg.org/BeaconAward/Sacramento.

What is a Metric Ton of Greenhouse Gas?

A metric ton is a common, international measurement for the quantity of greenhouse gas emissions. A metric ton is equal to 2,205 pounds.²

What If?

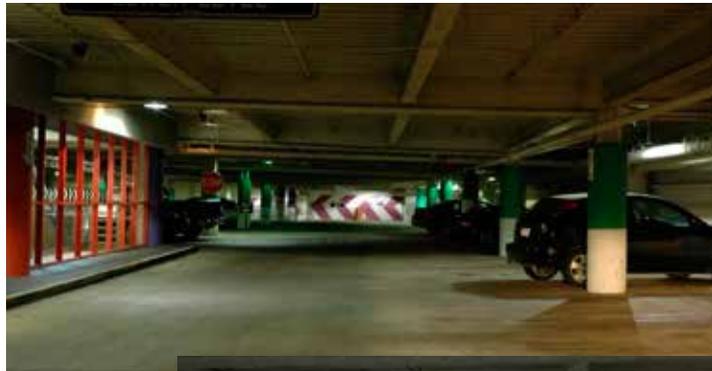
Similar activities by 25 other cities or counties could result in an annual savings of:

72,198,075 kilowatt hours of electricity

50,950 metric tons of greenhouse gas

The amount of electricity used by **7,625 homes**

Estimated Annual Results	
Energy Savings	2,887,923 kilowatt hours
Cost Savings	\$302,800
Greenhouse Gas Reduction	2,038 metric tons Greenhouse gas reduction is the equivalent of the electricity used by 305 homes for one year.



Left: Downtown Sacramento Parking Garage before LED replacement.



Below: Downtown Sacramento Parking Garage after LED replacement.



Energy Efficiency

Continued

Beaumont

The City of Beaumont hit a home run in saving money and energy by reducing the number of lights at a baseball field in a city park. Working with a sports lighting designer, the city achieved a higher lighting level by actually reducing the number of lights.

The city exchanged 36 quartz lighting fixtures with 18 high intensity metal halide fixtures, reducing their lighting output by over one million lumens, a standard measure of light. Although the ball field has less light, it is more evenly and appropriately distributed to maximize efficiency, and creates a more pleasing viewing experience. The city paid for the \$8,500 project from its general fund. Besides saving energy and money, additional savings come from lower maintenance costs, since the new lights will need to be replaced less often.

For more information about Beaumont's accomplishments, visit www.ca-ilg.org/BeaconAward/Beaumont.



Valdivia Ball Field at Rangel Park, Beaumont.

Estimated Annual Results	
Energy Savings	5,100 kilowatt hours
Cost Savings	\$375
Greenhouse Gas Reduction	3.6 metric tons Greenhouse gas reduction is the equivalent of using about 400 gallons of gasoline or nearly 13 roundtrips between San Francisco and Los Angeles (assuming thirty miles per gallon fuel efficiency).



Energy Efficiency

Continued

What If?

Similar activities by 25 other cities or counties could result in an annual savings of:

- 2,675,000 kilowatt hours** of electricity
- 1,887 metric tons** of greenhouse gas
- The amount of electricity used by **97 homes**

Yolo County

To improve energy efficiency and reduce its carbon footprint, Yolo County initiated energy retrofits at two county buildings: the courthouse in Woodland and a satellite administration building in Davis.

Completed in 2012, the retrofits include the installation of energy-efficient equipment and replacement of high-pressure sodium lighting fixtures with more energy efficient lights. In addition, the existing heating, ventilation and air conditioning system at the court house was retrofitted to include a computerized control module to manage and independently provide each heating and cooling zone of the building with conditioned air.

The county facility in Davis was retrofitted with 17 new, wall-mounted light fixtures that use less energy but glow brighter. In addition, 26 high-pressure sodium vapor parking lot light fixtures were replaced with energy efficient and longer-lasting fixtures that use light emitting diodes (LED).

