



FY 2010

USDA Headquarters  
Energy & Water Management



USDA  
Office of Operations  
12/1/2009

## Background

The increases in electric rates and the significant reductions in operational budgets over the past few years has resulted in the need for Departmental Management (DM) to take more aggressive energy conservation measures as spelled out in this plan. Executive Order 13423 “Strengthening Federal Environmental, Energy and Transportation Management” requires a 3% annual reduction in energy intensity through the end of FY 2015 (30% reduction overall.) In addition, the E.O. requires that at least half the statutorily required (3%) renewable energy consumed by the agency in a fiscal year comes from new renewable sources and to the extent feasible, the agency implements renewable energy generation projects on agency property for agency use.

## Environmental Footprint

Operation	Elements or our operation that interact with the environment (Environmental Aspects)	Environmental Impact
Administrative Offices	<ul style="list-style-type: none"> <li>➤ Electronics</li> <li>➤ Vampire Electricity</li> <li>➤ Appliances</li> <li>➤ Supplemental A/C/ and Heating Units</li> </ul>	<ul style="list-style-type: none"> <li>➤ The primary environmental impact of electricity consumption is the production of greenhouse gases that contribute to global warming</li> <li>➤ Water use for irrigation and for cooling electric power plants are tops among US water uses. So, not only does using less electricity save you money and reduce global warming impacts, but it also protects our precious fresh water supplies.</li> <li>➤ USDA operations are not water intensive, but we recognize that water consumption is a growing concern. We are addressing our main uses of water: landscape irrigation, domestic use in the HQ facilities.</li> </ul>
Cafeteria & Food Service Operations	<ul style="list-style-type: none"> <li>➤ Hot Water Use For cooking Kitchen Appliances</li> </ul>	
Janitorial Services	<ul style="list-style-type: none"> <li>➤ Water used in cleaning</li> </ul>	
Operation & Maintenance	<ul style="list-style-type: none"> <li>➤ Lighting</li> <li>➤ HVAC</li> </ul>	
Landscaping	<ul style="list-style-type: none"> <li>➤ Water Use irrigation</li> </ul>	

## Objective

Reduce energy and water use, increase efficiency of related systems and reduce dependency on non-renewable energy sources

## Goals

- **Energy Efficiency:** Reduce energy intensity 30 percent by 2015, compared to an FY 2003 baseline.
- **Greenhouse Gases:** Reduce greenhouse gas emissions through reduction of energy intensity 30 percent by 2015, compared to an FY 2003 baseline.
- **Renewable Power:** At least 50 percent of current renewable energy purchases must come from new renewable sources (in service after January 1, 1999).
- **Water Conservation:** Reduce water intensity (gallons per square foot) by 2% each year through FY 2015 for a total of 16% based on water consumption in FY 2007.
- **Electronics Management:** Annually, 95 percent of electronic products purchased must meet Electronic Product Environmental Assessment Tool standards for energy conservation where applicable; enable Energy Star® features on 100 percent of computers and monitors.
- **Building Performance:** Renovate buildings in accordance with sustainability strategies, including energy and water conservation.

## Status of our Energy

In FY 2009, DM spent \$8,671,600 on facilities energy compared to \$9,593,000 in FY 2008 and \$9,000,000 in FY 2007.

