



FY 2011 Sustainability Performance Review

Department of Central Services
Office of Facilities Management

Mike Enneking, Director

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http://www.ok.gov/DCS/Office_of_Facilities_Management/Sustainability_Program/index.html

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Contents

[The Office of Facilities Management](#) 4

[The Office of State Leasing](#) 5

[Executive Summary](#) 6

[Goal 1: Sustainable Building Practices](#) 7

[Goal 2: Vehicle Related Pollution](#) 8

[Goal 3: Maximize Recycling, Minimize Waste](#) 9

[Goal 4: Reduce Facility Energy & Water Use](#) 11

[Goal 5: Reduce Toxic Products & Chemicals](#) 16

[Goal 6: Sustainable Practices in State Leasing](#) 17

[Future Objectives](#) 18

[Goal 1: Implement Sustainable Building Practices](#) 18

[Goal 2: Reduce Transportation Related Pollution](#) 18

[Goal 3: Maximize Recycling, Minimize Waste](#) 18

[Goal 4: Reduce Facility Related Energy & Water Use](#) 18

[Goal 5: Reduce Use of Toxic Products & Chemicals](#) 19

[Goal 6: Sustainable Practices in State Leasing](#) 19

The Office of Facilities Management

Mission: Provide a safe, comfortable workspace for our tenants and guests through quality facilities and responsive service.

The Office of Facilities Management (OFM) is committed to sustainable practices and the stewardship of resources to make state government and its public sector partners an example of sustainable stewardship for the citizens of the state. OFM's unique role of assisting customers in procurement of goods and services, remodel and renovation projects, and the operation of state facilities affords exceptional opportunities to pursue sustainability, as reflected in its' strategic plan.

OFM consists of 65 employees in four divisions:

- *Administration*
- *Energy Management*
- *Facilities Services*
- *Office of State Leasing*

OFM Responsibilities

- Oversee annual renewal of contracts for a multitude of services and commodities.
- Manage the design and construction projects in DCS-managed buildings; OFM has taken a lead role in promoting and developing sustainable building practices.
- Continue to promote sustainability in the design, construction, & operation standards for state-owned facilities through the objectives in the OFM Sustainability Plan.
- Provide maintenance & grounds operations on the Capitol Campus, customer/tenant improvement services, fire & security systems maintenance, heating ventilation & air conditioning (HVAC) operations, environmental & life safety, & card access for public facilities.
- Pursue the on-going conservation of energy/resources and reduction of utility costs for state facilities.
- Authorizing, negotiating, managing, contracting, and reporting space in both state buildings and space leased from the private sector throughout Oklahoma.
- Offer solutions in managing supplies, logistics and warehousing services.
- Welcome hundreds of thousands of visitors each year to the historic buildings and grounds of the Capitol Complex in Oklahoma City.
- Manages energy efficiency projects: monitors & benchmarks Energy Star ratings and energy conservation measures for facilities, and provides operations support services for Facilities Services.
- OFM is working with its partners to ensure a sustainable future for all Oklahoma residents.

The Office of State Leasing

Mission: Assist state agencies in accomplishing their missions by providing essential real estate services through uniform leasing and space standards, detailed space evaluations, uniformity in contractual terms, favorable and economical rental rates, and agency staff training.

The Department of Central Services (DCS) is statutorily charged with the responsibility for assigning all space in state-owned and non state-owned facilities, authorizing the amount of space to be acquired by agencies, and executing all leasing contracts on behalf of the agencies. The Director of DCS has delegated these responsibilities to the State Leasing Office.

State Leasing Responsibilities

The Office of State Leasing seeks to assist our client agencies in the performance of their mission by:

- Assigning space in state-owned buildings or leasing space from the private sector.
- Authorizing the amount of space to be acquired by state agencies and executing leasing contracts on behalf of state agencies.
- Assisting the client agencies in completing the required forms.
- Serving the unique real estate needs of state government leasing by providing expertise in various types of space including industrial, storage, parking, hangar, boat slips, etc.
- Providing expertise in property management, lease terms and conditions, and market rate information to the agencies we serve.
- Providing information and encouraging the real estate community to do business with the State of Oklahoma.
- Maintaining a computerized database of leased and owned real property for the approximately 4.4 million square feet occupied by state agencies.
- Providing a single communication point for all state agencies and the real estate community regarding: leased space; state owned space; space standards; lease terms and conditions; rental rates; and contract expectations.