For more information about Yolo County's accomplishments, visit www.ca-ilg.org/BeaconAward/YoloCounty.

Estimated Annual Results	
Energy Savings	107,000 kilowatt hours
Cost Savings	\$17,900
Greenhouse Gas Reduction	75.5 metric tons Greenhouse gas reduction is the equivalent of the electricity use of approximately 4 homes each year.



Water & Wastewater Systems

Palm Springs

The hot, dry climate in Palm Springs makes having a green lawn a challenge. In response, the City of Palm Springs began offering residents a “Lawn Buy Back Program” in 2011 to encourage property owners to replace turf with desert-friendly and native landscaping.

The program’s goal is to encourage exterior landscaping improvements that contribute to overall beautification of neighborhoods by using sustainable materials and practices that use much less water. Through the program, the city offers incentives of \$1 per square foot of lawn, up to \$500 for residents, or up to \$2,500 for multi-family lots. Participants provide a 50 percent cash match for landscaping improvement projects.

During 2011-2012, the program provided \$93,010 in incentives to 30 single-family homes and the common areas of 28 homeowners associations, replacing a combined total of approximately 85,000 square feet of turf with desert-friendly and native landscaping.

For more information about Palm Spring’s accomplishments, visit www.ca-ilg.org/BeaconAward/PalmSprings.



A residence with turf and a residence landscaping after turf removal.



Estimated Annual Results

Water Reduction	435,000 to 2,700,000 gallons ³
Resulting Energy Reduction	4,833 – 29,997 ⁴ kilowatt hours of electricity
Greenhouse Gas Reduction	1.5 – 9 metric tons Greenhouse gas reduction is the equivalent of the amount of carbon dioxide absorbed by between 38.5 and 231 tree seedlings planted and grown for 10 years.



Water & Wastewater Systems

Continued

What If?

Similar activities by 25 other cities or counties could result in an annual savings of:

Between **3,750 million** and **4,500 million gallons** of water

Between **41,662,500** and **49,995,000 kilowatt hours** of electricity

Between **28,725** and **34,475 metric tons** of greenhouse gas

▶ Greenhouse gas reduction is the equivalent of taking between 5,625 and 6,750 passenger vehicles off the road each year.

Santa Clarita

In an effort to decrease water use, the City of Santa Clarita’s Landscape Maintenance District⁵ replaced its existing park watering system with 500 “smart” computerized irrigation controllers that are connected to a real-time central control irrigation system. On a daily basis, these new controllers measure solar radiation, wind, humidity and temperature, and then adjust the water emitter settings to match the amount of water used to the new data. As a result, the smart water system applies the right amount of water at the right time.

The price tag for the project was \$1.9 million. The new system reduces the city’s water consumption by about 150 to 180 million gallons annually, resulting in a savings of \$300,000 to \$400,000 each year.

For more information about Santa Clarita’s accomplishments, visit www.ca-ilg.org/BeaconAward/SantaClarita.

Estimated Annual Results	
Water Savings	150 to 180 million gallons
Resulting Energy Reduction	1,666,500 to 1,999,800 kilowatt hours of electricity
Cost Savings	\$300,000 to \$400,000
Greenhouse Gas Reduction	1,149 to 1,379 metric tons Greenhouse gas reduction is the equivalent of taking between 225 and 270 passenger vehicles off the road.



Oak Spring Canyon Park, Santa Clarita



Green Building

Simi Valley

Simi Valley's newly renovated transit maintenance facility is a model of sustainability in more ways than one. In 2012, the city dedicated the LEED-Gold⁶ building that incorporates recycled and regionally produced materials plus an energy-efficient design that has resulted in a 25 percent energy savings. The project also includes a modern bus washing system that filters and recycles wash water in a way that accelerates the washing process and reduces water use by 42 percent.