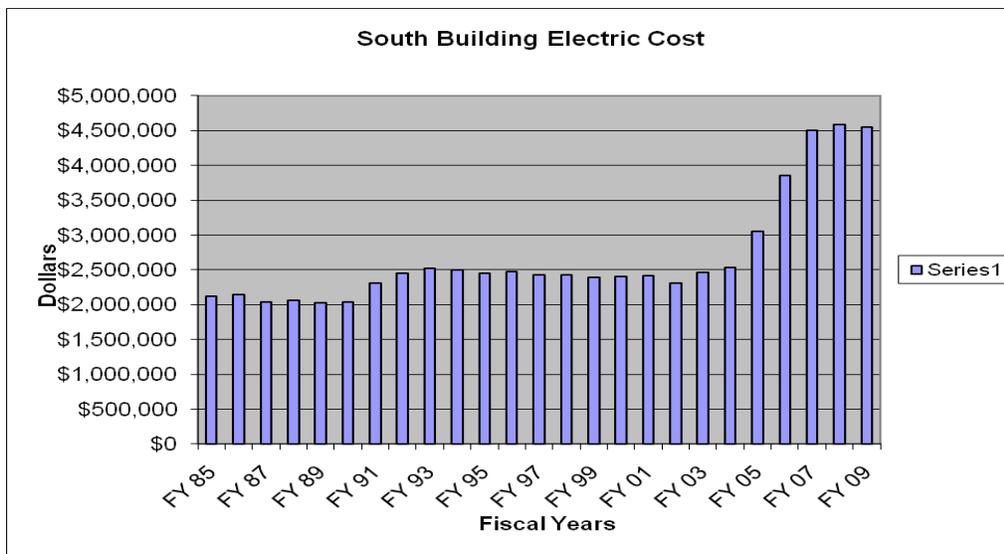
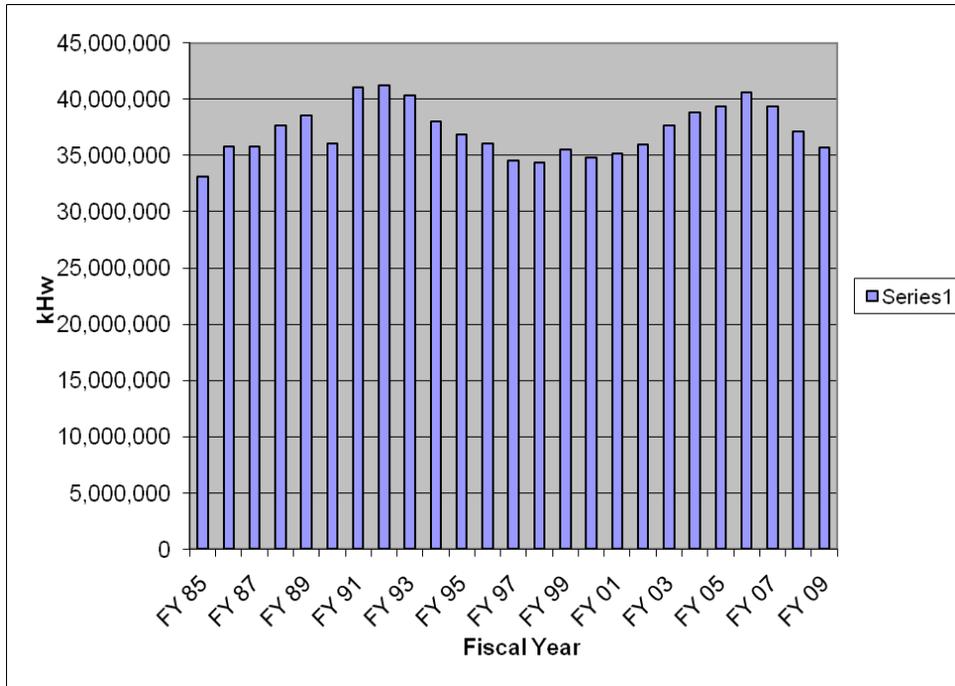
Between FY 2000 and FY 2006, there was a steady increase in electrical energy usage in the Headquarters Complex. Since FY 2006 there have been significant reductions in electric consumption due to increased and coordinated efforts by facilities staff, data center personnel, and office occupants. During FY 2009 there was a 5.4% reduction in electrical energy usage compared to FY 2008. In addition to electrical energy, we continue to see significant reductions in the usage of steam in the facility. In FY 2009 we have reduced our steam usage by nearly 40% compared to FY 2003 (baseline year) on a per square foot basis.