Executive Summary

OFM established a goal-oriented sustainability plan for fiscal year 2009 (FY09) to reduce energy use and associated costs of state building operations. In reducing consumption and excess spending, OFM minimized the environmental impact of its facilities and maximized the efficiency of building equipment.

The establishment of sustainability goals demonstrates OFM's commitment to financial and environmental stewardship. The plan's accountability system will ensure continuous improvement each year by determining manageable targets and sharpening each unit's priorities. This report presents the goals, objectives, measurements and related annotations for fiscal year 2011 (FY11). When not specified, the benchmark year is FY08.

As a fundamental service provider to state and other public agencies, OFM has the opportunity to be a leader in sustainable stewardship in three key areas:

- *Design and construction management of public works projects;*
- *Operations & maintenance of DCS-managed facilities;*
- *Procurement of goods and services.*

Purposes

- To assess OFM's environmental impacts.
- To create a long-term vision for reducing the division's environmental impacts with interim organizational goals.
- To provide a structure and mechanism with accountability for OFM to reduce negative environmental impacts from its operations.
- To address issues to make OFM's programs and activities more sustainable.
- To document OFM's leadership and commitment to improving the environment by more sustainable practices.
- To help our customers continue with their own sustainability efforts through OFM's example, leadership and technical assistance.

Goals

1. [IMPLEMENT SUSTAINABLE BUILDING PRACTICES](#)
2. [REDUCE TRANSPORTATION RELATED POLLUTION](#)
3. [MAXIMIZE RECYCLING, MINIMIZE WASTE AND PRODUCTS WITH 100% VIRGIN MATERIALS](#)
4. [MINIMIZE FACILITY RELATED CONSUMPTION OF ENERGY AND WATER](#)
5. [REDUCE USE OF TOXIC PRODUCTS AND CHEMICALS](#)
6. [SUSTAINABLE PRACTICES IN STATE LEASING](#)

Education & Outreach

OFM personnel promoted the DCS recycling program in DCS-managed facilities through the Earth Day 2011 Recycling Challenge. The Challenge pitted the employees in the Will Rogers, Sequoyah, Hodge & Connors buildings against each other to determine which group could accumulate the most recyclable materials during the contest period. Signage was designed, printed, and posted in high-traffic building entries. OFM also transmitted contest information to building tenants via email.

The *State of Efficiency* quarterly newsletter, a DCS publication, features training opportunities, energy consumption & reduction numbers, renewable energy generation totals, recycling accumulation, information about sustainable landscaping practices and much more. In the future, OFM hopes to gain access to a method of tracking subscriptions and newsletter readership to set a benchmark. OFM also plans to explore social networking sites to increase newsletter readership and effectiveness of communication.

The OFM website received a face lift to improve user-friendliness and reflect organizational changes & additions. The energy usage numbers are also made available on the DCS website through the energy management webpage which is designed to provide updated information on the OFM Sustainability Program and conservation resources for state employees.

Awards

Sustainable Facility Initiative Awards – Finalist – April 2011

EPA Energy Star Leader – 20% reduction in energy use/greenhouse gas emissions – February 2011

AGC 2010 Build Oklahoma Awards – DHS-CAP Renovation – January 2011

Buildings Magazine Project Innovations – Green Facilities, Merit Award – October 2010

Building Operating Management's FMXcellence Awards – Honoree – December 2010

Goal 1: Sustainable Building Practices

Objectives & Tasks

- 1.1 Publish OFM sustainable building standards.
Tasks: Develop OFM sustainable building standards (ANSI/ASHRAE/USGBC/IES 189.1).
- 1.2 75% of OFM's remodel & renovation projects will exceed minimum code standards.
Tasks: Notify architects & engineers of OFM building standards.
- 1.3 All repair & replacement projects will be best available for the application.
Tasks: Distribute OFM standards to design teams.

Progress to Date

- 1.1 Adopted ASHRAE High Performance Building Standards 189.1
- 1.2 Remodel & renovation projects now include lighting efficiency considerations, control strategies, etc.
- 1.3 Completed three (3) condensing boiler projects, installed 58 NEMA high-efficiency motors in 9 buildings and replaced heat pumps in the State Capitol building.

Challenges

OFM has no direct contracting authority in the building design and construction services of state buildings.

Due to time and funding constraints, all remodel & renovation projects are not modeled using a common measurement (watts per square foot).