But that's not all. The renovation process allowed the city to expand and upgrade its compressed natural gas (a clean burning fuel) vehicle fueling facility at the transit maintenance facility. As a result, the city is now able to offer a neighboring agency and a private company access to less expensive, clean-burning compressed natural gas through cooperative agreements. The opportunity helped the City of Moorpark make the decision to convert its three city buses from diesel to compressed natural gas. Because of the availability of the fuel locally, a local waste management company was able to convert its fleet of diesel-powered trash trucks to a fleet of 25 new trucks powered by compressed natural gas. In total, Simi Valley sells approximately 700 therms (or 700,000 cubic feet) of compressed natural gas each month at appropriately tiered rates which results in income for the city.

The \$2.4 million Simi Valley Transit Maintenance Facility project was funded through Federal Transit Administration and American Reinvestment and Recovery Act funds.

For more information about Simi Valley's accomplishments visit www.ca-ilg.org/BeaconAward/SimiValley.



Renovated Simi Valley Transit Maintenance Facility

Estimated Annual Results	
Water Savings	42 percent
Energy Savings	25 percent





Green Building

Continued

The average construction cost per square foot for green buildings is 2 percent higher than the average construction cost of non-green buildings. However, on average, green buildings result in a 13.6 percent decrease in operating costs for new construction and an 8.5 percent decrease for remodeled building projects. In addition, green building certification contributes to a value increase of 10.9 percent for new construction and 6.8 percent for remodeling projects.⁹

Glendale

Since 2007, the City of Glendale has focused on making affordable housing in the community more sustainable. For one project built on city-owned land, Glendale required the building to be designed and built to meet the LEED-Silver⁷ standard. For another project, the city paid for the assessment and design to make four affordable housing projects meet another recognized green building standard.

In 2011, the city adopted additional green building standards that are stronger than California's Green Building Code that went into effect the same year. These standards include the installation of radiant roof barriers that reduce summer heat gain and winter heat loss and more efficient heating and air conditioning equipment. Glendale also requires new single-family dwellings with floor area greater than 5,000 square feet to meet additional California Green Building Code standards, known as "Tier 1 Standards."⁸

For more information about Glendale's accomplishments, visit www.ca-ilg.org/BeaconAward/Glendale.





Waste Reduction & Recycling

Union City

In 2005, Union City implemented a residential food scrap collection program to help reduce methane gas (a potent greenhouse gas) produced at its landfill. The city then expanded the program in 2009 to include commercial businesses and restaurants. The city is partnering with the Alameda County Solid Waste Authority (also known as Stopwaste.org) to provide supplies, training, financing and other incentives to residents and businesses. The collected food scraps are then turned into compost which is available for community members to use. Using compost in landscaping improves the health of the soil and reduces the need for pesticides, water and fertilizer.

In one year, the city diverted nearly 9,000 tons of food waste from the landfill and donated more than 3,000 bags of compost to residents, thus helping demonstrate that food scraps can be a valuable resource.

For more information about Union City's accomplishments, visit www.ca-ilg.org/BeaconAward/UnionCity.

Estimated Annual Results

Waste Reduction	9,000 tons of food waste
Greenhouse Gas Reduction	8,000 metric tons (CO2 equivalent of methane) Greenhouse gas reduction is the equivalent of the electricity use of 412 homes for one year.



Waste Reduction & Recycling

Continued

What If?

Similar activities by 25 other cities or counties could result in an annual savings of:

About **77,500 reams** of paper

About **\$275,000**

About **460 metric tons** of greenhouse gas

▶ Greenhouse gas reduction is the equivalent of taking about 90 passenger vehicles off the road.

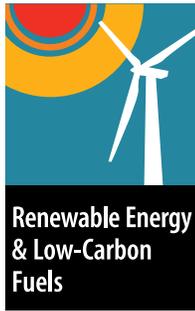
Rancho Cucamonga

The City of Rancho Cucamonga launched a paper reduction and recycling program, called the CTRL Tree program that involves almost every city department. More than 200 city employees signed a pledge to avoid printing when possible, to print double-sided and to recycle documents by turning them into notebooks or shredding them for use as cage lining at the animal shelter.

