2012

COLORADO GREENING GOVERNMENT ANNUAL REPORT CARD

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Acronyms - How to Read This Report

Acronym	Definition
ARRA	American Recovery and Reinvestment Act
B20	Biodiesel fuel at a blend of 20%
BTU	British thermal unit
CDA	Colorado Department of Agriculture
CDHS	Colorado Department of Human Services
CDLE	Colorado Department of Labor and Employment
CDOT	Colorado Department of Transportation
CDPHE	Colorado Department of Public Health and Environment
CDPS	Colorado Department of Public Safety
CEO	Colorado Energy Office (formerly the Governor's Energy Office)
CNG	Compressed Natural Gas
COARNG	Colorado Army National Guard
C.R.S.	Colorado Revised Statutes
CSDB	Colorado School for the Deaf and Blind
CSU	Colorado State University
CU	University of Colorado at Boulder
CWCB	Colorado Water Conservation Board
DCS	Division of Central Services (DPA)
DHE	Department of Higher Education
DMVA	Department of Military and Veterans Affairs
DNR	Department of Natural Resources
DOE	Department of Education
DOC	Department of Corrections
DOL	Department of Law
DOLA	Department of Local Affairs
DOR	Department of Revenue
DORA	Department of Regulatory Agencies
DOW	Division of Wildlife
DPA	Department of Personnel and Administration
DWR	Division of Water Resources
E85	Fuel blend containing 85% ethanol
EB: O&M	LEED® Existing Building Operation and Maintenance
EPA	Environmental Protection Agency (United States)
EPC	Energy performance contract
EPP	Environmentally preferable purchasing
ESCO	Energy services company
EVSE	Electric vehicle supply equipment
FFV	Flex-fuel vehicle
FIMS	Facility Improvement Measures
FLC	Fort Lewis College
FRCC	Front Range Community College
FY	Fiscal year
GFX	Government Fleet Expo and Conference
GGC	Greening Government (Coordinating) Council
GHG	Greenhouse gas
GPS	Global positioning system

Acronym	Definition
GSHP	Ground source heat pump
HB	House Bill
HCPF	(Department of) Health Care Policy and Financing
HEV	Hybrid electric vehicle
HPB	High performance building
HPCP	High Performance Certification Policy
HVAC	Heating, ventilation, and air conditioning
IDS	Integrated Document Solutions (DPA/DCS)
kGal	Kilogallon (1,000 gallons)
kW	Kilowatt
kWh	Kilowatt hours
LEED®	Leadership in Energy and Environmental Design®
MLBS	1000 pounds of steam; having energy value of 1,000,000 BTUs
MMBtu	Million metric BTUs
MPG	Miles per gallon
$MtCO_2e$	Metric ton of carbon dioxide equivalent
MVAC	Motor Vehicle Advisory Council
MW	Megawatt
NAFA	National Association of Fleet Administrators
OCC	Office of Consumer Counsel (DORA)
OSC	Office of State Controller
OIT	Governor's Office of Information Technology
P-Card	Procurement card
PC	Personal computer
PCC	Pueblo Community College
PCW	Post-consumer waste
PHEV	Plug-in Hybrid Electric Vehicle
PPA	Power Purchase Agreement (from US EPA)
PUC	Public Utilities Commission
PV	Photovoltaic
RAP	Reclaimed Asphalt Pavement
RE	Renewable energy
RMFMA	Rocky Mountain Fleet Management Association
RTD	(Denver) Regional Transportation District
RV	Recreational vehicle
SB	Senate Bill
SCP	Sustainable Campus Program (through DHE)
SFM	State Fleet Management (DCS/DPA)
SOS	Secretary of State
SPO	State Purchasing Office (DPA)
SWSI	Statewide Water Supply Initiative
TCR	The Climate Registry
TEA	Technical energy audit
TERC	Transportation Environmental Resource Council
Therm	Unit of heat energy equal to 1000 BTUs
U.S. DOE	United States Department of Energy
USDOT	United States Department of Transportation
VMT	Vehicle miles traveled

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"The Greening Government Program reduces energy and water consumption in Colorado state government by administering effective energy efficiency programs that both save money and protect the environment. This report outlines the goals and accomplishments achieved by our state agencies who consistently lead by example."

- Governor John Hickenlooper

Executive Summary

Overview

The Greening Government Council (GGC) was established by Executive Order D 005 05 to enhance the efficiency and greening of Colorado state government. In April 2007, Executive Order D 0011 07 was issued, directing the GGC to prepare an Annual Report Card to review its achievements and inform recommendations for additional action by the Governor. This Order also requires all state agencies to reduce their environmental impact and appoint a representative to serve on the GGC, which is coordinated by the Greening Government Program Manager within the Colorado Energy Office (CEO).

This Report Card not only reviews the state's 2012 fiscal year (FY12, July 1, 2011-June 30, 2012) progress, but also provides a full review of how the State and each agency did on reaching the sizeable reduction goals outlined on the right. *Appendix G* contains the various Executive Orders that guide the State of Colorado's greening government policies.

The GGC hopes that this report will help frame goals moving forward, reenergize our sustainability efforts and help elevate Colorado as a national model of sustainable government.

While there is still room for improvement, the State has made notable progress in reducing its energy, water, paper, and petroleum use. The sum of the State's efforts can be found in the main section of the report.

Individual state agencies and departments are making great strides in their commitment to create a more sustainable, energy and water efficient, and cost efficient workplace. The following chart summarizes greening government initiative implementation activities undertaken by each state agency during FY12. More information on individual agencies can be found in *Appendix A.*

Greening State Government Reduction Goals by July 1, 2012*

Energy Management at State Facilities:

- **20% energy consumption reduction** (10% if energy performance contracting is not feasible)
- Assess and implement **renewable energy** projects where effective

Materials and Resource Reduction:

- **20% reduction in paper use**
- **10% reduction in water consumption**
- Employ **purchasing policies** to reduce the state's environmental impact
- **75% landfill diversion** (by FY 2020)

*Vehicle Petroleum Reduction***:

- **25% volumetric reduction** within state fleet

Greenhouse Gas Emissions:

- **20% reduction** from FY 2005 levels by FY 2020
- **80% reduction** from FY 2005 levels by FY 2050

*Reduction goals are based on FY 2006 levels, to be met by the end of FY 2012.

**Excludes vehicles used for law enforcement, emergency response, road maintenance, and highway construction.

Agency	Waste							Transportation							Energy Savings						Water							Renewable Energy							Environmentally Preferred Purchasing							
2012	Recycling	Employee Education	Printing Reduction	Electronics Recycling	Electronics Reduction	Paperless Initiative	Composting	Video conferencing	Eco Pass	Carpool	Flex Fuel	Hybrid	Mile Reduction	Driver Education	Employee Education	Equipment Efficiency Upgrades	Tracking Energy Use	Technical Energy Audit	Energy Performance Contracting	Energy Reduction Plan	Employee Education	Plumbing	Irrigation Optimization	Water Use Tracking	Xeriscaping	Water Use Reduction Plan	Reuse Water	Photovoltaic	Solar Thermal	Ground Source Heat Pump	Anaerobic Digestion	Biomass	Employee Education	Wind Power	EPP Policy in Place	Paper Policy	Employee Education	Other Office Supply Policy	Electronics Policy	Construction Material Policy	Vehicle Policy	EPP Policy Tracking & Review
The following agencies own at least some of their office space																																										
CDA	x	x	x	x		x		x	x	x	x	x				x	x	x	x			x	x	x										x	x	x					
CDHS	x	x		x				x		x	x	x	x	x		x	x	x	x			x	x	x				x	x	x											
CDLE	x	x	x	x	x			x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x				x		x	x	x	x	x	x	x	x
CDOT	x	x	x	x		x		x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x								x	x		x		x	x	
CDPHE	x	x	x	x	x		x			x	x	x	x	x	x	x	x	x		x	x	x		x	x											x	x				x	
DMVA	x	x	x					x		x					x	x	x	x		x	x	x	x	x	x	x		x	x	x			x		x	x	x					
DNR	x	x	x	x		x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x							x	x	x	x		x		
DOC	x	x	x	x		x	x	x		x	x	x	x		x	x	x	x	x	x		x	x	x	x	x		x							x	x						
DOR	x	x	x					x	x			x			x	x	x				x			x									x		x		x					
DPA	x	x		x					x					x	x	x	x	x	x	x	x	x	x	x		x		x		x			x		x	x	x		x	x		x
The following agencies only lease their office space																																										
CEO	x	x	x					x	x			x			x	x	x				x	x												x	x	x					
HCPF	x	x	x	x	x			x	x	x	x		x	x	x	x	x	x	x	x	x	x		x									x		x		x					
DHE	x	x	x	x	x		x	x	x					x	x						x												x		x	x	x		x			
DOL	x	x		x		x		x	x	x	x	x		x	x	x	x				x														x	x						
DOLA	x					x		x	x		x	x	x	x	x																					x					x	
DORA	x	x	x	x		x	x	x	x				x		x	x				x															x							
OIT	x		x		x				x		x	x				x	x																									
SOS	x		x	x		x			x																																	

Goal Specific Results

Between FY06 and FY12 the State experienced notable growth in square footage and employees affecting the amount of resources used (see box below). Even with this increase, the State was able to meet its energy reduction goal, substantially reduce its greenhouse gas emissions and petroleum use, and increase recycling. Water use did increased. See individual sections for more information and *Appendix A* for agency specific information.

Review of State Government Growth between FY06-FY12:

Total Owned Sq. Ft. in FY'12: 21,982,649	**% Increase/(Decrease) in Owned Sq. Ft Since FY'06:** 15.6%
Number of Employees in FY'12: 25,602	**% Increase/(Decrease) in Employees Since FY'06:** 7.3%

Energy

Goal: By FY2012, achieve at least a 20% reduction in energy consumption of state facilities below FY06 levels. Where performance contracting is not feasible, state agencies shall strive to reduce energy use by 10% from a FY06 baseline.

Energy used by state agencies has a significant impact on the quality of Colorado's public health, environment, and the use of its natural resources. This section highlights the progress of state agencies in developing and implementing energy management plans as they work toward achieving an either 10% or 20% energy use reduction goal leading to an overall reduction goal of 19.4%.[1] It should be noted that this is one of the most aggressive goals set for energy reduction in the nation.

Tracking energy consumption is essential in making effective reductions. Executive Order D 2010-006 mandates that all state agencies enter energy and water data into EnergyCAP. [2]EnergyCAP is the standard statewide utility management software that allows state agencies and organizations to manage utility usage, report on benchmarks, eliminate billing errors, target wasteful facilities, and track GHG emissions.

The figure below outlines the State's energy use by total use (left axis) and per square foot (right axis). The reduction goals outlined below show that the State has reduced their energy use by 9% or 242,070 MMBTU. The State has missed the goal of an overall reduction of 19.4% energy use. Of the 14 agencies and departments with owned square footage: three met their target, three decreased energy overall and eight increased their energy use.

However, since FY06 the State owned square footage has increased by 15.6%. **Taking this increase into account the State's energy use per square foot has reduced by 21.3%.** Of the 14 agencies and departments with owned square footage six reduced their energy per square foot over their corresponding goal, 4 decreased their energy per square foot overall, and four increased their energy use per square foot.

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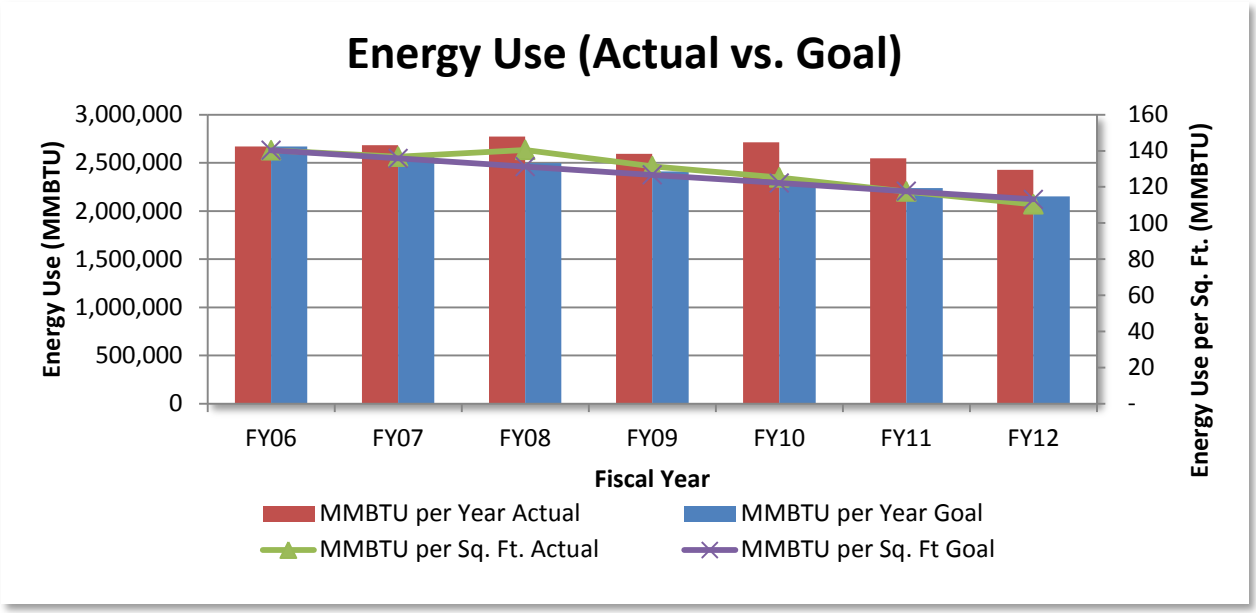
[1] An Energy Performance Contract (EPC) is not feasible at the following agencies with owned facilities for various reasons including size and location: CDPHE, OIT, CDE, DPS, DOR, DNR and DOL. They are required to reduce their energy by 10%. All other agencies in owned space must reduce their energy use by 20%. Average taken between agencies that are required to achieve a 10% energy reduction and agencies required to achieve a 20% reduction.