No method presently exists to track whether remodel & renovations exceed or meet code standards. Who defines whether an entire project exceeds standards or just one aspect exceeds code and the other areas meet code? Objective 1.2 is too vague to produce proof of advancement.

A challenge to tracking improvement of objective 1.3 is that specific, measurable objectives are required to accurately monitor progress.

Goal 2: Vehicle Related Pollution

Objectives & Tasks

- 2.1 10% reduction of gasoline use by Mansion grounds equipment based on FY10 baseline.

Tasks: Replace gasoline equipment with electric when feasible/applicable.

Progress to Date

- 2.1 Two gasoline powered riding mowers were replaced with compressed natural gas (CNG) and electric mowers; three pieces of 2-cycle equipment (2 trimmers, 1 set of shears) replaced with electric equivalents.

Challenges

Benchmark usage not established in FY11. Central maintenance used 100 gallons of gasoline from the Mansion Grounds storage tank. Benchmark for CM shop and Governor's mansion will be established in FY2012.

Goal 3: Maximize Recycling, Minimize Waste

Objectives & Tasks

- 3.1 10% reduction in office paper use based on FY10 baseline.
Tasks: Expand State Leasing digital filing system; Eliminate unnecessary hard copies in internal processing; Acquire smart phones & provide AIM software training for Central Maintenance shop.
- 3.2 Maintain 100% recycled content for 100% of copy paper purchased for OFM use.
Tasks: Obtain waiver for SW017 from Central Purchasing.
- 3.3 Recycle 87% of OFM waste office paper.
Tasks: Continue Efforts
- 3.4 Janitorial paper products will contain 30% recycled content & manufactured chlorine-free, depending on market-availability.
Tasks: Monitor compliance of janitorial service contract.
- 3.5 Recycle all fluorescent lamps & rechargeable batteries.
Tasks: Establish baseline; publish recycling standard operating procedure; implement established SOP.
- 3.6 Dispose of compact fluorescent lamps through an environmental management program.
Tasks: Establish baseline; publish recycling standard operating procedure; implement established SOP.

Progress to Date

- 3.1 FY11 paper use (69 reams) increased from FY10 benchmark (55 reams) purchased. The Office of State Leasing expanded the digital filing system by establishing an internal policy to store and send documents electronically. OFM purchased smart phones for Central Maintenance staff and provided AIM training for paperless work order management.
- 3.2 OFM Purchasing unit obtained a waiver from Central Purchasing and standard purchasing procedure adopted.
- 3.3 The Office of State Leasing earned the Most Valuable Participant (MVP) title during the 2011 Earth Day Recycling Challenge and recycled more than 600 lbs of paper eliminating four file cabinets of storage space in the process.
- 3.4 Inquiry sent to Goodwill Industries & confirmed janitorial paper is made of at least 30% recycled content. Goodwill did not confirm if all paper is manufactured chlorine-free.

- 3.5 The benchmark for fluorescent tube recycling is based on number of requested pick-ups of 55-gallon drums of crushed lamps. A total of 23 drums were picked up, approximately 299,000 total lamps. OFM did not publish SOP.
- 3.6 Benchmark of one (1) 55-gallon drum established for CFL recycling. OFM did not publish SOP.

Challenges

Despite amount of paper distributed to Capitol, Annex, and Jim Thorpe offices decreased, internal paper use increased. The quantity of contracts/leases can fluctuate each year and affect OFM totals.

Official monitoring of paper recycling in OFM ended in FY10; no office recycling totals documented for FY11. Benchmark not officially established to compare recycling totals.

Unable to confirm if janitorial paper is manufactured using a chlorine-free process.

Rechargeable batteries are not used throughout campus and mostly used in power tools at the Central Maintenance shop. The batteries will be recycled at the end of their useful life. Metal Halide & Mercury Vapor lamps are also crushed in the same drums possibly skewing lamp totals. Increasing the # of lamps crushed may not always be positive as it could mean a higher rate of lamp failure.

Publishing the SOP for recycling lamps was not a priority in FY11.