City departments replaced printed forms and newsletters with electronic versions. Many bidding projects are now available to contractors online, thus eliminating paper copies. Agency staff use tablet computers to record information in the field and many city council members download council meeting agenda packets onto their tablets. As a result, the city is also able to reduce costs for copy machine paper, toner, ink and maintenance.

For more information about Rancho Cucamonga’s accomplishments, visit www.ca-ilg.org/BeaconAward/RanchoCucamonga.

Estimated Annual Results	
Waste Reduction	3,100 reams of paper (approximately 6.9 tons)
Cost Savings	\$11,000
Greenhouse Gas Reduction	18.3 metric tons Greenhouse gas reduction is the equivalent of taking 3.6 passenger vehicles off the road.



Renewable Energy & Low Carbon Fuels

Pleasanton

Since 2009, the City of Pleasanton has installed 424 kilowatts of solar photovoltaic systems on four municipal buildings, generating 614,800 kilowatt hours of electricity each year. The largest system is on the Pleasanton Operations Service Center. The 360-kilowatt system consists of 1,568 solar panels spread across four buildings. The \$1.7 million project was financed using capital improvement funds from the city's general fund. Pleasanton also received \$637,000 in rebates from the California Solar Initiative.¹⁰

The installation on the Pleasanton Operations Service Center saves the city approximately \$144,000 each year with a payback period estimated at just over seven years. Pleasanton is currently in the process of adding more than 300 kilowatts to the site.

For more information about Pleasanton's accomplishments, visit www.ca-ilg.org/BeaconAward/Pleasanton.

To encourage its community to embrace solar energy, the City of Pleasanton offered residents and businesses who installed solar photovoltaic systems a \$1,000 rebate. As part of the program, the city worked with local solar photovoltaic providers to establish additional incentives for local participants. Nearly 200 residents have taken advantage of the program.

In the first year of the program, residents installed nearly one megawatt of solar power, bringing total community installations to 5.87 megawatts (2.7 megawatts of residential, 3.17 megawatts of commercial/industrial) over the last five years.

Estimated Annual Results	
Electricity Generated	Photovoltaic systems generate 614,800 kilowatt hours of electricity
Cost Savings	Annual savings through avoided electricity purchases: \$144,000
Greenhouse Gas Reduction	434 metric tons Greenhouse gas reduction is the equivalent of emission from electricity use for approximately 65 homes for one year.



Pleasanton Operations Service Center solar Installation



There are currently twelve waste water treatment plants in California operating almost ten megawatts of fuel cell systems.¹⁴

Tulare

The City of Tulare has been able to reduce its electricity bills by more than \$1 million a year, after installing fuel cells, at its wastewater treatment plant that help treat the water in a more cost-effective, environmentally-friendly way. The city currently has four fuel cells¹¹ that run on biogas produced at the wastewater treatment plant. The system generates 1.2 megawatts of electricity, or 45 percent of the plant’s needs.

The fuel cell project enabled the plant to use the biogas, a by-product of the wastewater treatment process, rather than flare it off as is traditionally done. Tulare now uses biogas in its fuel cells to generate heat and electricity, with natural gas available as a back-up fuel.

The project was completed in two phases. In 2007, the city installed three fuel cells. The \$7 million cost was offset by a \$4.05 million rebate from Southern California Edison as part of California’s Self-Generation Incentive Program.¹² A fourth cell was purchased in 2011, bringing the total cost to \$9.39 million, with an additional \$900,000 incentive payment.

Estimated Annual Results	
Megawatts	System generates about 1.2 megawatts
Cost Savings	About \$3,500 a day or more than \$1.2 million in avoided electricity purchases
Greenhouse Gas Reduction	6,200 tons Greenhouse gas reduction is the equivalent of taking about 1,180 passenger vehicles of the road.