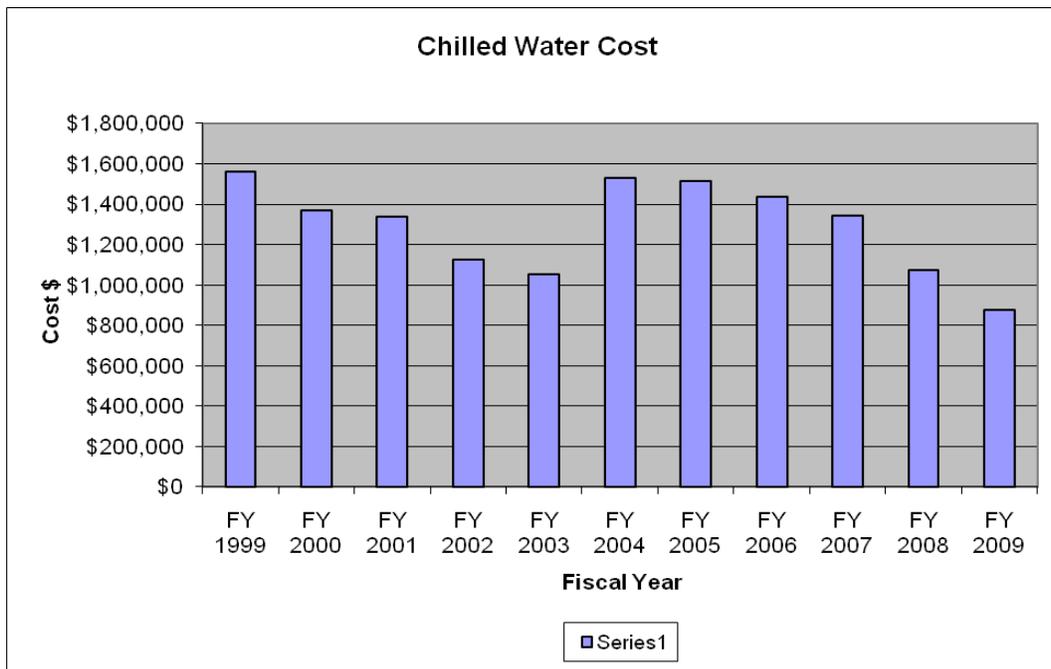
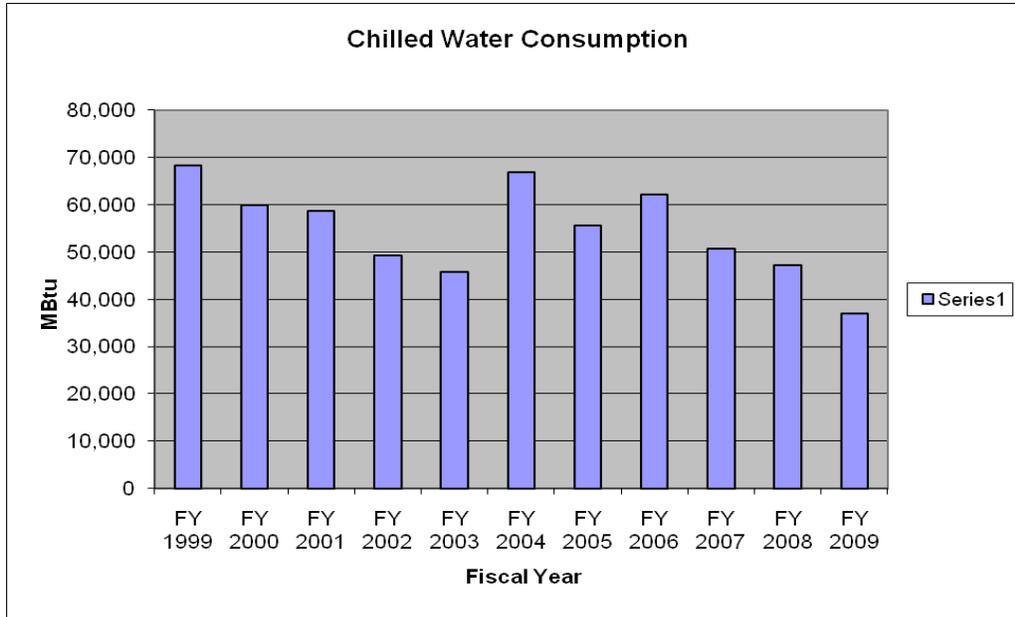
DM has made significant progress in FY2009 to improve energy efficiency and awareness in the Headquarters Complex in support of Executive Order 13423 including:

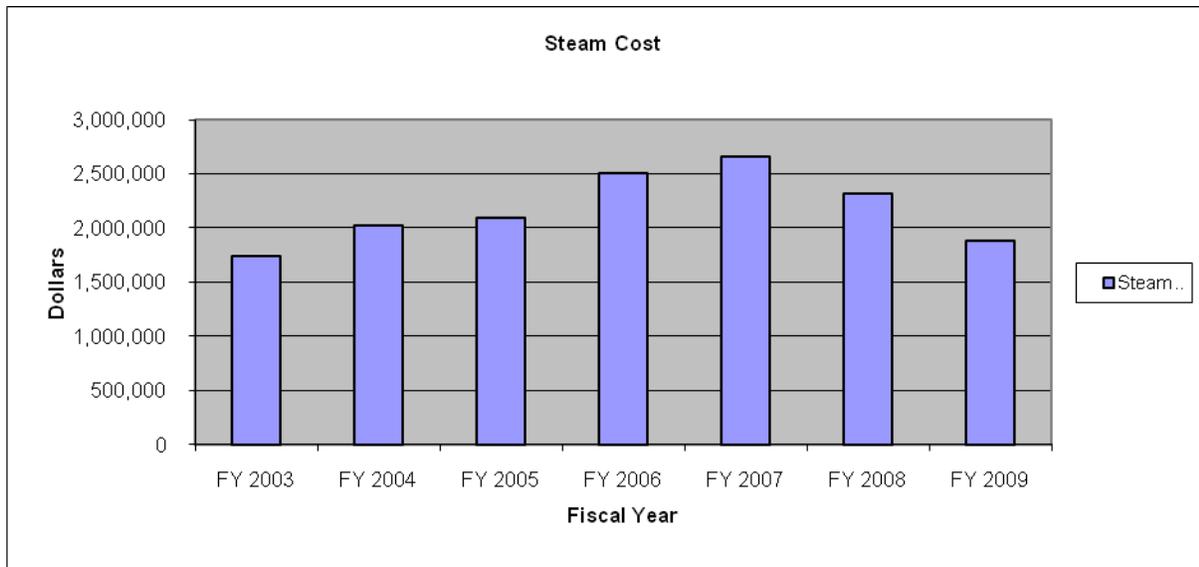
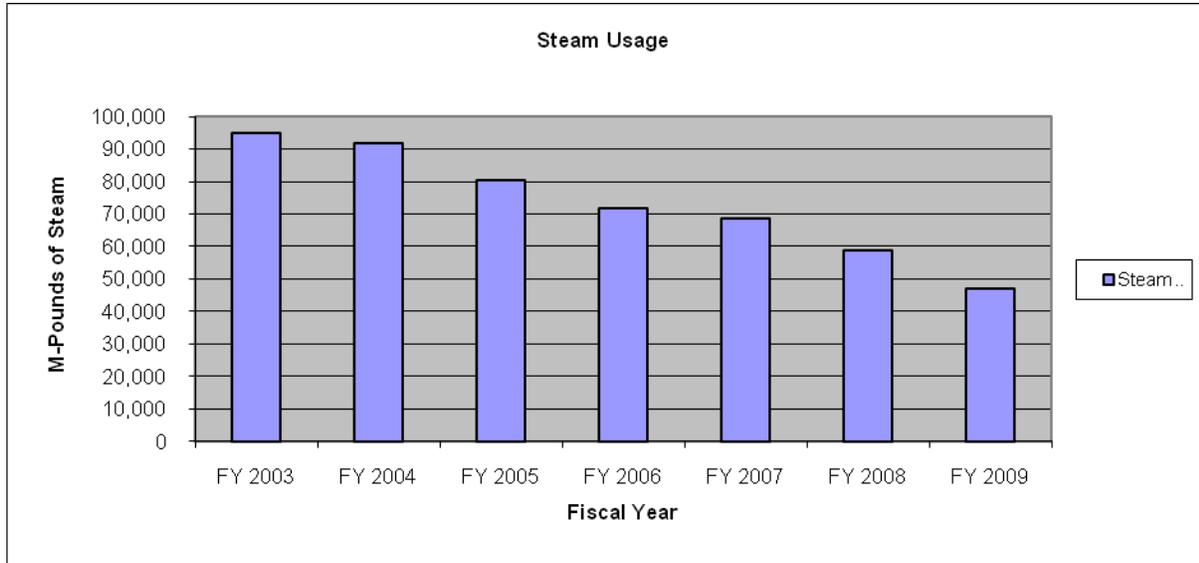
- The completed the first Task Order of a Utility Energy Savings Contract with Washington Gas and Light (WGL). The task order included retro-fitting over 8,000 light fixtures, upgrades to the South Kitchen, water efficient upgrades to the restrooms, and weatherization projects.
- During Energy Awareness month of October 2008, DM hosted an information table on how employees can save energy at work and at home.
- Electrical survey of Data Centers. Completed the installation of electrical sub-meters on data centers.
- Determining feasibility of a photovoltaic array installation at the Carver Center