Goal 4: Reduce Facility Energy & Water Use

Objectives and Tasks

- 4.1 Reduce greenhouse gas emissions/energy use by 22%.
Tasks: See FY11 Project List
- 4.2 Reduce water consumption per square foot by 30%.
Tasks: See FY11 Project List
- 4.3 Increase renewable energy production by 10% from FY10 baseline.
Tasks: See FY11 Project List
- 4.4 Achieve an Energy Star rating of 75 for ten (10) or more buildings.
Tasks: See FY11 Project List
- 4.5 Achieve Energy Star Portfolio average rating of >85.
Tasks: See FY11 Project List
- 4.6 Achieve power factor of 90 in all buildings.
Tasks: See FY11 Project List
- 4.7 Achieve six (6) Energy Star-certified buildings.
Tasks: See FY11 Project List
- 4.8 Two (2) employees attain energy manager certification.
Tasks: Research requirements and complete training.
- 4.9 Two (2) employees attain LEED Green Associate certification.
Tasks: Study & schedule exam.

Progress to Date

- 4.1 Energy efficiency upgrades, sustainability projects, and innovative programming strategies by OFM have resulted in a total energy reduction of **44,046,660 kilo-British thermal units (kBtu) (21%)** from FY08 usage to FY11 usage. [See chart 1.](#)

Replacing old pneumatic (air) building controls in multiple buildings with DDC (electric) controls has provided more precise operation of the heating and cooling systems. Sub-metering 16 electrical meters, the installation of lighting & motor controls, high-efficiency motors, and adding new scheduling strategies to the building automation system produced savings of **10,151,162 kilo-watt-hours (kWh) (22%)**. [See chart 2.](#) High-speed dock doors and window tinting were added to some buildings to secure the building envelope and reduce electrical use via heating/cooling demand.

The following major lighting projects contributed to electricity savings in FY11 by extending the useful life of lamps, reducing maintenance and minimizing energy consumption:

- Retrofitted more than 400 fluorescent lamps burning 24/7 with LED lamps;
- Retrofitted incandescent lamps (300 hour rated life) in the Jim Thorpe elevators with LED (25,000 hour rated life);
- Replaced fluorescent elevator lighting with LED at the State Capitol;
- Replaced metal halide flood fixtures with induction at Mansion Gatehouse;
- Replaced 1000 watt high pressure sodium rooftop lights with long life induction lamps at the Jim Thorpe, Denver Davison Courts and Allen Wright Memorial Library buildings;
- Replaced all exterior lights at Kerr-Edmondson building with extra long life induction lamps;
- Replaced 175 watt mercury vapor lamps with 40w induction lamps at the Veteran's Memorial.

FY11 Natural gas savings totaled **9,830 Dekatherms (Dth) (38%)** from FY08 usage totals. [See chart 3.](#) Due to the geothermal heating & cooling system, natural gas service was removed at the DHS-CAP building. OFM completed installation of condensing boilers at Will Rogers, Sequoyah & Allen Wright Memorial Library buildings. A domestic hot water boiler project at the Agriculture building also contributed to natural gas savings.

- 4.2 Water conservation efforts continued in DCS-managed facilities in FY11, reducing consumption by **17,662,000 gallons (32%)** from FY08 totals. Water usage per square foot decreased 34% from FY08 totals (24.966 gal/ft² in FY08 vs. 16.547 gal/ft² in FY11). [See chart 4.](#) The installation of native, drought-resistant landscaping around the State Capitol and plaza areas reduced irrigation demand.
- 4.3 Renewable energy totals were first recorded for the month of August 2010. Through August 1 2011, solar and wind sources produced a total of **180,414 kWh** of renewable energy, the equivalent of removing 310,312 lbs of CO² from the atmosphere.

Two photovoltaic (PV) solar projects were completed in FY11: 30kW at the DHS-CAP building & 6.5 kW at the Governor's Mansion Firehouse. The DHS-CAP building now features a total of 60kW of solar energy potential.
- 4.4 Nine (9) buildings earned an Energy Star rating of 75 or greater.
- 4.5 FY11 average portfolio rating of 83 is a 3 point improvement from the average rating at end of FY10. For the second straight year, OFM was named one of the US Environmental Protection Agency's (EPA) Energy Star Leaders in February 2011 for reduction in green house gas emissions and improving the energy performance of buildings on the Energy Star Portfolio by 20% or more
- 4.6 Not all buildings consistently maintained a monthly power factor of 90 or better; however, the average power factor of all buildings was 91 at the end of FY11.