[2] Since FY'11, the tracking of energy and water use greatly improved with a 95% implementation rate (up from 70%) but is not consistent throughout state agencies. The following data was provided by each agency individually (See *Appendix A* for more information by agency) and reflects their best attempt to record all energy purchases between FY'06-FY'12. While the data has gone through a Quality Assurance-Quality Control process, discrepancies and errors though limited are inevitable.



Renewable Energy

Goal: On an ongoing basis, assess and implement where effective, the development of state renewable energy projects.

Realizing the economic potential, Colorado has issued mandates to develop, where possible, renewable energy resources at state facilities.

Since many state agencies work from leased office space, opportunities for renewable energy installations are limited. However, some agencies with more flexibility have been able to go forward with this initiative. Particularly, new construction allows for the inclusion of renewable energy installations, as well as energy efficiency measures. For example, the DMVA has been adding ground source heat pumps, solar thermal, and PV to newly constructed facilities throughout Colorado. In total, five agencies (DMVA, DHS, DOC, DPA, and DNR) have installed renewable energy on their facilities. See *Appendix A* to learn more about individual agency initiatives.

In FY12, CEO was able to work with the PUC and Xcel to come to an agreement on the interconnection rules that were holding up the implementation of solar across all agencies. Moving forward, all agencies will be able to interconnect without issue.

➲ Project Highlight: The Department of Corrections (DOC)

The DOC has installed solar arrays at nine prisons around the state. These solar panels have generated over 696,440 kWh, enough power to meet the needs of 80 homes every year. Taking advantage of numerous rebates and other financing options, the panels went live with no cash outlay by the state. They are expected to save the state $475,000 over the next twenty years.

Figure 1. Solar panels recently installed at Colorado Territorial prison in Canon City

DPA completed several projects including one ground source heat pump and 3 separate photovoltaic (PV) projects. A 100kW PV system, which produces about 134,500 kWh annually, was funded through energy savings and generates approximately one-third of DPA's electricity needs saving around $35,000 per year. In addition, the DPA installed a 10 KW system in 2009 on the State Capitol.

Energy Performance Contracting (EPC)

EPC is a way to finance energy performance measures based on future avoided utility costs (projected energy savings) and is an effective way to reduce energy consumption immediately and save money over time. This financial mechanism typically results in energy savings between 15% and 30%. At the end of FY12, seven projects were in the technical energy audit (TEA) process representing more than 3.5 million square feet; nine projects remained in the construction phase accounting for about $50 million in construction; and 33 projects had finished the construction phase of EPC and started the Measurement and Verification (M&V) phase on various projects. Of the projects that are in the M&V or post M&V stage the state has experienced utility cost savings of over $8 million, annual savings of over 40 million kWh, and annual savings of over 150 million gallons of water. These projects represent significant savings for the state, create jobs, and increase building comfort long-term.

Additional details of FY12 EPC activities are provided in *Appendix A* and *Appendix C.*

High Performance Certified Buildings (HPCB)

The Leadership in Energy and Environmental Design (LEED) is a voluntary international program that provides criteria for establishing a green rating of buildings, both new and existing. The LEED criteria identify those design and construction measures that will have the most impact on:

- ✓ conserving energy and water;
- ✓ providing a safer and healthier space for occupants;
- ✓ reducing waste sent to landfills; and
- ✓ lowering operating costs.

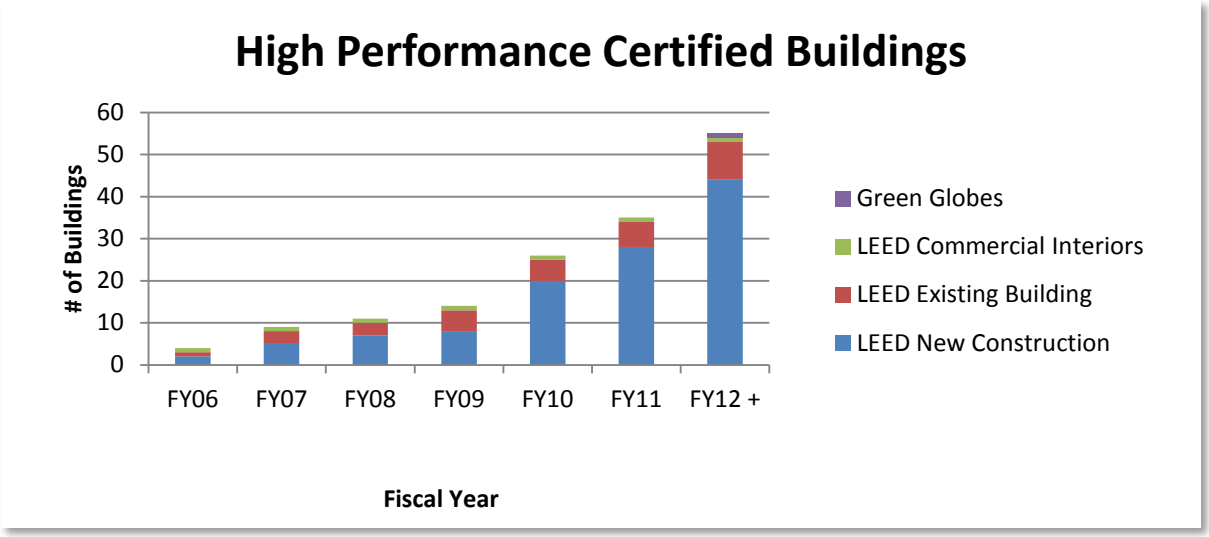
By satisfying the criteria building owners and operators earn points which accumulate to determine the building's LEED score and rating, the highest being LEED Platinum. In addition, the LEED program exists to promote the latest innovations in building design, from lighting controls to the use of recycled materials.

In 2011, Colorado ranked first for LEED certified square footage of space per capita with 420 certified buildings. Colorado's state government has played an important role in this with 54 certified buildings as

of FY2012 (13% of states total), 19 waiting for certification, and 22 in construction. In addition, the state has one Green Globes certified building.[3]

Colorado Senate Bill 07-051 mandated the adoption of a "Building Renovation, Design, and Construction Standard" to reduce the operating costs of state-assisted facilities by reducing the consumption of energy, water, and other resources. The State decided upon the LEED standard which became a requirement, when cost effective and applicable, by Executive Order D 005 05.

As of FY06 eight state buildings were LEED certified. Since then, the state has seen a steady increase in certified buildings. *Appendix A* contains more about each agency Higher Performance Certification initiatives; *Appendix B* has a full list of all certified buildings, buildings submitted for LEED certification, and in-design.



In FY09, the State Capitol – built in 1895 - became the first LEED-EB certified Capitol in the U.S. The Capitol building received 41 out of 44 points submitted to attain certification. Among the specific upgrades to the building were the installation of lighting improvements, heating and cooling system upgrades and improved energy controls.

[3] Note that the HPCB building requires all Higher Ed and State agencies to participate. Therefore, the Greening Government Council tracks Higher Ed LEED buildings as well even though Higher Ed is exempt from many of the Greening Government Executive Order requirements.

➲ Project Highlight: The History Colorado Center

Figure 2. History Center

The History Colorado Center, which is part of the Colorado Historical Society, is set to become the country's first LEED Gold state cultural history museum. It utilizes water and energy conservation by incorporating native landscaping, low-flow water systems, and taking full advantage of the natural light and heat provided by the spacious atrium. The building also makes extensive use of recycled and regional materials, including Colorado sandstone, Douglas fir, and beetle-kill pine.

Information Technology Efficiencies

At the end of FY12, the state's Office of Information Technology (OIT) installed the Big Fix Power Management Software on approximately 9,500 state-owned computers (1,500 computers still awaiting implementation). This software is a comprehensive power control tool designed to reduce energy use by turning off inactive computers, even for short periods of time. It is estimated that this software will save the state approximately $25 each year for each of the 11,000 computers using it, with total savings in the hundreds of thousands of dollars and energy savings exceeding 2 million kWhs.

In FY12, OIT also started to consolidate their data centers which will save the state thousands of dollars while reducing a significant amount of energy consumption. OIT has made steady progress in its plan to migrate to primary two data centers. In 2011 alone, OIT migrated and terminated five data centers and decommissioned 236 servers (out of 1,800) through consolidation, virtualization, and migration to cloud-based solutions. More than 4,600 square feet of space has been recovered to date and will be repurposed. These efforts have already saved Colorado over $800,000 in annual operating costs

Future Plans and/or Suggestions

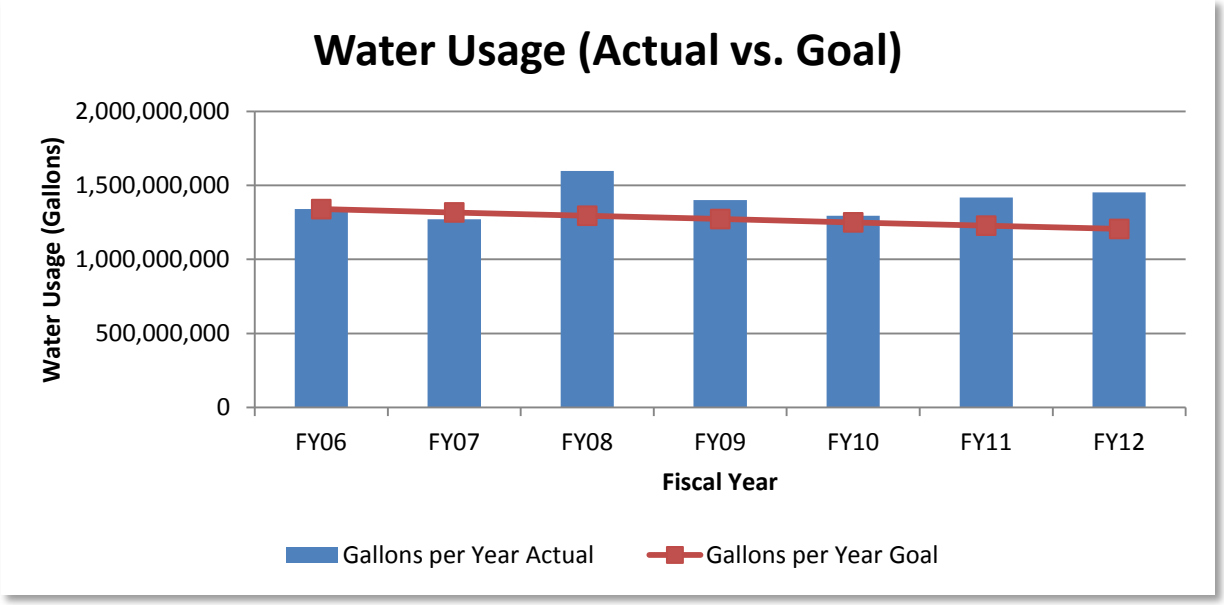
- Have agencies create an energy management plan that is updated every other year.
- Encourage EnergySTAR certification, when possible.
- The Council will continue to support renewable energy, where effective.
- Ensure all agencies with owned facilities are entering their utility data into EnergyCAP in a timely manner.
- Work with state agencies to implement Electronic Data Interchange (EDI) between Xcel, EnergyCAP, and COFERS to reduce costs, increase the speed of data entry, and reduce human error.
- Continue to encourage the use of financing mechanisms, such as issuing bonds and using energy performance contracting, to undertake energy and water reduction projects.
- Research alternative ways to provide funding for renewable energy projects including PPAs, and grants.
- Continue working with utility companies to address policies that have kept renewable energy initiatives from moving forward.
- Support agencies considering the opportunities of the Solar*Rewards Community Program and Solar Gardens programs.

Water

Goal: Achieve a reduction of water consumption goal of 10% by FY12, using FY06 as a baseline.

Colorado faces ongoing and future water supply challenges. Pursuant to Executive Order D 0012 07, state agencies are mandated to reduce water consumption by 10% by FY12. Many agencies have already achieved substantial reductions in their water usage since FY'06 by installing more efficient plumbing fixtures and fittings, and installing lawn irrigation controls. In addition, several agencies have been taking advantage of re-use water.

