
Local Government Case Study:
City of Redondo Beach

Background

- Location: Los Angeles County
- Population: 63,261
- Size: 450 full-time employees
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Summary

After facing increased energy costs, the City of Redondo Beach with the help of consultant RAND Corporation conducted a comprehensive energy audit and implemented several energy-savings programs. Key programs of the energy campaign, some of which were rewarded with rebates, included the conversion of 1,928 traffic signals to LED, installation of window film to city facilities and installation of a cool roof on City Hall. The City of Redondo Beach also cosponsored numerous energy conservation workshops and discussions. At the summer's end, Redondo Beach had saved 142,841 kWh in energy, or 18.44 percent when compared with the summer before and was well on its way to reaching its goal of becoming a model of energy efficiency.

Referenced in Local Government Guides:

- #1, "Reduce Energy Use in Local Government Facilities Through Conservation Measures"
- #2, "Reduce Energy Use in Local Government Facilities Through Efficiency Improvements"
- #3, "Promote Energy Conservation and Efficiency Through a Public Outreach Campaign"

Plan

The Public Works Department conducted a comprehensive energy audit of city facilities as an initial step in determining which energy conservation methods were best suited for the city. Additionally, a senior energy adviser at the RAND Corporation conducted a free review of the city's

energy usage and made recommendations for becoming more energy efficient.

The city manager appointed an Energy Task Force consisting of representatives from every city departments. The duties of the task force included reviewing energy issues, developing and monitoring solutions and promoting employee and public education. After devising a plan of action, the task force projected savings due to energy conservation at \$200,000 per year, based on annual energy costs of \$1.9 million.

Redondo Beach also developed the Electrical Power Interruption Operation Plan in anticipation of blackouts. The plan outlines the emergency response steps to be taken by the police, fire and public works staff in the case of an electrical power outage. The plan issued the installation of uninterruptible power supplies (UPS), battery backup and generators. A UPS protected the main computer room and the battery backup and two generators protected the city's phone switch.

Programs: Conservation

✓ **HVAC:** Installed an energy management product at each A/C compressor on the rooftop A/C equipment. The energy management product adjusts the temperature on a real-time basis, rather than a continuous running mode, improving the efficiency of the compressors.

✓ **Lighting:**

- Turned off all decorative lighting in parks.
- Installed light sensors in city facilities.
- Installed two "Wattman" devices, which control wattage.

✓ **Weatherization:**

- Installed window film, which rejects 55 percent of the solar heat entering the building, at the Veterans Park facility and City Hall. The city chose window film that was visibly clear, and would not alter the appearance of the building.
- Applied a white coating to the roof of City Hall to decrease the amount of heat entering the building.

✓ **State mandates:** The statewide mandate Executive Order D-1901, issued in January 2001, required all retail

businesses to reduce unnecessary outdoor lighting wattage during non-business hours and had law enforcement agencies enforce the order. The Redondo Beach police utilized a partnership approach to help retail businesses conserve energy. After a preliminary trial period of two months, the city enforced the mandate by means of a misdemeanor fine of up to \$1,000. Fines were issued only after aggressive attempts had been made to provide information and education to the business.

Programs: Efficiency

✓ **Lighting:**

- Replaced electromagnetic ballasts and T12 lamps with electronic ballasts and T8 lamps.
- Replaced incandescent lighting with CFLs.

✓ **Street lighting:**

- Installed 1,928 LED traffic signals at 52 intersections.
- Installed a High Intensity Discharge (HID) lighting voltage controller on streetlights. This controller reduces voltage after a short warm-up period, thereby reducing power consumption without changing lighting levels.

Programs: Public Outreach

✓ **Flyers:** Distributed informational flyers with energy conservation tips to city employees.

✓ **Website:** Posted resource links related to energy conservation on the city's website and flyers and brochures were handed out to the public at city facilities.

✓ **Energy fairs/conferences:** Hosted or participated in several conferences on energy conservation including:

- The South Bay Energy Forum – a discussion by experts regarding the energy crisis – was produced with the cooperation of Hermosa Beach.
- The South Bay Cities Standing Committee on Energy was created with the help of nearby Torrance. The purpose of this forum was for South Bay cities to learn about available energy partnerships and innovative solutions and present these ideas to their respective city councils.

- Redondo Beach hosted the Energy Conservation Ideas Forum in cooperation with the Innovation Groups. This event consisted of 40 staff members from 15 cities who gathered to share their energy conservation methods.

Budget and Finance

The City of Redondo Beach received a rebate from Southern California Edison (SCE) for installing LED traffic signals at the majority of city intersections.

Redondo Beach received a 20/20 rebate from SCE for three months of the summer of 2001. The city will receive a rebate of \$4,500 from the State of California for the cool roof at City Hall.

The city applied for the Innovative Peak Load Reduction Program Reserve in the hopes of receiving a grant for the lighting retrofit. The grant was set at \$250 per estimated average peak kilowatt saved.

Pilot Programs: The city approached select manufacturing companies and negotiated deals that allowed the city to install energy-efficient products free of cost. The city vowed to examine the savings of the product, if any, after a 60 to 90-day trial period, at which time they would consider whether or not they would continue their relationship with the manufacturer and purchase additional energy-efficient equipment.

The pilot program was a win-win situation: If the company was confident in their product and the City of Redondo Beach was satisfied with the results of the trial period then the manufacturer was ensured more business from the city and good referrals. The city was allowed to determine the cost/ savings ratio of the product before purchasing a large quantity.

The Wattman device, window film and battery backup for traffic signals were used in pilot programs; the Wattman device is now being purchased for other city facilities.

Results

The Public Works Department designed a results-tracking system using Excel and worked with SCE on designing and formatting the information for disk. There was no additional cost to the city for this service.