- 4.7 As of July 1st, four additional buildings qualified and will be Energy Star certified in the first quarter of the FY12 totaling eight buildings. Buildings earning the Energy Star certification: Department of Agriculture, Attorney General, Department of Transportation, Allen Wright Memorial Library, DHS-CAP, State Capitol, Jim Thorpe and the Kerr-Edmondson.
- 4.8 Due to higher-priority job requirements, neither candidate completed certification.
- 4.9 Two employees completed registration and are approved by the Green Building Certification Institute (GBCI) to schedule their exam. Both plan to take the exam in September 2011.

Challenges

The Agriculture Laboratory represents approximately 2% of OFM-managed square footage, yet is responsible for 20% of campus natural gas usage. Humidification is required in the lab 24 hours per day, 7 days per week, further driving up natural gas and water consumption. Much of the building's key components use natural gas, shrinking the perceived impact of natural gas-saving efforts in other areas of the complex. Lack of funding for improvement/modernization projects may be a major issue in achieving energy efficiency objectives in the future.

A lack of sub-metering between Will Rogers, Sequoyah, Connors, and Hodge buildings and the inter-connecting tunnel system prevents Energy Star rating for each of these buildings individually, complicating the performance tracking & certification processes.

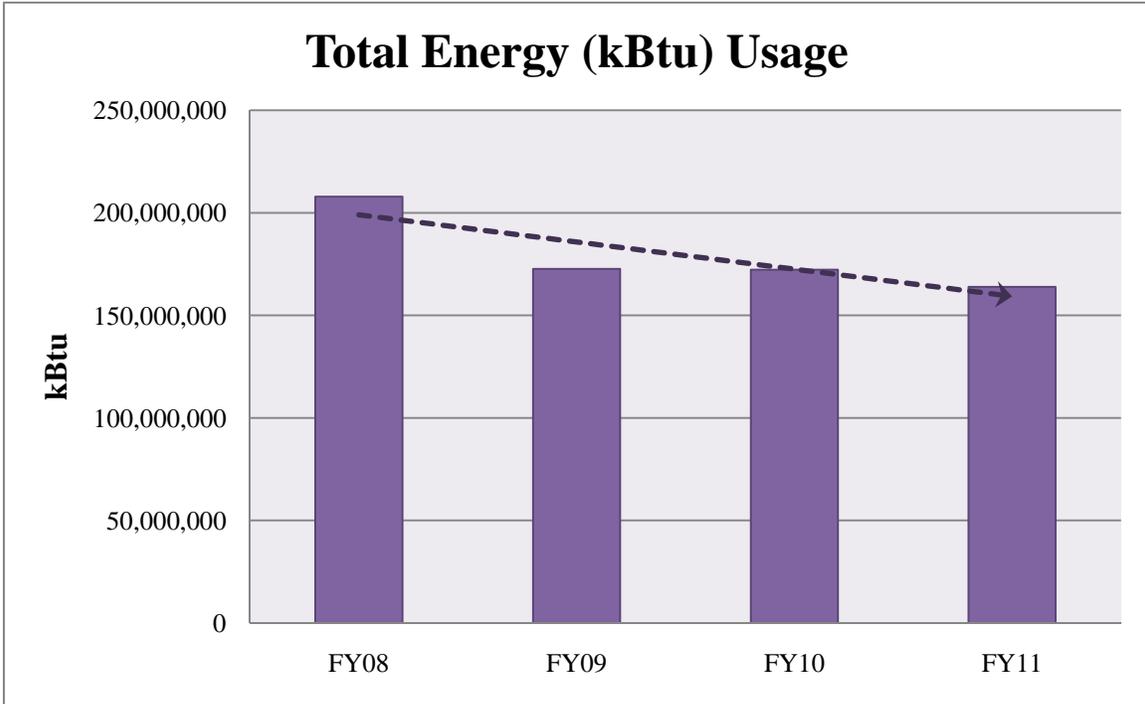
Due to scheduling conflicts and higher priorities, the LEED Green Associate exams and Energy Manager Certification tests were not completed.

OFM plans to target certain facilities to foster success in achieving future Energy Star objectives. Projects will seek to improve the lowest rated buildings to bring up the portfolio average.

Additional & higher priority job requirements have limited the prospects of increased tenant awareness and involvement in energy efficiency measures. Measuring and increasing readership of the *State of Efficiency* newsletter was impossible without a web-based tracking system such as the Notifications module available from Go.gov web management. OFM presented a statement of needs and the benefits of the module for all DCS divisions to agency administration. The module will be available for use in FY12.