The State has seen an increase of 8.4% (112.5 million gallons of water) in water use. [4] Of the 14 agencies and departments with owned square footage, six reduced their water use by more than 10%, four reduced their water use by less than 10%, and four increased their water use.



Future Plans and/or Suggestions

- Continue requiring water reductions by all state agencies.
- Require agencies to take advantage of free or reduced cost water audits by their water utility, if applicable.
- Look into bulk purchasing of water efficient appliances for state agencies.
- Continue educating Council about the Energy/Water Nexus
- Research and identify alternative ways to provide sufficient funding for water efficiency.
- Continue encouraging agencies to use their water rights.

[4] The following data was provided by each agency individually and reflects their best attempt to record all water purchases between FY'06-FY'12 in EnergyCAP. Water usage has not been normalized for the increase in state employees, increasingly hot weather, or new water-intensive industries.

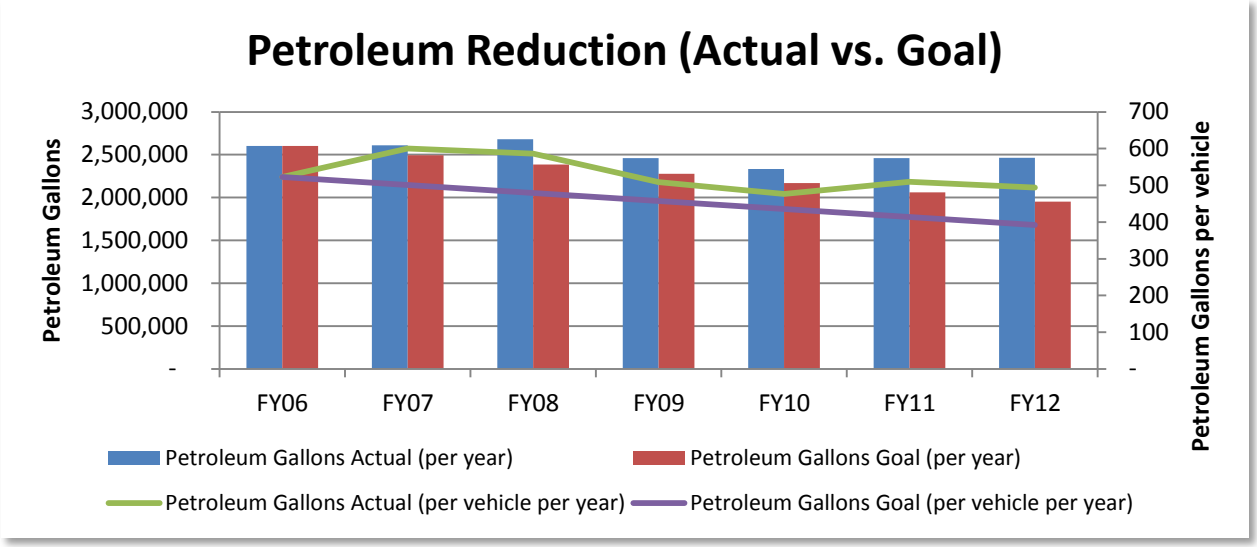
Petroleum Reduction

Goal: By FY12, all state departments and agencies will take all reasonable actions to achieve a 25% volumetric reduction in petroleum consumption by state vehicles measured against a FY06 baseline.

The Executive Order outlines all departments and agencies with non-exempt vehicles[5] will take all reasonable actions to achieve a 25% volumetric reduction in petroleum consumption by state vehicles. It should also be noted that all non-exempt vehicles managed by the state fleet are required to participate in this reduction including many Higher Ed institutions vehicles that are exempt from all other Executive Order mandates. See *Appendix A* for additional information for each agency. [6]

State Fleet Management (SFM) provides oversight (i.e. repairs, purchasing, salvage, general operations, etc) for all state fleet program vehicles. The Motor Vehicle Advisory Council (MVAC), an advisory body that includes a representative from each user agency and institution, assists SFM in its efforts to manage an effective and efficient fleet. SFM manages and monitors the state fuel efficiency programs in support of the Governor's greening government initiative, and purchases as many alternative-fuel vehicles as possible each fiscal year.

Between FY'06-FY'12, the State decreased their petroleum use by 5.28% or 137,265 petroleum gallons annually. During this time the fleet of non-exempt vehicles has seen growth of less than 1% so the reduction of petroleum per vehicle is about 5.6%.



Since FY06 the vehicle miles traveled (VMT) has decreased. This decrease is due to many factors, including the general downturn in economic conditions as well as the statewide implementation of vehicle mile reduction guidelines. These guidelines recommend that agencies use daily trip logs to improve route efficiency and record miles reduced; optimize use of videoconferencing equipment; and offer employee

[5] Exempt vehicles include vehicles used by law enforcement, emergency response, road maintenance, and highway construction.
[6] The totals in Appendix A will not add up to the summary totals on this page. This is because Higher Education Institutions (not Department of Higher Education) and the judicial branch which have non-exempt vehicles are not required to participate in the Greening Government Council or follow other mandates such as energy and greenhouse savings. Therefore, they do not have their own subsection in Appendix A.

education and outreach on reducing vehicle use. As shown in the table below, VMT decreased by 1.9 million miles between FY06 and FY12.

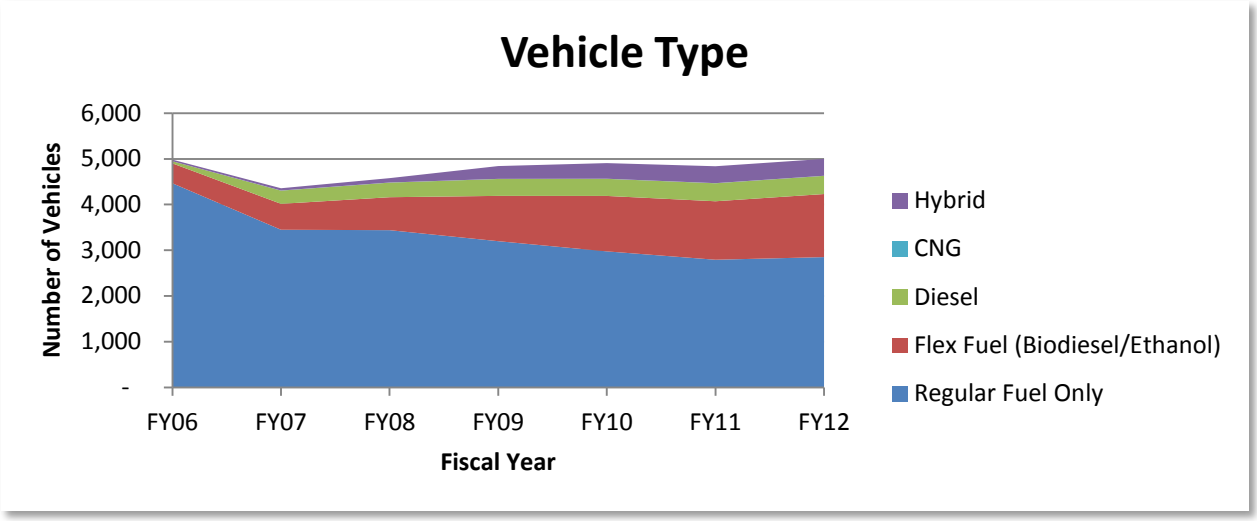
	FY06	FY07	FY08	FY09	FY10	FY11	FY12
Vehicle Miles Traveled	45,045,278	46,761,916	46,721,573	43,268,738	40,931,404	43,200,482	43,138,996
Miles Increased (Decreased)	N/A	1,716,638	1,676,295	(1,776,540)	(4,113,874)	(1,844,796)	(1,906,282)

Realizing the direct correlation between reduced petroleum consumption and mileage, SFM developed and implemented a fuel rebate program in FY 2010. Under this program, agencies that achieved a reduction in petroleum consumption received a rebate equivalent to the number of gallons saved times a monetary value per gallon, thus providing a direct incentive to decrease petroleum use.

While falling short of the 25% petroleum reduction goal the State has made progress in creating a more diverse fleet with flex fuel vehicles and hybrids. In FY06, 90% (4,460 vehicles) of the State Fleet consisted of regular fuel-only-vehicles, while in FY12 this percentage dropped to 57% (2,845 vehicles). This decrease has been offset by a:

- 217% increase (435 to 1,379 vehicles) in flex fuel vehicles (ethanol in a blend of 85% (E85), or biodiesel at a blend of 20% (B20) or higher).
- 747% increase (47 to 398 vehicles) in diesel vehicles
- 985% increase (34 to 369 vehicles) in hybrid vehicles
- Two CNG vehicles were added to the fleet

Using renewable fuels directly displaces the use of petroleum fuel and significantly reduces GHG emissions, further supporting the reductions of GHG and climate change initiatives. The increase in hybrids has led to a significant increase in our MPG, making the fleet more efficient.



The State Fleet once again had an award winning year being recognized as one of the top Government Green Fleets in North America by "100 Best Fleets" (there are over 38,000 public fleets in North America). The State Fleet Manager of Energy and Environmental Sustainability was honored with the National Fleet Award of Environmental Leadership, and received the Sustainability All-Star Award during October 2012.

Future Plans or Suggestions:

- Require that all new vehicles purchased by the State fleet will be either alternatively fueled or exceed the appropriate CAFE standard. Purchase decisions should also be based on a lifecycle cost analysis as this reflects the overall impact to the state's fiscal bottom-line. Vehicle lifecycle costs will be based on the average expected lifetime and operational characteristics of a similar vehicle in the state fleet, and the first priority for vehicle selection will be given to compressed natural gas when the required CNG model is available, and when the lifecycle cost is no greater than 10% when compared to the conventional vehicle that it will replace.
- Due to the reduction in the cost and availability of alternatively fueled vehicles, SFM recommends that the state continue to pursue procurement when lifecycle cost is within 10% when compared to comparable petroleum-only fueled vehicles.
- Restrict the purchase of four-wheel drive vehicles to functions that are explicitly deemed necessary by agency Executive Directors.
- Establish a fleet sub-council to include representatives from each state agency and department. The fleet sub-council will help develop, implement, and augment programs, plans, and policies that save money, reduce emissions, promote domestic fuel use, and conserve natural resources. Alternatively the Motor Vehicle Advisory Council could potentially take on this task.
- Encourage fleet coordinators to develop programs for their fleet to ensure that alternative fuel vehicles are being fueled with alternative fuels and energy efficiency improvements are occurring. This could also be included as part of performance reviews if deemed necessary by agency executive directors.
- Enforce any existing idling policies to reduce emissions and fuel use.
- Investigate alternative financing options for state vehicles, including leasing, energy performance contracting, and other options that may reduce costs for the state over the lifecycle of the vehicles.
- DPA and the State Purchasing Office will include a variety of biofuel, CNG fueled, hybrid electric, and electric vehicles in annual state pricing agreements once they are deemed affordable and viable. Not only does this provide flexibility to state agencies purchasing vehicles, it serves other organizations that may buy these vehicles off of the state bid.
- Each agency shall evaluate opportunities to improve commuting options for employees.
- Telematics/GPS should be investigated by DPA and CDOT as a tool to monitor and manage many fleet efficiency functions. Any telematics program should be evaluated in the context of methods of implementing any lessons that emerge from telematics data and the cost of the systems.

Greenhouse Gas Emissions

Goal: State agencies shall achieve reductions in greenhouse gas (GHG) emissions of 20% below 2005 levels by 2020. By 2050, state agencies must reduce GHG emissions by 80% below 2005

The 2010 Executive Order included the following goals for reducing greenhouse gas (GHG) emissions from state agency operations: 20% reduction by FY20 and 80% reduction by FY50 from the initial FY'06 levels.[7]

To support these goals, the Greening Government Council initiated an effort for Colorado to become the first state to report emissions using The Climate Registry (TCR), a non-profit collaboration among North

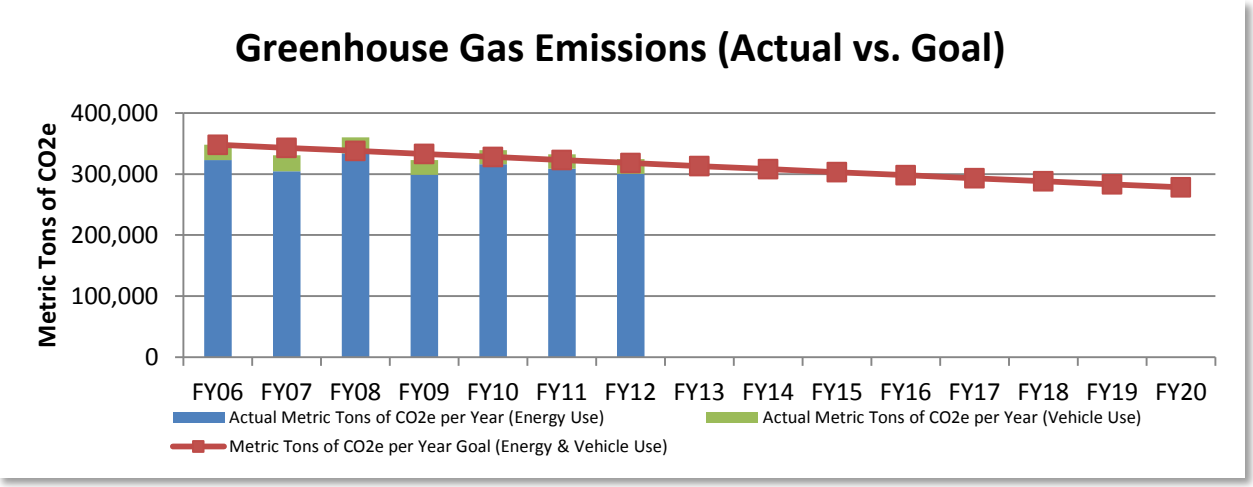
[7] These goals are based off of Executive Order D 004 08 which baseline is 2005 (calendar year). However the State has tracked data from FY'06 (July 2005-June 2006) not calendar year 2005 and therefore does not have data from January-June 2005. As such the state has adapted these goals to make our baseline FY'06 and our deadlines FY'20 and FY'50.