Tulare estimates that the systems save the city about \$3,500 a day in avoided electricity costs.¹³ Considering operations and maintenance costs, electricity savings and other factors, Tulare estimates the project will pay for itself in about five years and then generate future savings.

For more information about Tulare’s accomplishments, visit www.ca-ilg.org/BeaconAward/Tulare.



Four fuel cells at wastewater treatment plant



Efficient Transportation

San Diego County

San Diego County is turning to fuel-efficient vehicles to help save money and reduce its greenhouse gas emissions. As a result, from 2010 to 2011, the greenhouse gas emissions from San Diego County’s fleet declined from 28,659 to 27,758 metric tons even though vehicle miles traveled actually increased as the county employees gained additional responsibilities because of health care reform and realignment.

The county is replacing six cylinder vehicles with more efficient four cylinder vehicles, while also integrating a variety of hybrid fuel model vehicles into its fleet. The county estimates that the use of these more fuel-efficient vehicles saved the county an estimated \$1 million in fuel costs in 2011 alone.

In addition to integrating fuel efficient vehicles into its fleet, the county is working to reduce vehicle miles traveled by county employees through its “County Without Walls” program. The program uses technology to encourage employees to complete work assignments from remote worksites instead of driving back to the office to submit paper reports. The county also has increased remote meetings and teleconferencing opportunities as a way to reduce travel.

For more information about San Diego County’s accomplishments, visit www.ca-ilg.org/BeaconAward/SanDiegoCounty.

Estimated Annual Results	
Cost Savings	Approximately \$1 million
Greenhouse Gas Reduction	901 metric tons Greenhouse gas reduction is the equivalent of taking about 170 passenger vehicles off the road.



Efficient Transportation

Continued

Santa Barbara

In 2009, the City of Santa Barbara implemented a shared-use vehicle program to reduce fuel costs and the number of vehicles in the city's fleet. Since the program began, the city has cut fuel use by eight percent, saving about \$84,000 annually.

Since the city needs fewer vehicles because of efficiencies from the shared use program, it was able to purchase two new electric vehicles instead of replacing 15 regular vehicles. As of 2012, one-third of the 480 vehicles in the city's fleet are either fuel efficient or use alternative fuel.

For more information about Santa Barbara's accomplishments, visit www.ca-ilg.org/BeaconAward/SantaBarbara.

Estimated Annual Results

Fuel Savings	8% reduction (about 22,400 gallons)
Cost Savings	\$84,000
Greenhouse Gas Reduction	199 metric tons Greenhouse gas reduction is the equivalent of taking about 41 passenger vehicles off the road.



Hybrid cars near the Santa Barbara pier



Climate-Friendly Purchasing

Sonoma County

Green purchasing is an important part of Sonoma County's climate action plan. The county's purchasing policy enables it to award contracts to green vendors for services or products that do less harm to the environment if the cost is within five percent of the lowest bid of other competitors. The county gives the same preference to local vendors to help reduce the greenhouse emissions associated with transportation of the products and to support the local economy.

View a video featuring Sonoma County's sustainability leadership and sustainability efforts of other Beacon communities at www.ca-ilg.org/SonomaSustainabilityVideo.

In addition, Sonoma County uses green janitorial supplies, integrated (non-chemical) pest management practices and operates a sophisticated surplus supply program. The county saves money by using surplus items from other departments ranging from office supplies to office furniture. Items not picked up for use in county departments are either donated to nonprofits that work with the county or are sold in online auctions to the public for reuse.

Since 2010, Sonoma County has reused approximately 435 surplus items and donated roughly 255 items to non-profit organizations. This has saved nearly \$70,000 in the past two years and helped reduce waste.

For more information about Sonoma County's accomplishments, visit www.ca-ilg.org/BeaconAward/SonomaCounty.