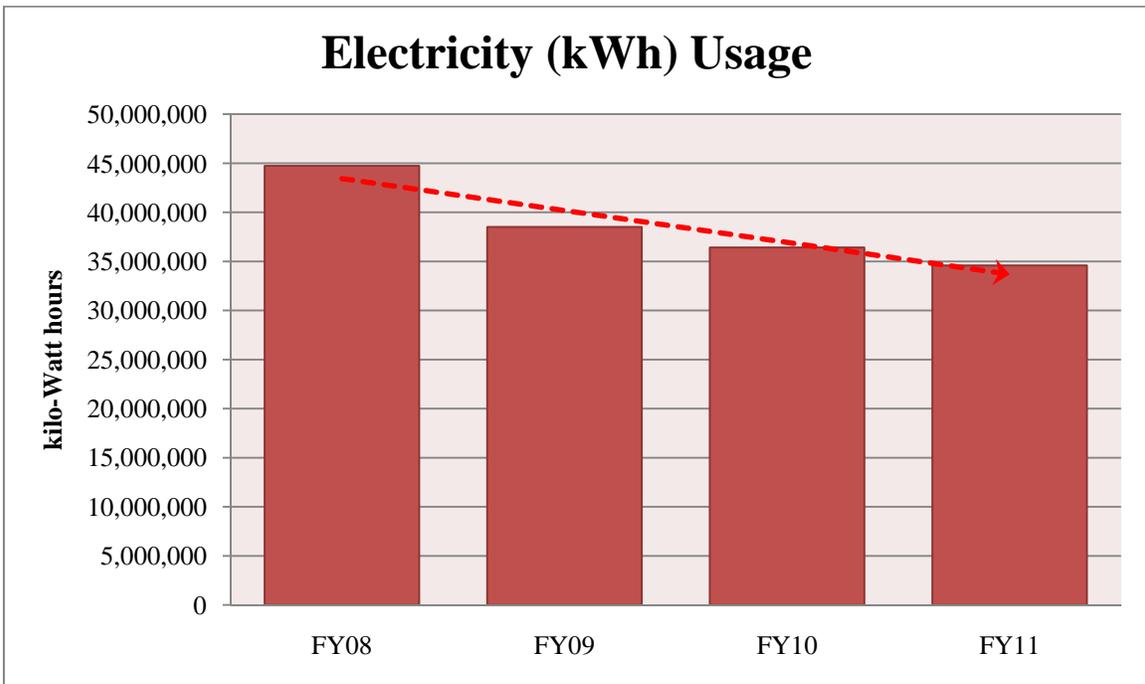
A lack of automatic controls for grounds irrigation systems causes inefficient & inconsistent watering patterns; the 'human factor' is still present. Automatic, "smart" irrigation controllers which can account for weather conditions will be necessary to ensure future outdoor water use efficiency.

Chart 1



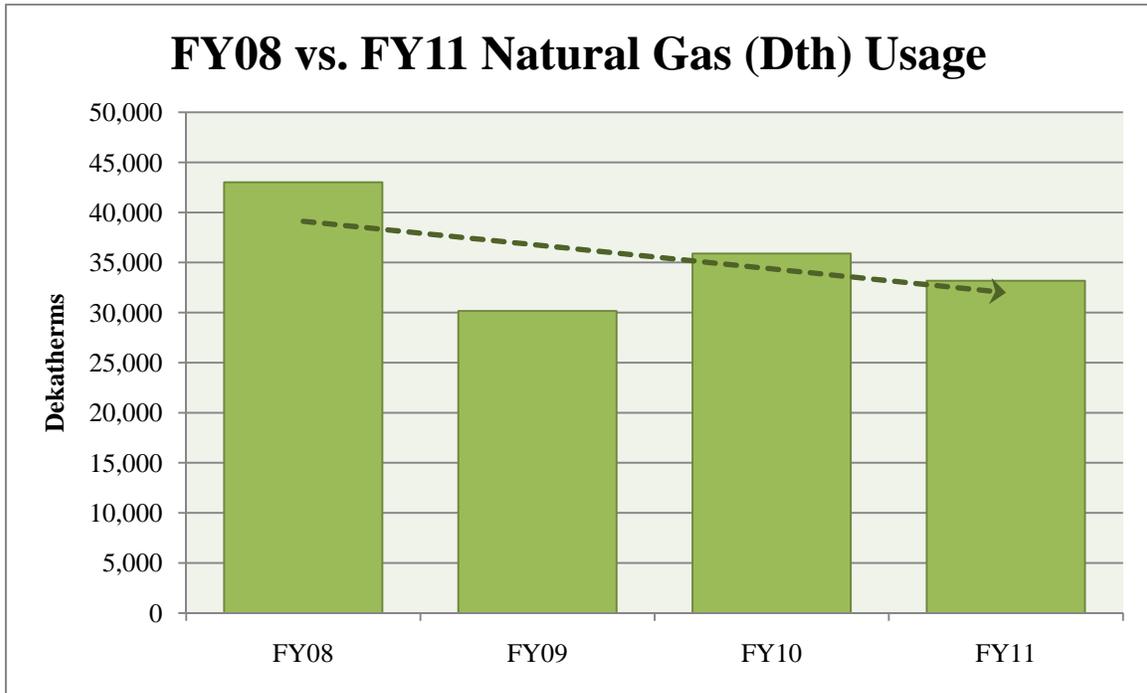
[Back to Goal 4 Progress](#)