American states, provinces and territories. TCR uses consistent and transparent standards to calculate, verify, and publicly report GHG emissions into a single registry.

The State is tracking its Scope 1 and Scope 2 emissions. Scope 1 emissions are from state owned vehicles and fuel combustion on site, while Scope 2 is from purchased electricity. The State is not tracking Scope 3 emissions. TCR data entry for 2009, 2010 and 2011 emissions was completed.[8] The data includes fuel consumption amounts by fleets and building operations for all state agencies.

Below is a figure showing the states actual GHG emissions broken out by emissions from energy and vehicle use. Additionally, the green line illustrates our goal of reduction if the state is to meet the first goal of a 20% reduction by 2020.

To reach the FY20 reduction goal of 20% since FY05, the State must average a decrease in emission by 1.3% annually (8.6% in 7 years). Over the last seven years, the State has experienced a decrease in emission by 6.7% or 23,269 metric tons of CO2e (carbon dioxide equivalent) falling short of the intermediate goal. The State's fleet has experienced a decrease of GHG emission by 3.8% (1,003 metric tons of CO2e), while our reduction in energy use has led to a decrease in 6.9% (22,307 metric tons of CO2e).



Future Plans and/or Suggestions

- Utilize EnergyCAP to track all GHG emissions instead of using two systems: TCR and EnergyCAP
- Increase focus on petroleum consumption reduction, fuel switching, and decreasing vehicle miles traveled. For energy reduction focus on decreasing consumption and alternative energies.

Procurement and Waste Reduction

Goal: All agencies are directed to develop and implement materials management, purchasing, and resource management policies that minimize the impact on public health, the environment and natural resources and reduce state government expenditures.

[8] The Climate Registry only reports on the calendar year. We were able to provide data on the calendar year for 2009, 2010, and 2011.

Greening of State Government is more than just reducing energy and water; it also involves environmental preferable purchasing policies, decreasing paper consumption, increasing recycling and reuse of materials, and the disposal of materials in an environmentally-responsible manner.

Environmentally Preferable Purchasing

DPA's State Purchasing Office (SPO) with the support of CEO, GGC, and CDPHE is responsible for developing and maintaining the Environmentally Preferable Purchasing Policy (EPP). The original version of the EPP policy was drafted in 2008 to comply with requirements set forth in Executive Orders. It also was tailored to incorporate elements of the Colorado Climate Action Plan and the Government Efficiency Management (GEM) Study.

Major strategies for "greening" state agency purchases include: source reduction (reducing waste); reduction of toxic elements, energy, emissions, and pollution; recycled content products; and energy and water saving products (e.g., the EPA ENERGY STAR® certification or similar). The policy also takes into consideration "life cycle costs" of the product (such as raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, disposal, energy efficiency, product performance, durability, safety, needs of the purchaser, and cost). By utilizing the "green" guidance and resources provided in the EPP Policy, agency decision makers and purchasers of goods and services are able to support their mission in a more environmentally responsible fashion.

Because of continued efforts by the GGC, and with the support of subsequent Executive Orders, the State of Colorado has been recognized as a leader in making progress towards more sustainable practices while providing critical services to its citizens.

Recycling and Waste

Goal: Agencies will achieve a waste diversion from landfills of 75% by 2020.

The State has not yet found an effective way to track current waste diversion in State Agencies, however many agencies have made great strides to reduce their consumption while increasing their recycling and composting activities.

Recycling in state offices is commonplace and very effective at reducing waste sent to landfills. Composting has also become more common in government agencies. In FY'12, state agencies reported a total of 215,513 tons of materials had been recycled and/or composted.[9] This number is not comprehensive as many agencies do not have the ability to track their recycling and composting tonnages. A summary of state agencies' recycling activities and individual totals is presented in Appendix D.

Agencies in leased spaces are often involved in recycling programs, but information regarding the quantities of recycled materials attributable to these efforts is typically unavailable because the collection processes do not provide a mechanism to distinguish generation volumes by individual building tenants.

The 44 LEED-New Construction certified buildings in Colorado had to follow LEED Certified construction debris requirements which greatly reduce the amount of waste created during construction.

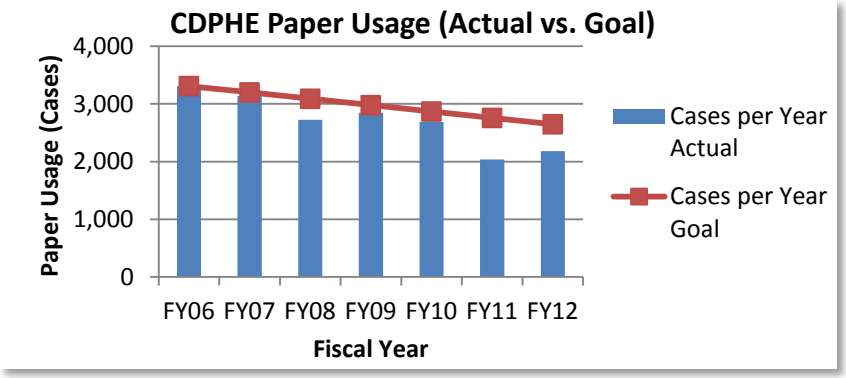
[9] Note that the majority (213,028 tons) of the tonnage comes from CDOT's Recycled Asphalt Pavement Program. See *Appendix A* for more information.

Paper

Goal: Agencies will achieve a paper use reduction goal of 20% by FY12 using FY06 baseline. Of the paper purchased 50% will contain at least 30% Post-Consumer Waste.

Tracking paper However, in FY12 the first statewide baseline was created that tracked total paper use and the recycled content of the paper purchased. In FY'12, the State purchased 2,034,600 lbs of paper, of which 44.7% contained at least 30% recycled content falling below the 50% requirement. Seven agencies and departments met the goal, while 12 purchased below the required amount [1].

The majority of State agencies have reduced their printing between FY06-FY12 through various means including employee education, double sided printing settings, and reduction in number of printers used. Many agencies have begun paperless initiatives by moving forms and work online, as seen in the States payroll system that has moved completely online eliminating the thousands of pay slips sent out monthly. Many agencies have used their cost savings from decreased paper use to cover the slightly higher costs of recycled paper. CDPHE tracked their paper use between FY06 and FY12 and through aggressive paper reduction strategies such as eliminating printers and requiring duplex printers CDPHE experienced a 34% (1,127 cases) decrease in paper use. In return, they were able to use their savings to switch to the slightly more expensive recycled paper.



Future Plans and/or Suggestions

- Update the EPP Policy.
- Research ways to train current and future procurement and purchasing officers on the EPP.
- Eliminate the ability to purchase non-recycled paper.
- Update states existing OIT and Correctional surplus electronics end of life policies which have not been updated over 10 years.
- Consider soliciting multi-regional awards that incorporate shared agency disposal services, recycling, hazardous materials and E-waste. This could prove beneficial in increasing recycling and composting while creating efficiencies, reducing costs, and promoting regional job creation opportunities.
- Look into strengthening our relationships and network with Multiple Assembly of Purchasing Officials, Colorado Educational Purchasing Association, Rocky Mountain Governmental Purchasing Association, and Responsible Purchasing Network.
- Explore ways to track waste diversion in state agencies.

Employee Engagement

Employee engagement has been a key factor in the success of the greening government initiative. To ensure participation, all State agencies have at least one member on the GGC; most have green teams that promote sustainability within the agency. Without this employee engagement, the impact of the GCC initiatives would be lessened.

A great success has been the State's agreement with Denver's Regional Transportation District (RTD) to increase ridership and participation in the district's Eco Pass program. Since 2009, the usage of the ecopasses has increased helping reduce traffic and GHG emissions. In 2012, approximately 3,925 employees participated.

➲ Project Highlight: Solar Benefits Colorado - An Employee Benefit Greening Program

In FY12, the State partnered with the City and County of Denver, and Colorado Federal employees on the Solar Benefits Colorado program which helped employees pool their buying power for significant discounts (~25%) on solar energy systems. This program was extremely successful as a result of the hard work of the GGC. Approximately 1,115 public employees (~50% State Employees) signed up for the program to determine if solar was a cost effective options for their house Of those 1,115 public employees, over 119 contracts were signed totaling more than 662 kW (332 kW were contracted to State Employees) of new solar capacity will be installed throughout the state. These projects will produce 18.3 million kW hours of electricity over the next 20-years, reducing 30.6 million pounds of carbon dioxide emissions. This is roughly equivalent to planting 62,000 trees or avoiding nearly 32.5 million vehicle miles of travel. In addition, it is estimated that the program contributed to almost $3 million in solar investments throughout the State.

Figure 3. First Installation from the Solar Benefits Program

Future Plans and/or Suggestions

- Restore the GGC Employee Engagement Advisory Group.
- Create a better way for agencies to communicate the implementation of successful employee engagement programs.
- Review agencies' progress with Executive Directors and GGC agency representative(s).
- Increase the visibility of the greening government initiatives through success stories, presentations, and conversations with the cabinet members.
- Include an overview of the GGC in all new employees orientation boo

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Appendix A: Agency Subsections

The following section outlines how each agency performed on all the goals laid out in the executive order.

CDPHE

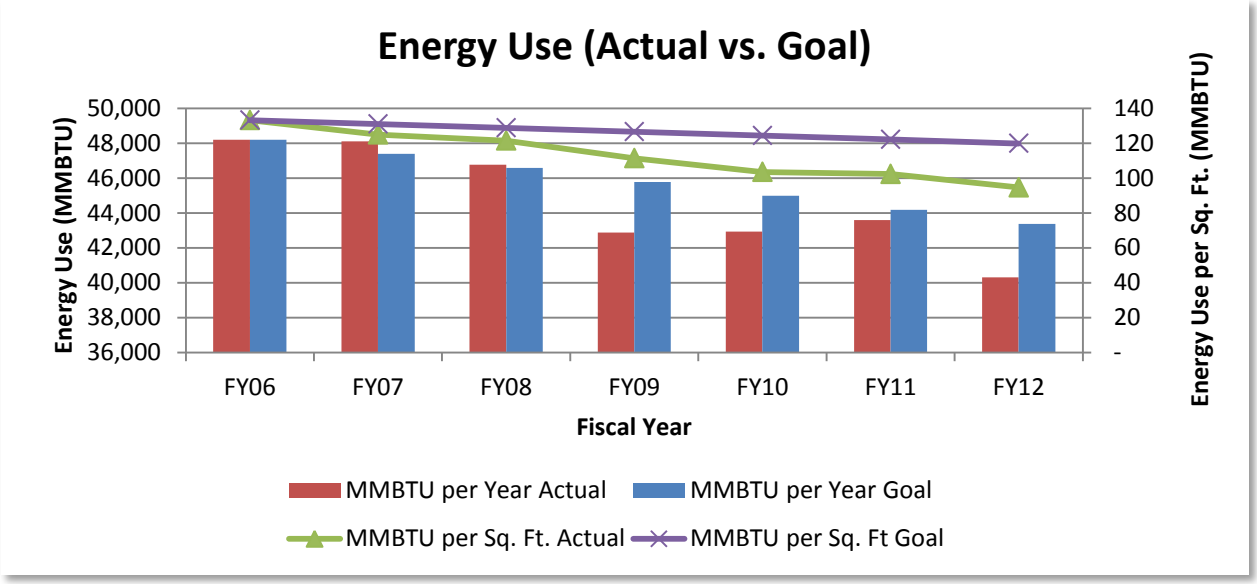
Colorado Department of Public Health and Environment (CDPHE)

The mission of CDPHE is to protect and preserve the health and environment of the people of Colorado. Dr. Chris Urbina serves as executive director of the department. The department is organized into 11 divisions that fall under three broad groupings: health programs, environmental programs and administration.