Estimated Annual Results

Items Reused	435 items reused
Items Donated	255 items donated
Cost Savings	\$70,000



Land Use & Community Design

Manhattan Beach

In 2010, the City of Manhattan Beach joined the Blue Zones Project–Vitality City Initiative,¹⁵ a regionally funded effort to enhance the well-being of people who live and work in the beach cities of Southern California. The goal of the regional partnership is to make the beach community a more walkable, bikeable, healthy and socially engaged place by implementing sustainable land use and community design principles.

In 2011, the City of Manhattan Beach adopted a Vitality City Livability Plan, a bicycle master plan and secured funding to enhance its Safe Routes to Schools program to make it safer for students to walk and bike to school.

In 2012, the city established a goal to double the number of bicycle paths in the city. To accomplish this, the city is developing a mobility element for its general plan to focus on increasing biking and walking opportunities and help create a healthier, more bike and pedestrian friendly community.

For more information about Manhattan Beach’s accomplishments, visit www.ca-ilg.org/BeaconAwardManhattanBeach.

Biking instead of driving a small car five miles each day, or 2,000 miles a year, can help reduce 1,850 pounds of greenhouse gases each year. If half of the 35,135 people (2010 Census) living in Manhattan Beach biked five miles a day, it would reduce greenhouse gas emissions by 14,742 metric tons annually.¹⁶



Bike rider on path in Manhattan Beach



Open Space & Offsetting Carbon Emissions

Riverside

The City of Riverside launched the “Tree Power Program” in 2001 to increase its urban forest and help its residents save electricity and money. Well-placed trees not only provide shade that can reduce cooling costs by as much as 30 percent¹⁷, they also remove air pollution and absorb carbon dioxide, a greenhouse gas. Through the Tree Power Program, the city offered one free shade tree per year to residents, and a \$25 rebate per tree for the purchase of up to five more.

Riverside residents planted more than 100,000 trees during the first ten years of the program which resulted in over \$500,000 of direct economic investment in local nurseries. It is estimated that activities associated with the Tree Power Program account for a decrease of 16.2 million kilowatt hours of electricity and 9,160 metric tons of greenhouse gas emissions each year.

For more information about Riverside’s accomplishments, visit www.ca-ilg.org/BeaconAward/Riverside.

Estimated Annual Results

Trees Planted	Total number of shade trees planted: 102,768
Energy Savings	16.2 million kilowatt hours
Greenhouse Gas Reduction	9,160 metric tons Greenhouse gas reduction is the equivalent of taking 2,190 passenger vehicles of the road.





Open Space & Offsetting Carbon Emissions

Continued

One acre of mature fruit trees can absorb the amount of greenhouse gas that is produced by driving 26,000 miles. Redlands' 209 acres has the potential of absorbing as much greenhouse gas that is as produced by driving 5,434,000 miles or the annual average number of miles driven by approximately 450 Californians.¹⁸

Redlands

The City of Redlands' open space preservation program began in the 1960's when it acquired several citrus groves using federal grants and money donated by its residents. Additional groves were acquired through the years, bringing the city's total to 16 citrus groves over 209 acres. Revenue received from the fruit harvested is used to continue the ongoing care of the trees.

In the 2010-2011 fiscal year, the city harvested about 118,200 pounds of oranges and 3,648 field boxes of grapefruit, producing \$112,428 in revenue. With nearly 21,000 trees, the groves produce 543 tons of oxygen each year.

For more information about Redland's accomplishments, visit: www.ca-ilg.org/BeaconAward/Redlands.



Redlands citrus grove.



Open Space & Offsetting Carbon Emissions

Continued

West Sacramento

In 2004, the City of West Sacramento adopted a comprehensive municipal urban forestry program. In addition to providing free shade trees and education to residents and community groups, the city is creating innovative demonstration projects that enhance the city's landscaped areas. In 2010, the city planted 375 trees and 10,000 square feet of grasses. The new plantings are irrigated by a filtered water pumping system connected to the existing storm water reclamation system.