Chart 2



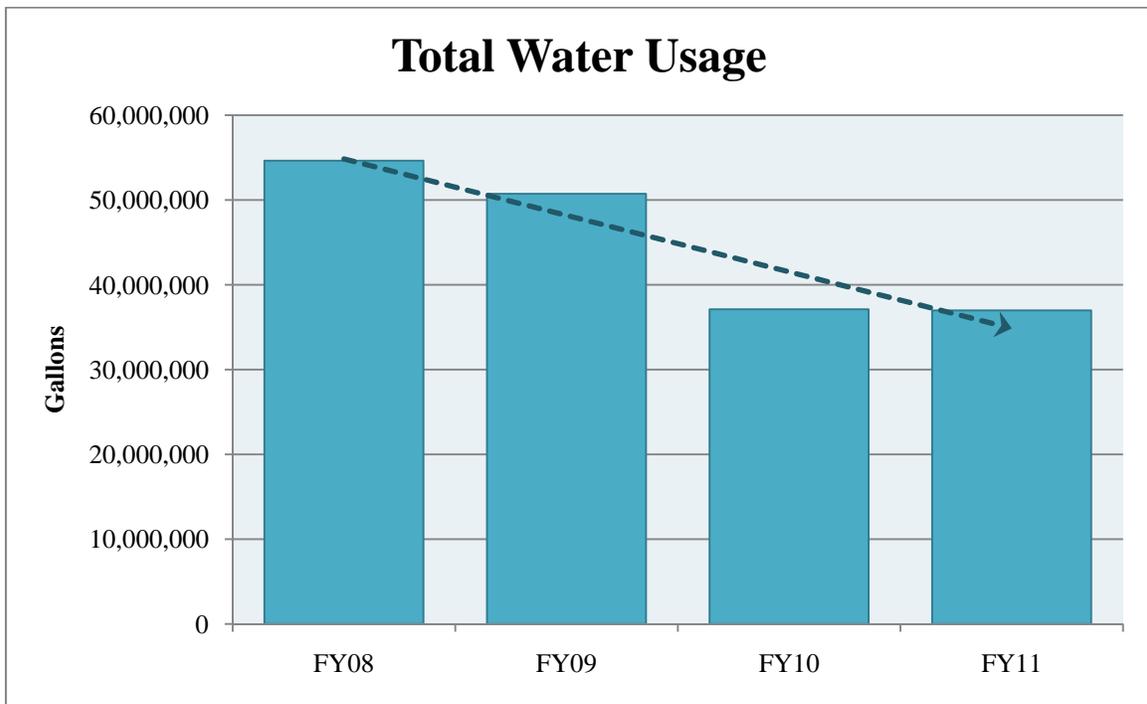
[Back to Goal 4 Progress](#)

Chart 3



[Back to Goal 4 Progress](#)

Chart 4



[Back to Goal 4 Progress](#)

Goal 5: Reduce Toxic Products & Chemicals

Objectives and Tasks

- 5.1 OFM Purchasing will establish procedures & guidelines in the form of a checklist for the procurement of Environmentally Preferred Products/Services.

Tasks: Refine Sustainable Design/Features checklist; review all purchases with checklist.