- **Total Owned Sq. Ft. in FY2012: 94,412**
- **% Increase in Owned Sq. Ft Since FY'06: 7%**
- **Total Leased Sq. Ft. in FY 2012: 331,385**
- **% Increase in Leased Sq. Ft. Since FY 06: 21%**
- **Number Employees in FY2012: 1,333**
- **% Increase in Employees Since FY'06: 11%**
- **Number of Energy Star Certified Buildings: 3**

Energy Use

Between FY'06-FY'12, CDPHE has reduced their energy use by 16.4% or 7,889 MMBTU surpassing the goal for CDPHE of a 10% reduction. More notably CDPHE has reduced their energy use per square foot by 29% or 38 MMBTU per square foot.



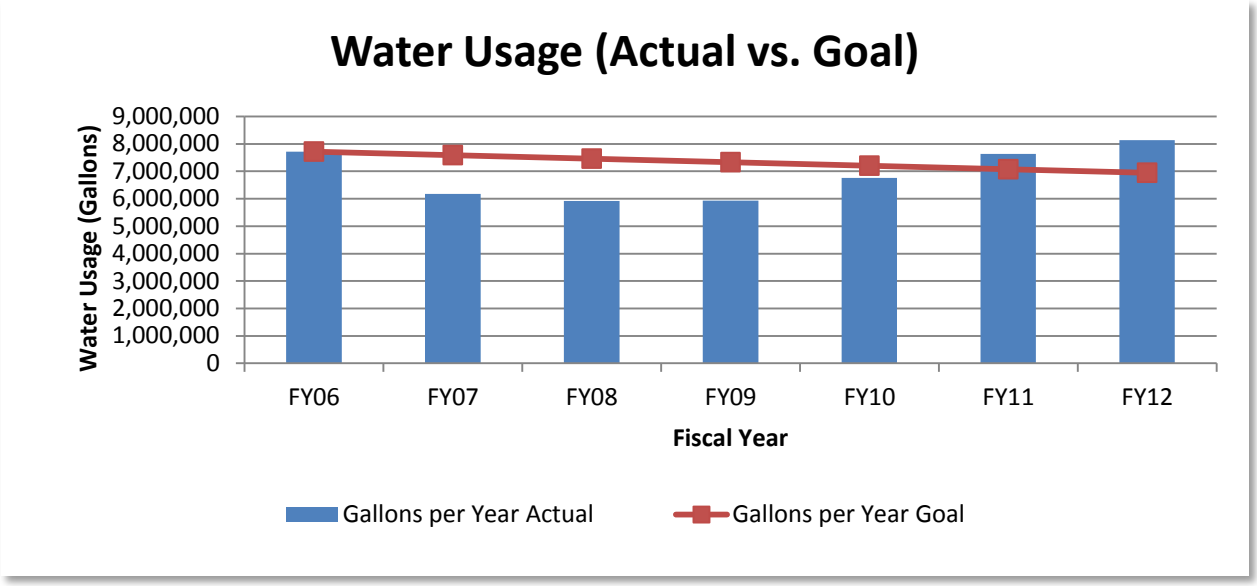
CDPHE has focused mainly on low hanging items that took advantage of utility rebates from Xcel Energy. The department has completed many lighting retrofits that replaced old T-12 systems that utilized magnetic ballasts to T-8 systems with electronic ballasts. Where bulbs were already T-8, the department switch from 32 watt bulbs to 28 watt bulbs and finally, where office space was too bright, the department did significant amounts of de-lamping from 3 bulbs to 2 bulbs. In addition to internal lighting, the department replaced dozens of 400 watt High Pressure Sodium external lighting fixtures with 88 watt LED fixtures.

The department has also replaced many Variable Air Volume boxes and controls at the Cherry Creek campus as well as performed many system upgrades for the Laboratory Services Building that save considerable amounts of energy.

Finally, CDPHE pursued many small changes at our buildings such as replacing over 20 refrigerators that were manufactured in the 1980's or earlier, phased out all CRT monitors with LCD units, installed Big Fix software on all of our computers, added motion sensors to all conference rooms, tinted south and west facing windows on the four largest buildings to reduce cooling load, and educated employees about ways they can reduce their energy use while at work.

Water Use

While initially reducing water use by almost 20%, in the last 3 years CDPHE's water use has been increasing. In 2012 CDPHE water use was 5.5% more than in 2006. This represents an increase in water use of 421,000 gallons. The increase can largely be accounted for by the addition of 64,000 Sq Ft. of leased office space and a dry summer which led to an increase irrigation need at the Lowry campus.



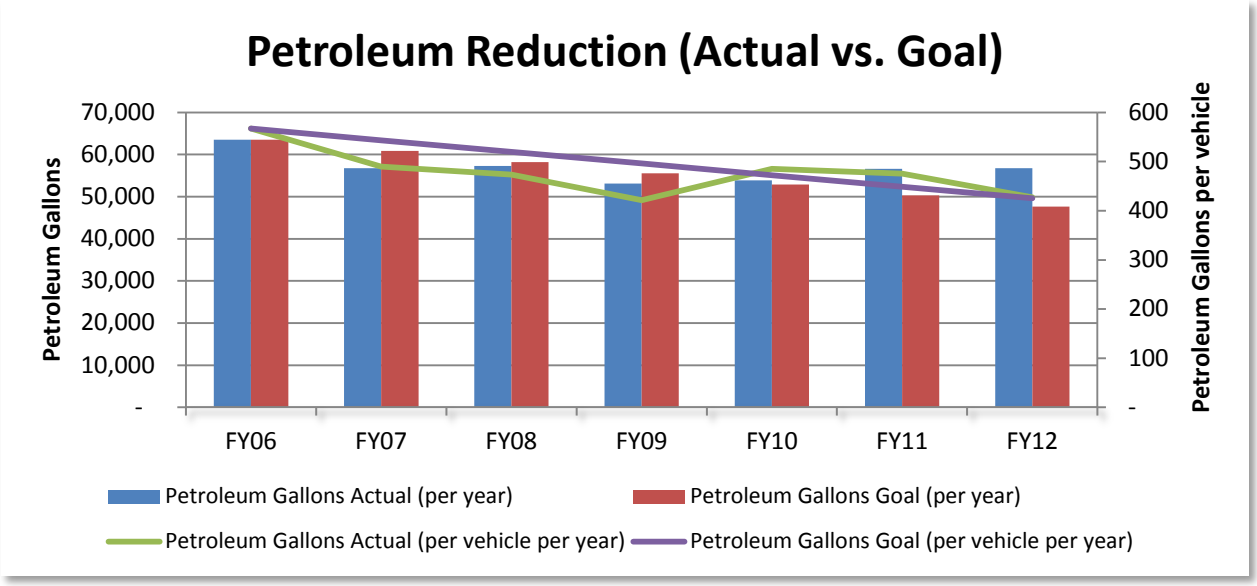
In 2007, the CDPHE Laboratory Services Building in Lowry replaced nearly 2 acres of Kentucky Blue Grass with xeric grasses. Denver Water estimated an annual water savings of over 2.5 million gallons as a result of this project. These savings are reflected in the decrease water use from 2006 to 2009.

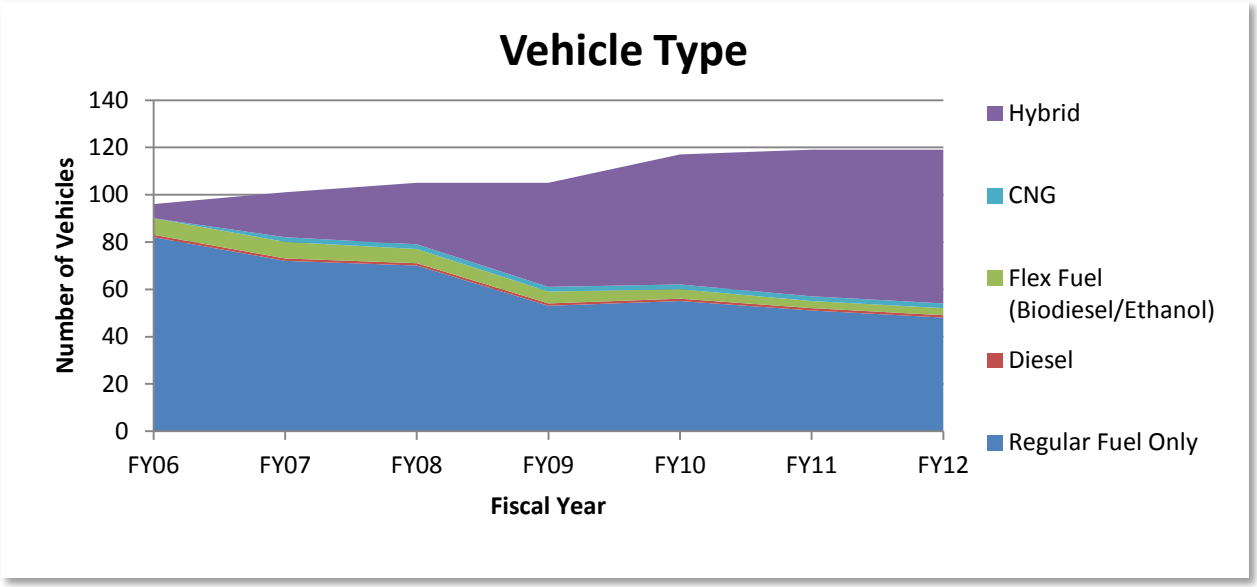
The Laboratory has also retrofitted their urinals from 1.5 gpf to waterless models, saving approximately 45,000 gallons per year. This estimate is based on 40 male employees using the restroom 3 times per day in an average work year of 250 days.

In 2010, CDPHE leased an additional 40,000 Sq. Ft. of office space at the Cherry Creek Campus. This accounts for a significant portion of the increased water use since 2010. In addition, dry summers have led to an increased need for irrigation at the Laboratory.

Petroleum Use

Between FY'06-FY'12, CDPHE has reduced petroleum use by 10.58% or 6,715 gallons annually even though they experienced a 21.4% growth in their fleet. CDPHE did succeed in reducing their petroleum use per vehicle by 26%.



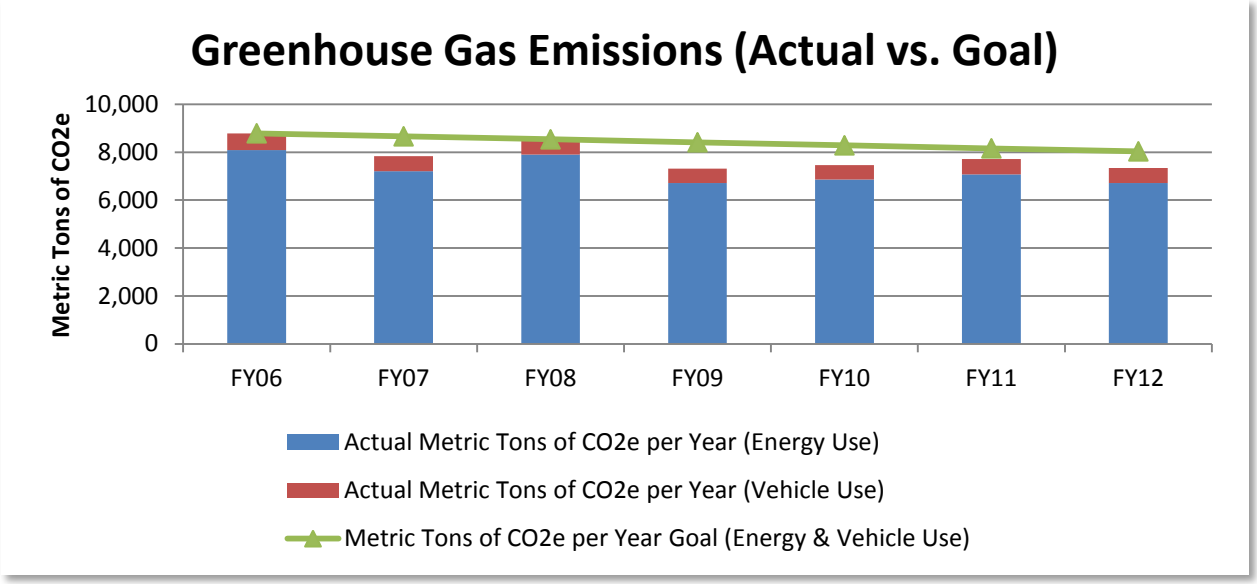


CDPHE was able to reduce fuel use despite an increase of 21 vehicles through an aggressive vehicle replacement plan. In 2006, only 6% of total vehicles were hybrids or CNG. In 2012 CDPHE's fleet is comprised of 56% hybrid or CNG vehicles.

CDPHE tracks annual miles reimbursed to employees for approved business travel in personal vehicles. Since 2006, reimbursed travel has been reduced by 186,157 miles, or 27%. This percentage was calculated using 2006 reimbursed miles to 2011. Fiscal year 2012 numbers will be released in January, 2013.