This project provides multiple benefits to the community. It is a way to use open space to create a more beautiful city, while at the same time using storm water for irrigation, thus saving water and reducing greenhouse gas emissions associated from energy to pump water.

For more information about West Sacramento's accomplishments, visit www.ca-ilg.org/BeaconAward/WestSacramento.

Apple Valley

The Town of Apple Valley has worked with state and federal wildlife agencies since 2010 to create a multiple species habitat conservation plan. The plan's goal is to proactively preserve open space, protect threatened and endangered species and maintain the city's high-desert character. Preserving open space and other natural systems act as "carbon sinks" which remove carbon dioxide from the atmosphere.

In addition to assuring that future development within Apple Valley meets the requirements of the federal and state Endangered Species Acts, the plan will streamline the environmental permitting process and reduce costs for developers wishing to do business in Apple Valley.

For more information about Apple Valley's accomplishments, visit www.ca-ilg.org/BeaconAward/AppleValley.



Community & Individual Action

Chula Vista

In 2011, the City of Chula Vista launched the CLEAN Business Program to encourage the business community to adopt sustainable practices and be more environmentally friendly.

The program recognizes local businesses that commit to improve their performance in energy and water conservation, pollution prevention and waste reduction. Over 140 businesses ranging from small shops to major corporations participate. In 2012, the city initiated a year-long, friendly competition to encourage participants to achieve even higher sustainability goals than set in previous years. After six months, all of the participating businesses implemented new sustainability practices, with an average 25 percent increase in their sustainability "score."

Chula Vista provides CLEAN Business Program participants with free marketing and advertising through in-store banners and decals, direct mailers, newspaper articles, television commercials and City Council certificates. The program receives support from local business associations and utility providers.

Chula Vista's Green Business Program is part of a larger city-wide effort that has achieved substantial results. From 2009 to 2010, Chula Vista achieved a 4 percent decrease in commercial and a 12 percent decrease in industrial greenhouse gas emissions.

For more information about Chula Vista's accomplishments, visit: www.ca-ilg.org/beaconaward/chulavista.

View a video about Chula Vista's sustainability leadership at: <http://www.ca-ilg.org/videos/ChulaVistaSustainabilityVideo>



City staff showing business leader water efficiency technique.



Community & Individual Action

Continued

Palo Alto was one of the first cities in the nation to pilot the app, a public-private partnership that used Facebook as a platform. In 2012, the application became available nationwide through participating utilities.

Palo Alto

The City of Palo Alto uses technology and some friendly community competition to encourage its residents to reduce energy use. Starting in 2010, the City of Palo Alto began issuing Home Energy Reports and made a “social energy” software application available to customers so that they could share and compare their electricity use with friends on Facebook and customers of similarly sized homes. The “app” keeps a running total of electricity use and provides new ways for participants to discover energy efficiency, conservation and money saving opportunities.

In the first year of the program, customers reduced energy consumption by 1.46 percent, with more than half of the savings coming from high-consumption customers. The total estimated annual energy savings attributed to behavioral changes for the first year of the program were 955 megawatt hours of electricity and 110,764 therms of gas.¹⁹

For more information about Palo Alto accomplishments, visit www.ca-ilg.org/BeaconAward/PaloAlto.

Estimated Annual Results

Energy Savings	955 megawatt hours of electricity 110,764 therms of gas
Greenhouse Gas Reduction	1,228 metric tons Greenhouse gas reduction is the equivalent of taking 256 passenger vehicles off the road.

Endnotes

¹ See “Residential Appliance Saturation Study” report that estimates energy use by average California homes. California Energy Commission, 2009. www.energy.ca.gov/appliances/rass/.

The energy efficiency activities of the twenty cities and counties participating in the Beacon Award program began before they agencies participating in the program.

