

Sustainability's New Normal: Capturing Multiple Benefits

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July 2013

More than 65 years ago Mahatma Gandhi said, “The future depends on what you do today.” And more recently teenage poet Mattie Stepanek observed, “Even though the future seems far away, it is actually beginning right now.” When local agencies adopt programs and policies to reduce greenhouse gas emissions and adapt to the long-term impacts of climate change or implement policies to conserve energy, water and other resources, they are looking beyond today and into the future. In doing so, they also realize multiple benefits from their actions.

California cities and counties are increasingly finding that investing today in energy efficiency and other activities that promote sustainability and reduce greenhouse gas emissions has many immediate and longer-term benefits. These additional benefits, where one activity creates positive impacts in other areas, are known as “co-benefits.” One co-benefit of investing in sustainability programs today is helping position a community to adapt to future impacts of climate change over the long term.

More Than Saving Energy

Even relatively modest sustainability actions can have important co-benefits, as the City of Sacramento learned. Beginning in 2011, throughout eight city-owned public parking garages the city began replacing more than 4,000 existing high-intensity discharge lights with new light-emitting diodes (LEDs), which use two-thirds less energy than the existing lights. In addition, most of the 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. This reduces energy use by an additional 40 percent. Over the 11-year life of the LEDs, the lighting retrofit is expected to save the city \$3.3 million.

Beyond the energy and financial savings, the parking garage lighting systems also provide Sacramento with public safety and maintenance co-benefits. When police patrols see a normally low-lighted parking garage area fully lit at 2:00 a.m., it alerts them to possible criminal activity. Similarly, the city saves on maintenance and labor costs, as the energy-efficient LEDs last longer and thus do not need replacing as frequently as traditional lighting.

The City of Beaumont hit a home run when it reduced the number of lights at a baseball field in a city park, saving energy, money and maintenance costs. Working with a sports lighting designer, the city actually optimized the lighting by reducing the number of

lights. The city replaced 36 quartz light fixtures with 18 high-intensity metal halide fixtures, reducing the lighting output by more than 1 million lumens (lumens are a standard measure of light). Although the ball field has less light overall, it is more evenly lit to maximize efficiency and create a better viewing experience.

Trees, Water and Energy

The City of West Sacramento launched a comprehensive municipal urban forestry program in 2004. The program provides free shade trees and education to residents and community groups and creates 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 landscaping is irrigated by a filtered water-pumping system connected to the existing stormwater reclamation system.

West Sacramento's urban forestry program offers multiple benefits. It provides shade trees for residents, lowers cooling costs and reduces the "heat island" effect. It also conserves water by tapping into the stormwater reclamation system and uses less electricity to pump water. This enables the city to plan ahead for the possibility of future reduced water availability due to the impacts of climate change.

The multiple benefits of smart irrigation systems can be seen in cities such as Simi Valley, Woodland and Santa Clarita. Smart irrigation systems function like a thermostat by responding to weather and moisture content in the soil and adjusting the amount of water dispensed accordingly. Estimates suggest that installing smart irrigation systems can reduce water use by 20 percent. Additional benefits can include reducing:

- Energy costs related to pumping and distributing water;
- Vehicle miles traveled by agency staff (and

Understanding Co-Benefits and Adaptation

The term "co-benefit" is often used in the public health community to describe multiple, ancillary health benefits of a program, policy or intervention. For example, community design strategies that increase access to parks and make walking and bicycling easier also have direct and indirect co-benefits of improving residents' health. Similarly, co-benefits of activities that save energy or water include saving taxpayers' money and reducing maintenance costs.

Adaptation activities help a community respond to the impacts of climate change and make them more resilient in the face of impacts. Some observers consider adaptation to be a co-benefit of individual sustainability activities. For example, in addition to the most commonly identified benefit of investing in energy efficiency — saving money — using less energy can position an agency or homeowner to be nimble in the face of future rising energy costs and possible shortages. Conserving energy also lessens pressure on the existing energy infrastructure. Likewise, besides saving water and money, using water-efficient landscaping or installing water-efficient appliances extends existing water supplies and helps to reduce water-related vulnerabilities resulting from climate change.

related fuel costs) to inspect landscaped areas; and

- Staff resources needed to maintain the irrigation systems.

Sustainable Communities Are Resilient

Over the past five years, most of the activity related to climate change has focused on reducing greenhouse gas emissions. Local agency and community investments in projects and policies designed to save energy and reduce greenhouse gas emissions will continue to be important. Recently, however, more attention is being given to understanding how actions taken today can help the community adapt to the impacts of climate change in the future.

Thus, policies and programs implemented now to help adapt to the impacts of climate change, such as water shortages and severe heat events, will make communities more resilient and able to rebound more quickly. By launching such efforts, local officials can plan for the future, help their communities save money and reap multiple benefits today.

Consensus on Climate Change

The scientific consensus is that the consequences of climate change are happening sooner than previously thought. They are likely to include higher temperatures; an increase in extreme weather events such as heat, heavy rain and storms; flooding; and reduced snowpack and resulting water shortages.

Additional Resources

(If using a printed copy of this resource, please go to www.ca-ilg.org/CapturingMultipleBenefits to access the links below.)

- **Institute for Local Government Resources White Papers and Articles**
 - [The Co-Benefits of Sustainability Strategies](#)
 - [Climate Change and Public Health: An Overview for Local Officials](#)
 - [Smart Irrigation Technology Stories — Three Communities, Three Experiences](#)
- **Other Related ILG Resources**
 - [Sustainability Best Practices Framework](#)
 - [Beacon Award Program Participant Accomplishments](#)
 - [Adapting to Climate Change](#)

- **Other Resources**

- [*Living with a Rising Bay: Vulnerability and Adaptation in San Francisco Bay and on its Shoreline.*](#) Bay Conservation and Development Commission Staff Report. 2011.
- [State of California Cal-Adapt Website](#)
- [California Adaptation Planning Guide](#)
- Bay Area Joint Policy Committee:
 - [Bay Area Climate & Energy Resilience Project](#)
 - [Bay Area Integrated Win-Win Strategies for Building Resilience and Reducing Greenhouse Gas Emissions](#)
- [Statewide Energy Efficiency Collaborative](#)

About this Resource

This resource is a service of the Institute for Local Government (ILG) whose mission is to promote good government at the local level with practical, impartial, and easy-to-use resources for California communities. ILG is the nonprofit 501(c)(3) research and education affiliate of the League of California Cities and the California State Association of Counties.

For more information and to access the Institute's resources on sustainable communities, visit www.ca-ilg.org/sustainability. If you would like to access this resource directly, go to www.ca-ilg.org/CapturingMultipleBenefits.

The Institute welcomes feedback on this resource:

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