Greenhouse Gas Emissions

Between FY'06-FY'12, CDPHE has reduced their GHG emissions by 16.4% surpassing the goal of a 10% reduction during that time. Of the 1,444 metric tons of CO2e reduced, 1,378 tons metric tons came from energy use with the remaining 67 metric tons coming from petroleum use reduction.



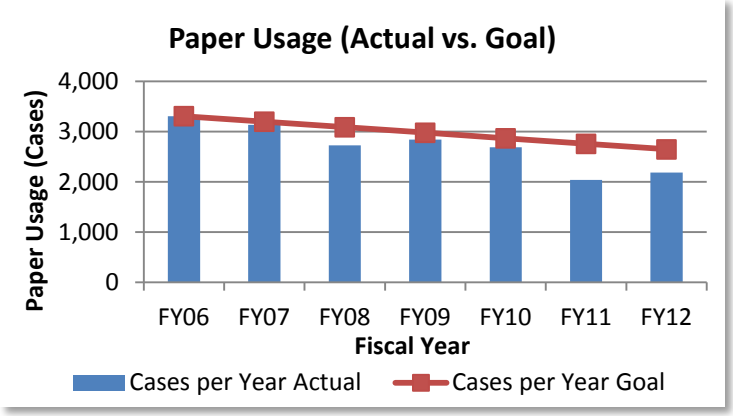
Procurement

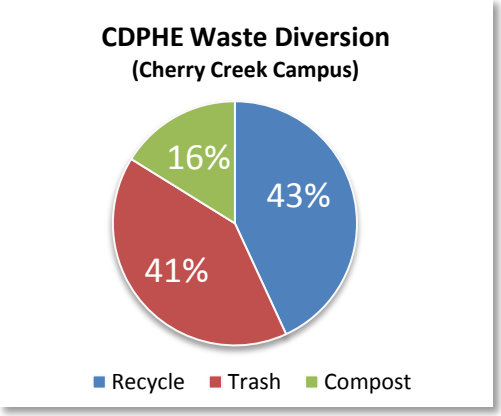
CDPHE has reduced paper use by 34% or 1,127 cases since 2006. A variety of paper-saving measures were implemented including: setting print defaults to double-sided printing; installing all-in-one machines that allow scanning and e-mailing of documents; posting information on-line; and expanding print shop capabilities to produce CD's. Thanks to the significant cost savings through the reduction efforts, CDPHE was able to reinvest a portion of the savings to purchase 100% recycled-content paper beginning in 2011.

CDPHE has also done a lot of waste diversion. CDPHE conducted an extensive waste audit of the Cherry Creek Campus in FY 2012. The audit results indicate that the Cherry Creek Campus diverts 59% of waste through recycling and composting. In March 2011, CDPHE approved a Zero Waste Policy which established a goal to strive for zero waste from the ongoing operations of the entire department, including meetings and other department functions. CDPHE expanded their composting program in 2012 to include additional conference rooms to target waste from lunch meetings. Lastly, an annual electronic waste recycling event is held for employees. In 2012, 9,484 lbs. of electronic waste was collected and responsibly recycled.

Employee Engagement

Each April CDPHE holds several events for employees in celebration of Earth Month. Typical events include brown bag lunches on climate change, employee electronics recycling collection, Cherry Creek Clean-up, and a compost give-a-way. Through the Department's Weekly Broadcast e-mail, sustainability tips are sent out to all CDPHE employees. In FY'12, CDPHE also did a special series on Greening Government for the Newslink, an internal monthly publication. September's issue focused on paper reduction, while October





focused on recycling and composting efforts. The Sustainability Unit presents at each new employee orientation providing a Greening Government overview and tips for employees.

CBTL

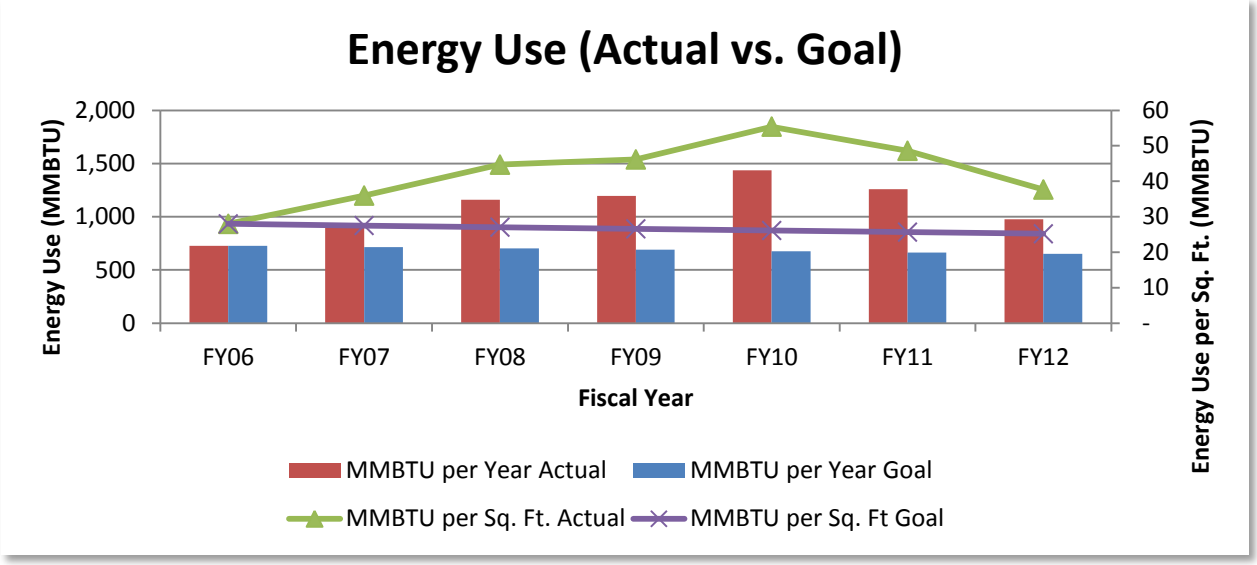
Colorado Talking Book Library (CBTL)

- **Total Sq. Ft. in FY2012:** 25,923
- **% Increase/(Decrease) in Sq. Ft Since FY'06:** 0%
- **Number of LEED Certified Buildings:** 0

The Colorado Talking Book Library (CTBL) provides free library services to disabled residents of Colorado. Collections include audio books, Braille books, large print books and descriptive videos. Additional services available are reference services to patrons and an on-line public access to the library's catalog through the KLAS circulation system. Materials are mailed postage-paid to patrons. The CTBL operates with a staff of 13 and a volunteer program with 180 volunteers. These volunteers work in every aspect of the library such as rewinding tapes, machine repair, preparing mailings and in the recording studio. CTBL hosts a number of special events in the library during the year and their conference room is used by CDE and the library community.

Energy Use

Between FY'06-FY'12, CTBL has increased their energy use by 35% or 251 MMBTU/year but is now seeing a downward usage trend as a result of various energy retrofits.



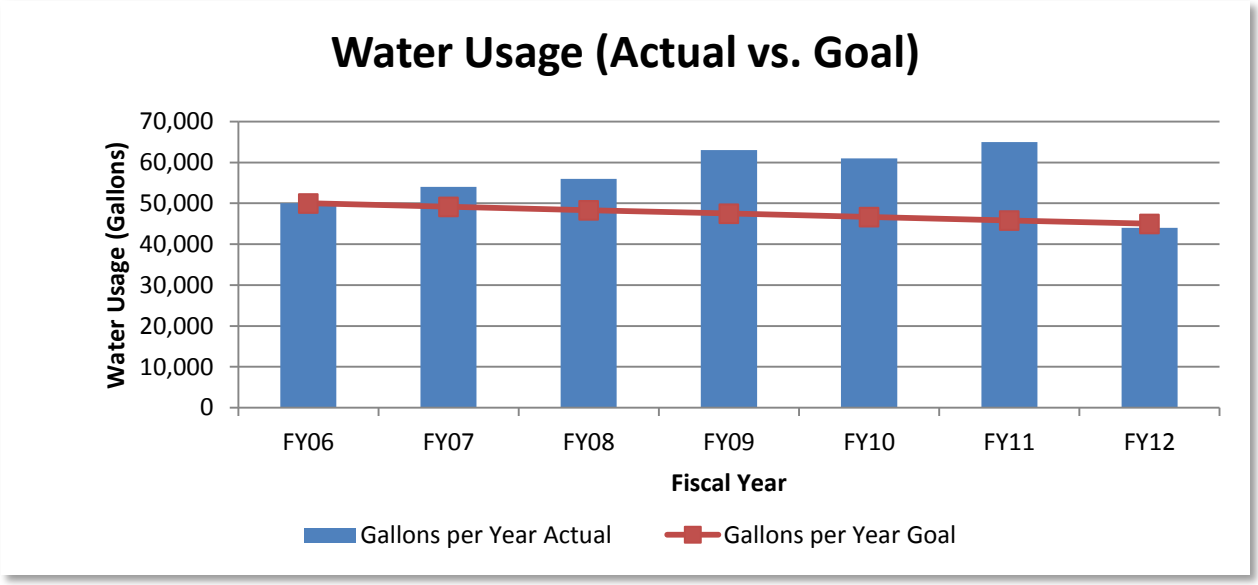
The building located at 180 Sheridan Blvd in Denver was purchased for the CTBL in 1990 with State Capitol construction funds. It was renovated, and then occupied in 1991. It has been serving patrons on a full-time basis since that time but did not undergo any upgrades until December 2010. In January 2008, a study commissioned by CTBL noted that the HVAC equipment required replacement. Four of the eight roof units were 36 years old; three were 18 years old and one was being used to provide parts for the remaining units as repairs became more frequent. The standard service life of an HVAC unit is 15 years. Lack of reliable HVAC jeopardizes service delivery to patrons and endangers the $4 million of inventory held by the library. Additionally, there were significant cost savings to convert the florescent lighting from analog to digital which is more energy efficient.

The increase in energy use between FY'06-FY'10 can be partly explained by the HVAC system's decreasing efficiency leading to temperatures in the building that could not be easily controlled. There were old thermostats and no zoning. The lighting, HVAC, and controls were retrofitted in 2010 and 2011 through an Energy Performance Contract. This correlates the decrease in energy use in FY'11 and FY'11.

In FY'07, CTBL added several special events (including the 9Health Fair) and started longer hours that contributed to the increase in energy and water usage.

Water Use

Over the last 7 years, CTBL water use has decreased by 6,000 gallons or 12% surpassing the 10% reduction goal set out by the executive order. CTBL uses water only in the rec room and bathrooms (they have no outside landscaping to water) therefore their usage is affected greatly by hosting of events and conferences. The increase in water from FY'07-FY'11 can be partially explained by CTBL hosting various events including 9Health Fair.

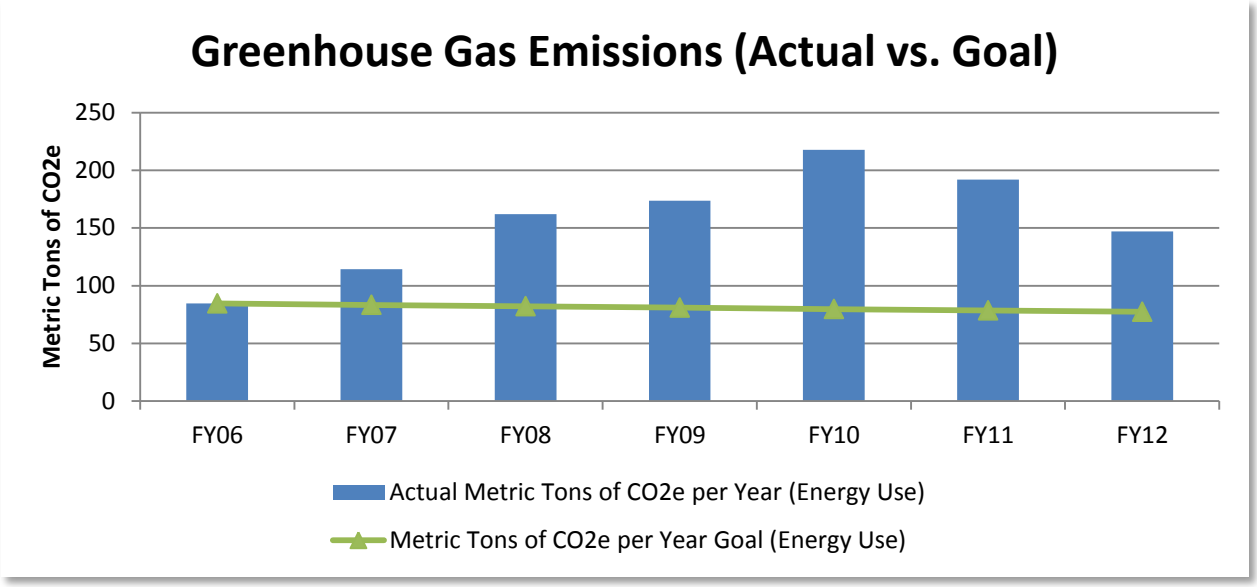


Petroleum Use

The CTBL does not operate any vehicles that fall under the executive order.