² See U.S. Environmental Protection Agency, Glossary of Climate Change Terms: www.epa.gov/climatechange/index.html

³ City of Palm Springs staff estimates annual water savings to be between 435,000 and 2.7 million gallons, depending upon which formula is used to calculate the savings. More definitive numbers will be available after the program has been underway for a few years.

⁴ Energy use to supply outdoor water in southern California is estimated at 11,110 kWh/million gallons. California Energy Commission. “Refining Estimates of Water-Related Energy Use in California.” December 2006. www.energy.ca.gov/2006publications/CEC-500-2006-118/CEC-500-2006-118.PDF

⁵ The Landscape Maintenance District is a special assessment district established by the City of Santa Clarita in 1997 to fund and maintain landscaping and related areas for slopes and common areas. Thirty-four Landscape Maintenance District zones are under the city’s jurisdiction, encompassing over 700 acres of landscape and hardscape features. The revenues for the district are collected and administered by the city through an assessment on the property tax bills of properties within the district.

⁶ LEED, which stands for Leadership in Energy and Environmental Design, is a green building rating system established by the U.S. Green Building Council. www.usgbc.org/

⁷ LEED, which stands for Leadership in Energy and Environmental Design, is a green building rating system established by the U.S. Green Building Council. www.usgbc.org/

⁸ For more information about the California Green Building Code standards, see www.bsc.ca.gov/Home/CALGreen.aspx.

⁹ See “Green Building Market Grows 50% in Two Years despite Recession.” McGraw-Hill Construction Report. www.construction.com/aboutus/2010/1112pr.asp

¹⁰ The California Solar Initiative (CSI) is the solar rebate program in California for customers of the investor-owned utilities—Pacific Gas and Electric (PG&E), Southern California Edison (SCE), and San Diego Gas & Electric (SDG&E). Through the CSI, the California Public Utilities Commission is providing \$2.1 billion to businesses, non-profit organizations, public agencies and homeowners.

¹¹ A fuel cell converts chemical energy from a fuel into electricity through a chemical reaction. Tulare’s fuel cells use a molten carbonate process that operates at high temperature of 600 °C which generates steam that can increase efficiency.

¹² The California Public Utilities Commission Self-Generation Incentive Program (SGIP) provides incentives to support existing, new, and emerging distributed energy resources. The SGIP provides rebates for qualifying distributed energy systems installed on the customer’s side of the utility meter. To learn more about the program visit: www.cpuc.ca.gov/PUC/energy/DistGen/sgip/

¹³ For more details about the Tulare fuel cell system, see Tulare Waste Water System Case Study at www.fuelcells.org/resources/reports-case-studies/

¹⁴ Data referenced from Tulare Case Study at www.fuelcells.org.

¹⁵ The Beach Cities Health District (BCHD) identified an opportunity for the Beach Cities (Redondo Beach, Hermosa Beach, and Manhattan Beach) to compete in a national contest to participate in the innovative Blue Zones Project initiative.

The Beach Cities were selected to be the world’s first Blue Zones Project by Healthways and Blue Zones from over 70 other cities across the nation (the Blue Zones Project principles were first tested in Albert Lea, Minnesota).

The Blue Zones concept was documented by Dan Buettner in the New York Times best-selling book, “The Blue Zones: Lessons for Living Longer from the People Who Have Lived the Longest.”

¹⁶ Numbers derived using information from www.terrapass.com/carbon-footprint-calculator-2/.

¹⁷ Numerous websites refer to a U.S. Department of Agriculture Forest Service statement that “Trees properly placed around buildings can reduce air conditioning needs by 30% and can save 20–50% in energy used for heating.” This includes the Arbor Day Foundation at www.arborday.org/trees/benefits.cfm.

¹⁸ Numbers derived using information from www.treepeople.org/top-22-benefits-trees.

¹⁹ Statistics obtained from the City of Palo Alto using the assumptions detailed in the following report. www.cityofpaloalto.org/civicax/filebank/documents/14820.



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