The County of Ventura General Services Agency (GSA) has a Strategic Goal to “Reduce-Implement reduction actions for energy, water, paper, harmful cleaning and landscape products, and other resources used to conduct County operations.”

The GSA Maintenance Division’s objective to accomplish this goal is to “Reduce total energy consumption in GSA maintained facilities by 15% compared to the baseline year of 2005.”

In 2012, the total electrical use in all GSA maintained facilities was two percent (2%) less than 2011 and overall, 11% less than the average consumption from 2005 to 2009.

During 2012, GSA completed the installation of high efficiency, variable frequency drive chillers at the Todd Road Jail, Juvenile Facility and East County Court House; retrofitted lighting fixtures at fire stations, libraries and other buildings with the help of Ventura County Regional Energy Alliance and the American Resource and Recovery Act, Stimulus Funds; and installed variable frequency drives on cooling tower pumps. This resulted in a reduction in energy use of 2,258,007 kWh and reduced the County’s carbon footprint by 883 metric tons of greenhouse gas (GHG).

The projects are summarized below:

High Efficiency, Variable Frequency Drive Chillers

1,200,000 kWh Savings

360 metric tons of GHG reduction

$132,000 Annual Savings

44,500 therms Savings

220 metric tons of GHG reduction

$25,000 Annual Savings

GSA Maintenance identified three County facilities that would benefit from the installation of high efficiency, variable frequency drive chillers to cool the buildings.

At the East County Courthouse, cooling was provided by an ice harvester that was operating inefficiently and well beyond its useful life. At the Todd Road jail, cooling was provided by a natural gas fired absorption chiller that was beyond its useful life. At the Juvenile Facility, cooling was provided by a large 400 ton chiller that operated inefficiently at low loads.

A study determined that all three locations would benefit from the installation of a small, high efficiency chiller to provide cooling at low load conditions and provide needed redundancy at the Juvenile Facility.

Three Multi-Stack, high efficiency, variable frequency drive chillers with magnetic, oil-free bearings were installed at these locations. The first partial year of operation showed that electrical use at the three facilities dropped almost 13%, compared to an average of the previous two years, resulting in a reduction of 1,200,000 kWh and reducing the County’s carbon footprint by 360 metric tons of greenhouse gas.

In addition, natural gas use in the Todd Road Jail Central Plant dropped from approximately 45,000 therms per year to under 500 therms per year due to the replacement of the natural gas-fired absorption chiller. This reduced the County’s carbon footprint by an additional 220 tons of greenhouse gas.

Lighting Retrofits

906,594 kWh Savings

271 metric tons of GHG reduction

$780,559 Total Project Cost

$530,663 ARRA Funding

$ 69,425 SCE Incentives

$180,471 Net Cost

$131,717 Annual Savings

1.37 Year Payback

The County and Ventura County Regional Energy Alliance received grant funding under the American Recovery and Reinvestment Act of 2009 for lighting efficiency upgrades at 20 County buildings and 20 County Fire Stations as well as selected properties in Port Hueneme, Ojai, Santa Paula and Fillmore. The County of Ventura’s lighting retrofits will save 906,594 kWh and will reduce the County’s carbon footprint by 271 metric tons of greenhouse gas.

Variable Frequency Drives

106,913 kWh Savings

32 metric tons of GHG reduction

$15,582 Total Project Cost

$12,465 SCE Incentive

$15,000 Savings

GSA Maintenance installed two variable frequency drives (VFDs) on two cooling tower pumps at the Pre-Trial Detention Facility. By adjusting the speed of the pumps to match the needs of the building, electrical consumption of the two pumps is reduced significantly. The VFD’s will save 106,913 kWh and reduce the County’s carbon footprint by 32 metric tons of greenhouse gas.