Greenhouse Gas Emissions

Between FY'06-FY'12, CTBL has increased their GHG emissions by 74% (147 metric tons of CO2e).



Procurement and Employee Engagement Highlights

CTBL has been recycling waste paper and cardboard since 2004. When single stream recycling became available they started to recycle all acceptable items.

CSDB

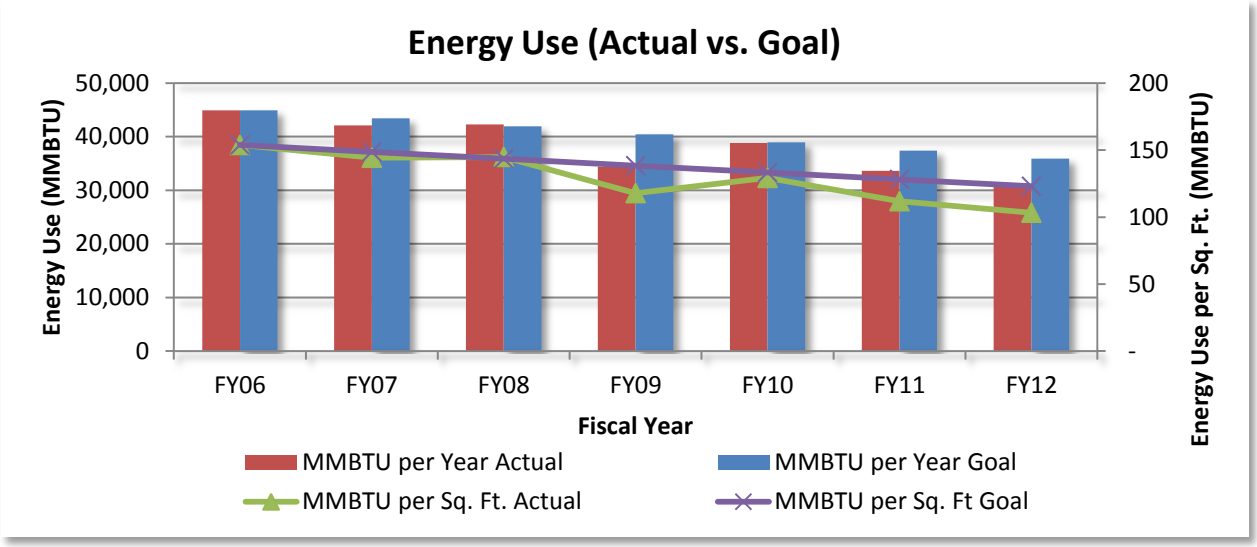
Colorado School of Deaf and Blind (CSDB)

CSDB provides children from birth to twenty one who are deaf/hard of hearing and/or blind/visually impaired and their families with comprehensive, specialized educational services in safe, nurturing environments. CSDB focuses on empowering learners to become self-determined, independent, contributing citizens within their communities.

- **Total Sq. Ft. in FY2012:** 301,471
- **% Increase/(Decrease) in Sq. Ft Since FY'06:** 3%
- **Number Employees in FY2012:** 266
- **% Increase/(Decrease) in Employees Since FY'06:** 14%
- **Number of LEED Certified Buildings:** 1 submitted for review

Energy Use

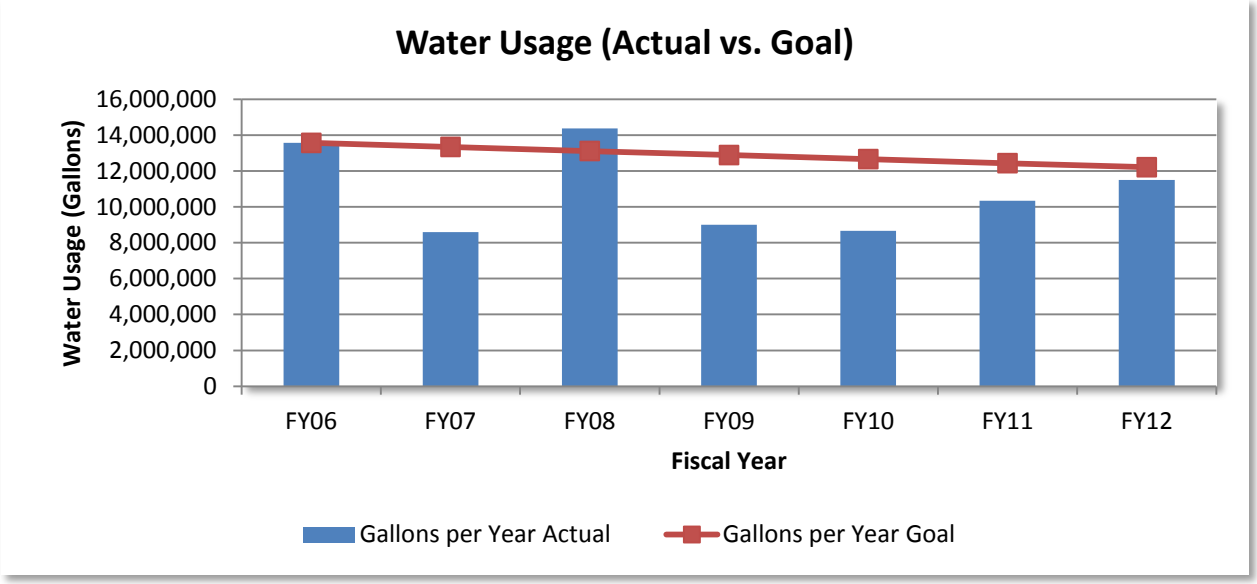
Between FY'06-FY'12, CSDB has decreased their energy use by a notable 30% or 13,773 MMBTU surpassing the Greening Government Executive Order. More impressively if you take into the slight increase in CSDB's square footage, the campus has seen a 33% (51 MMBTU/sq. ft) decrease in energy use per square foot.



In FY'11, CSDB completed the work related to their energy performance contract including lighting upgrades and controls, replacement of an antiquated boiler system. They reviewed and modified their building automation controls and programming to optimize energy use, while working with staff to provide a basic understanding of the role each person plays in energy control.

Water Use

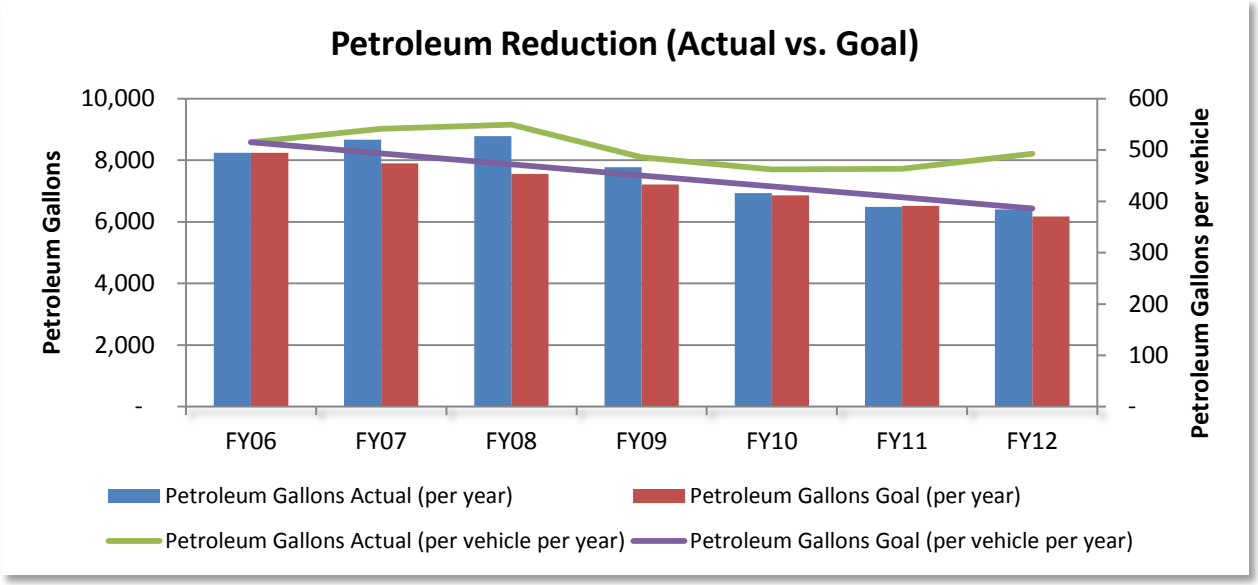
Over the last 7 years, CSDB water use has decreased by 2.062,800 gallons or 15% surpassing the 10% reduction goal set out by the executive order.

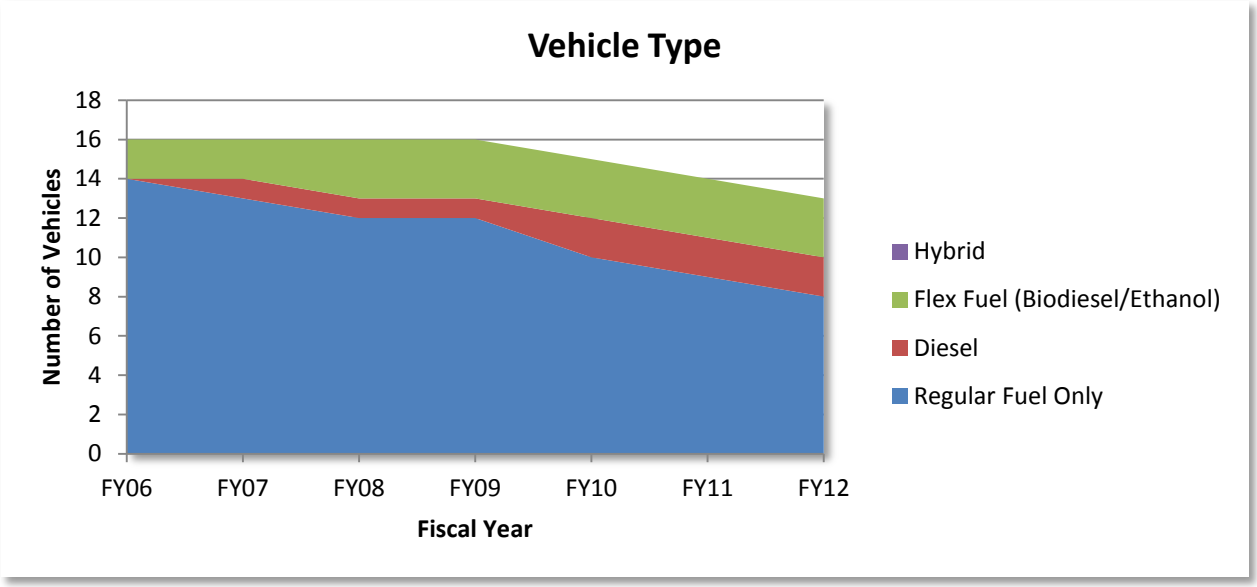


As part of our overall energy management plan CSDB has installed irrigation meters to manage wastewater COSTS. We have installed a direct digital control building automation system controlling the irrigation system. This system replaces a system that was based on evapo-transpiration rates with a more accurate sensor.

Petroleum Use

Between FY'06-FY'12, CSDB has reduced their petroleum use by 22% or 1,832 gallons annually.

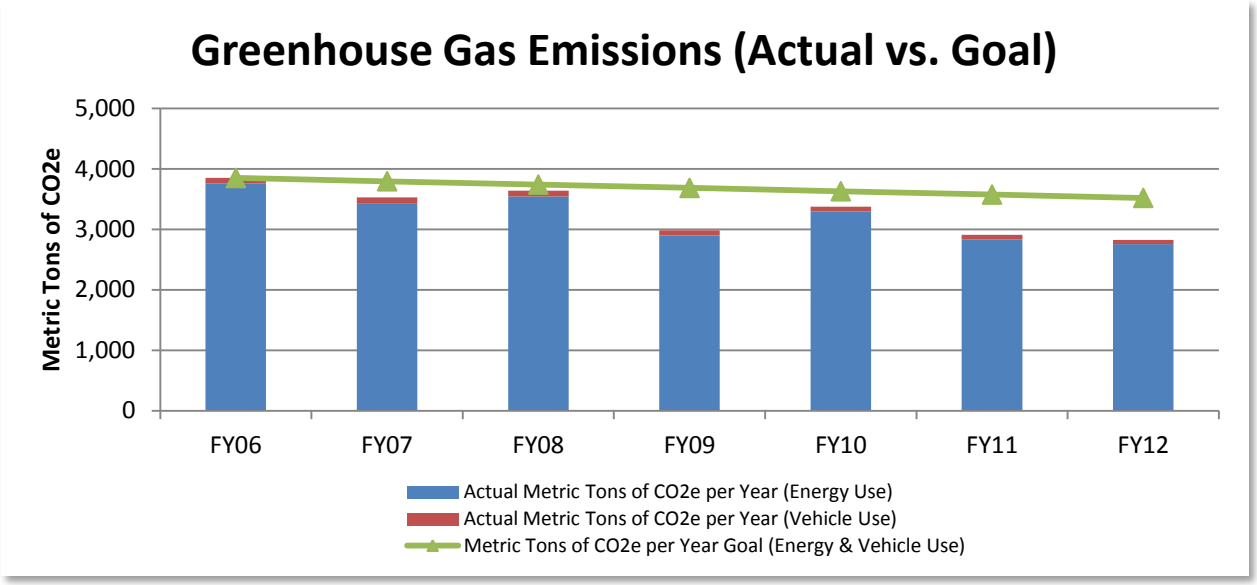




CSDB has worked with State fleet in the selection of vehicles based on the requirements of our staff and students. CSDB instituted a scheduling program for ensuring the vehicles are used as efficiently as possible. CSDB staff are aware of combining trips and activities to save not only fuel but impact on a limited fleet of vehicles.