- 5.2 All OFM janitorial products used will have Green Seal certification or equivalent.

Tasks: Find alternatives for non-Green Seal products.

- 5.3 Eliminate all persistent toxins in OFM-managed landscaping.

Tasks: Inventory all toxins; baseline current persistent toxins; if in use, require landscaping company to eliminate use.

Progress to Date:

- 5.1 Workload demand prevented OFM Programs from establishing checklist.
- 5.2 New janitorial contract went into effect August 2010. According to janitorial supervisor all products used are Green Seal certified.
- 5.3 Contractor is ultimately responsible for eliminating use. Budget reduced contract services.

Challenges

Workload demand prevented progress on the purchasing checklist.

Goal 6: Sustainable Practices in State Leasing

Objectives and Tasks

- 6.1 Establish “best practice” sustainability standards and guidelines for procurement of leased space.

Tasks: Complete research of other state’s standards; coordinate sustainability training schedule for all State Leasing employees; include low/no-cost project opportunities with signed leases; create link to OFM sustainability program web pages.

- 6.2 Establish cost tier to enable consideration of sustainable practices when calculating the total cost per square foot of leased space.

Tasks: Complete research of other state’s standards; coordinate sustainability training schedule for all State Leasing employees.

- 6.3 Earn LEED Green Associate Certification 66% of State Leasing division.

Tasks: Study & take exam.

Progress to Date:

- 6.1 Despite completion of individual tasks, workload demand prevented achievement of this objective.
- 6.2 Not complete; completion of this objective is dependent on establishing best practices.
- 6.3 Research and study materials identified. Exam was not scheduled due to workload demand.

Challenges

Workload demand prevented progress.

Future Objectives

Goal 1: Implement Sustainable Building Practices

Next Year (FY2012)

- 1.1 All projects shall be qualified with the requirements listed in Standard 189.1-2009.
- 1.2 Publish and implement IECC 2006 Standards on “Interior lighting power allowances” [Table 505.5.2] and “Lighting Power Densities” for building exteriors [Table 505.6.2].
- 1.3 Implement energy modeling practices in lieu of like kind equipment replacement
- 1.4 75% of OFM remodel and renovation projects will exceed adopted building standard.
- 1.5 100% of OFM repair and replacements will be best available for the application.

Goal 2: Reduce Transportation Related Pollution

Next Year (FY2012)

- 2.1 Benchmark mansion grounds gasoline usage for FY13 comparison.

Goal 3: Maximize Recycling, Minimize Waste

Next Year (FY2012)

- 3.1 Reduce office paper use by 10% based on FY10 baseline.
- 3.2 Maintain 100% of copy paper purchased for OFM use is 100% recycled content (white, 8 ½ 11).
- 3.3 100% of janitorial paper products will be of 30% recycled content and chlorine free if available in the market.
- 3.4 100% of all fluorescent bulbs and rechargeable batteries will be recycled.
- 3.5 100% compact fluorescent bulbs will be disposed of through an environmental management program.

Goal 4: Reduce Facility Related Energy & Water Use

Next Year (FY2012)

- 4.1 Reduce greenhouse gas emission/energy use by 25%.
- 4.2 Reduce water use by 30% per square foot from FY08 benchmark.
- 4.3 Increase renewable energy kW potential based on FY11 benchmark.

- 4.4 Achieve an Energy Star rating of 75 or higher for ten (10) DCS-managed buildings.
- 4.5 Achieve Energy Star Portfolio average rating of 85 or higher.
- 4.6 Achieve Power Factor of 90 in all buildings.
- 4.7 Achieve Energy Star-certification for ten (10) buildings.
- 4.8 Two employees will become certified energy managers.
- 4.9 Two employees will become LEED Green Associates.

Goal 5: Reduce Use of Toxic Products & Chemicals

Next Year (FY2012)

- 5.1 OFM (Purchasing) will establish procedures and guidelines (checklist) for the procurement of Environmentally Preferred Products/Services (EPP) contracts/products.
- 5.2 100% of OFM janitorial products used will be Green Seal approved or equivalent.
- 5.3 Eliminate persistent toxins in OFM managed landscaping.

Goal 6: Sustainable Practices in State Leasing

Next Year (FY2012)

- 6.1 Draft legislation to require Energy Star rating for private leased buildings.
- 6.2 Establish cost tier to enable consideration of sustainable practices when calculating the total cost per square foot of leased space.