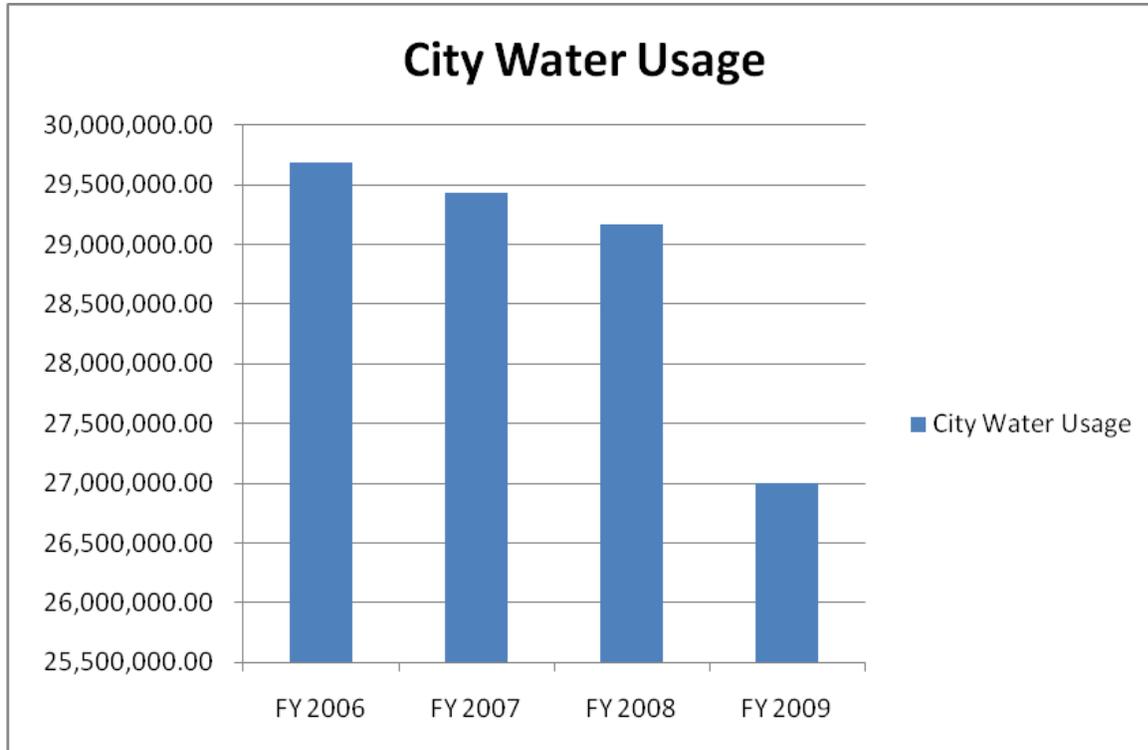
- Implemented an Interruptible Load Response Program including a Facility-Wide test of the System in June.

The Figures below illustrate the Headquarters (Whitten, South, and Cotton) electrical energy usage and costs for the past 25 years. As of October 2007, Cotton Annex was removed from our building inventory. As you can see, there has been a steady increase from FY00 to FY06, due to office automation and increased loads from the data centers, and space utilization policies.









### Targets FY 2010

1. To identify and reduce, if possible, after-hours and constant energy loads causing significant consumption of resources.
2. To identify after hours electrical loads that cannot be reduced and ensure those burdens are offset by tenant reimbursements.
3. To establish a framework to reduce energy consumption to meet or exceed Presidential mandates and legal requirements.

## Action plan for 2010

Scheduled Actions	Contact Person
Photovoltaic Arrays at Headquarters & Carver Center	Project Leader- Ed Hogberg
Construction Phase 4A of the South Building Modernization	Project Leader- Mike Sazonov. Personnel Assigned Bahn Lam, Hossein Amini
Demand Response Program	Project Leaders- Ed Hogberg (Administrative), Ed Murtagh (Implementation, O&M coordination) Personnel Assigned, NATI, Vicki Taylor, P.V. Alexander
Chiller Replacement Project	Project Leader- Mike Sazonov. Personnel Assigned Bahn Lam, Hossein Amini
Green Power Purchase Update	Project Leader- P.V. Alexander
Outreach Events	Project Leader – Ed Murtagh

## Performance Indicators

The Office of Operations (OO) maintains an advance metering system for measuring and recording usage data. OO reviews energy usage daily to look for abnormalities and adjust energy usage accordingly.

## Operational Controls

There are certain controls in place to maximize opportunities for energy and water reductions. Operational controls come in the form of policy, guidance, contractor specifications, as well as employee awareness. Various operational controls for this environmental program are outlined in our HQ Environmental management system.

## Team Roles

The HQ's EMS core team manages this program. This team relies heavily on volunteer participation from the USDA HQ Green Team. Team members provide a wealth of knowledge and experience in a broad range of areas, they volunteer their time based on their specific expertise and area of interest. Without their effort, many of our achievements would be not obtainable.

## Records

EMS core team members maintain records for this program along with other environmental program at headquarters.