Greenhouse Gas Emissions

Between FY'06-FY'12, CSDB has decreased their GHG emissions by 27% (1,025 metric tons of CO2e). The majority of this decrease can be attributed to the decrease in energy use.



Procurement

CSDB has implemented a single stream recycling program for the entire campus. Multiple receptacles are placed on campus and a group of students provide the collection service to a central location as part of their on campus work program. CSDB has also established a recycling program for electronics.

Employee Engagement

In addition to the students activities identified above, students engage in classroom work surrounding green activities.

Colorado Department of Agriculture (CDA)

CDA

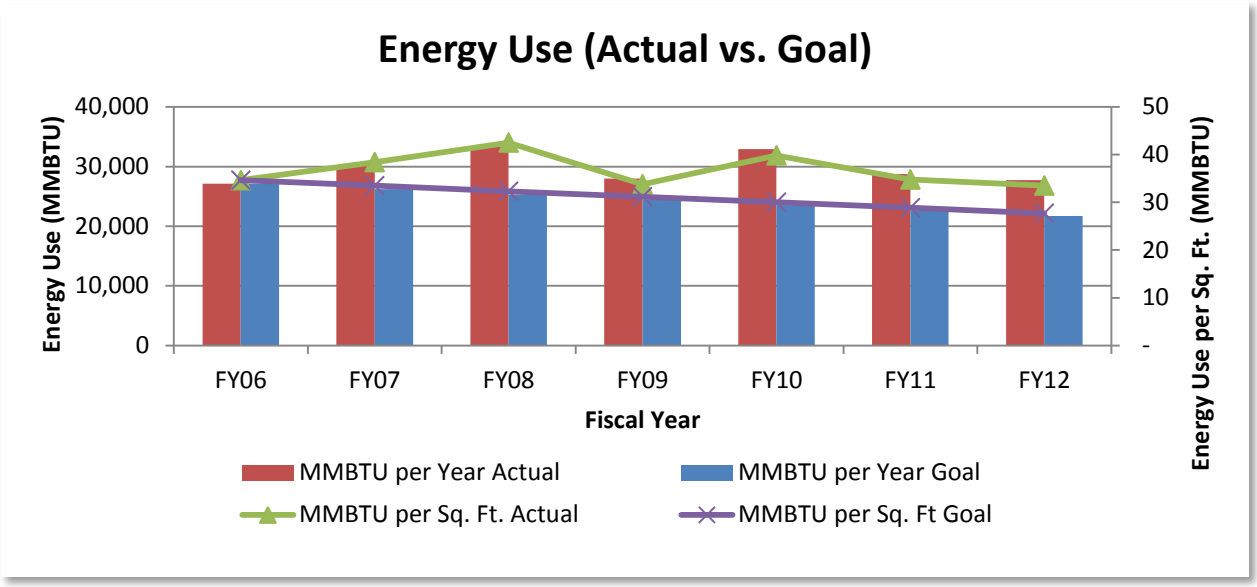
The mission of the CDA is to strengthen and advance Colorado's agriculture industry; ensure a safe, high quality, and sustainable food supply; and protect consumers, the environment, and natural resources. Agriculture is one of the top three industries in Colorado, provides $40 billion to the state economy, and employees more than 170,000 people across the state. CDA supports and regulates the industry through a wide array of regulatory and non-regulatory programs that facilitate commerce, protect public health, and ensure enhanced stewardship of the environment.

- **Total Sq. Ft. in FY2012:** 827,212
- **% Increase/(Decrease) in Sq. Ft Since FY'06:** 6%
- **Number Employees in FY2012:** 315
- **% Increase/(Decrease) in Employees Since FY'06:** (6%)
- **Number of LEED Certified Buildings:** 0

Energy Use

Between FY'06-FY'12, CDA has increased their energy use by 2% or 583 MMBTU. However, CDA experienced a 6% increase in square footage during that time. Therefore, they have seen s 3.26% reduction

of their energy use per square foot.

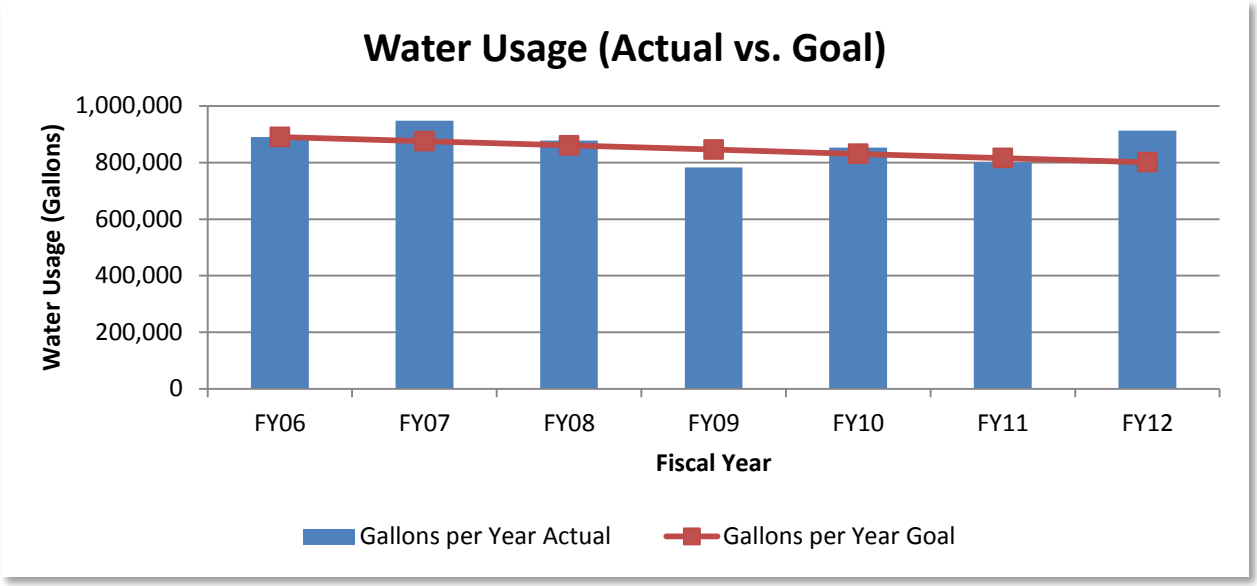


CDA's operations have changed little to explain significant changes in energy use patterns. However, enhanced utilization of the State Fairgrounds facilities, as part of a redoubled effort to increase the operation's profitability, may account for an increase in utilities usage. In addition, the Palisade Insectary received a set of valuable incubators (roughly valued at $25,000 each) which it has deployed to increase the insect rearing and storage capacity of the program. While this action has enhanced the program's ability to serve the public, it has also certainly increased the baseline electric consumption at the facility.

The most significant energy action taken by CDA during this period has been the initiation and completion of an agency-wide energy performance contract. This $1.84 million contract installed new equipment at the State Fairgrounds, Inspection and Consumer Services, and Palisade Insectary facilities. Because the installation and commissioning of all equipment was not completed until early FY'13, the utility usage for FY'12 does not reflect the full benefit of the suite of improvements made to CDA's facilities. FY'13 and FY'14 utility usage should more fully reflect the benefits of the energy performance contract.

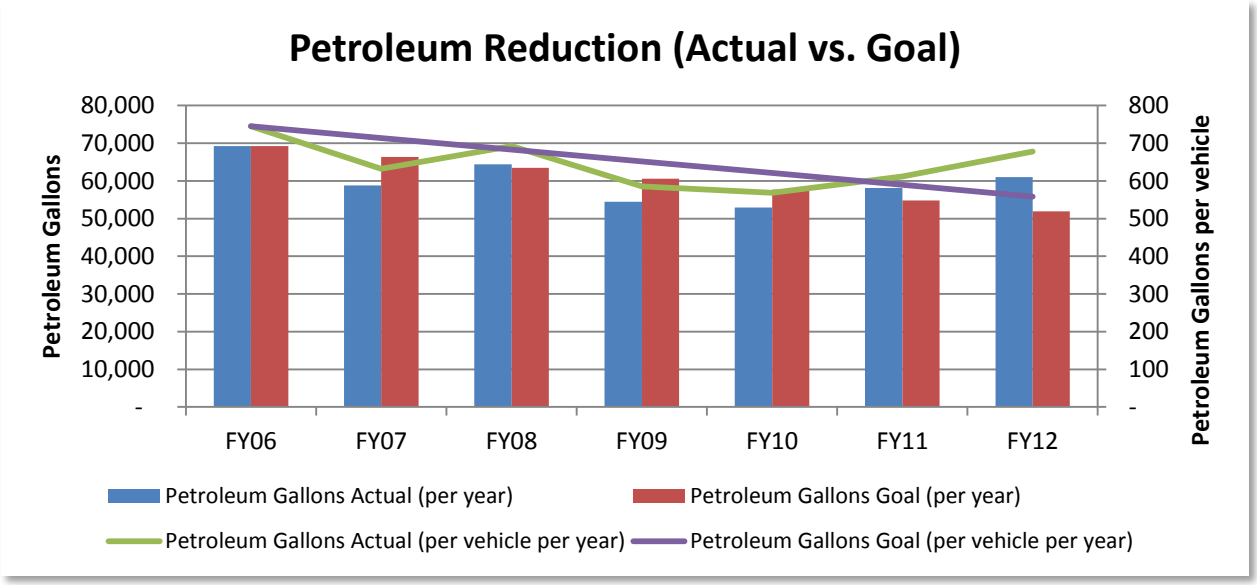
Water Use

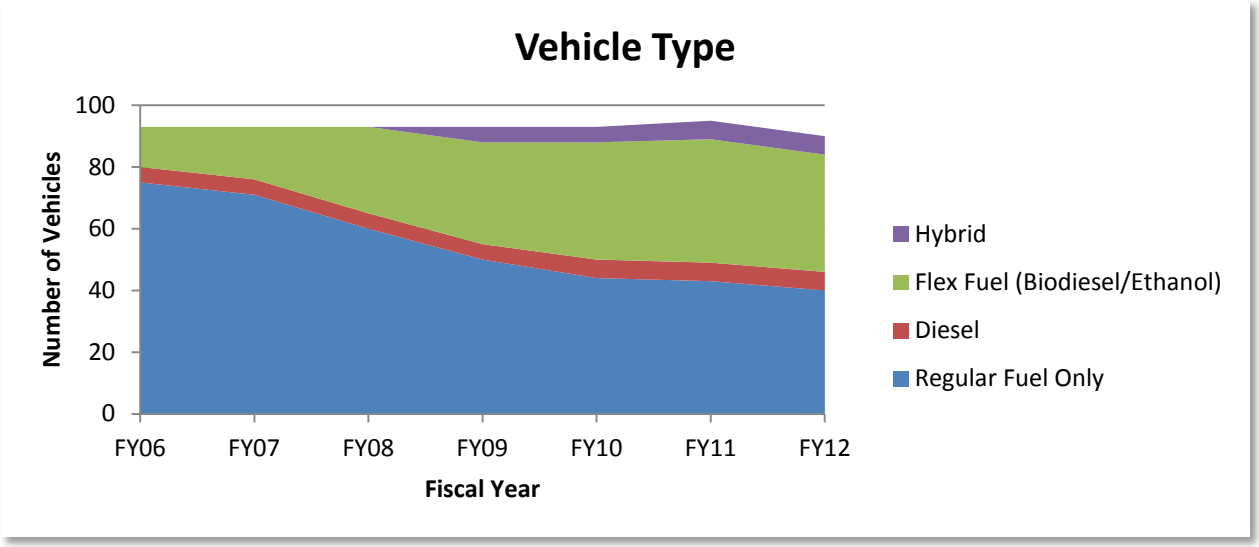
Over the last 7 years, CDA water use has increased by 2.5% (22,556 gallons).



Petroleum Use

Between FY'06-FY'12, CDA has decreased their petroleum use by 11.9% or 8,241 gallons annually.





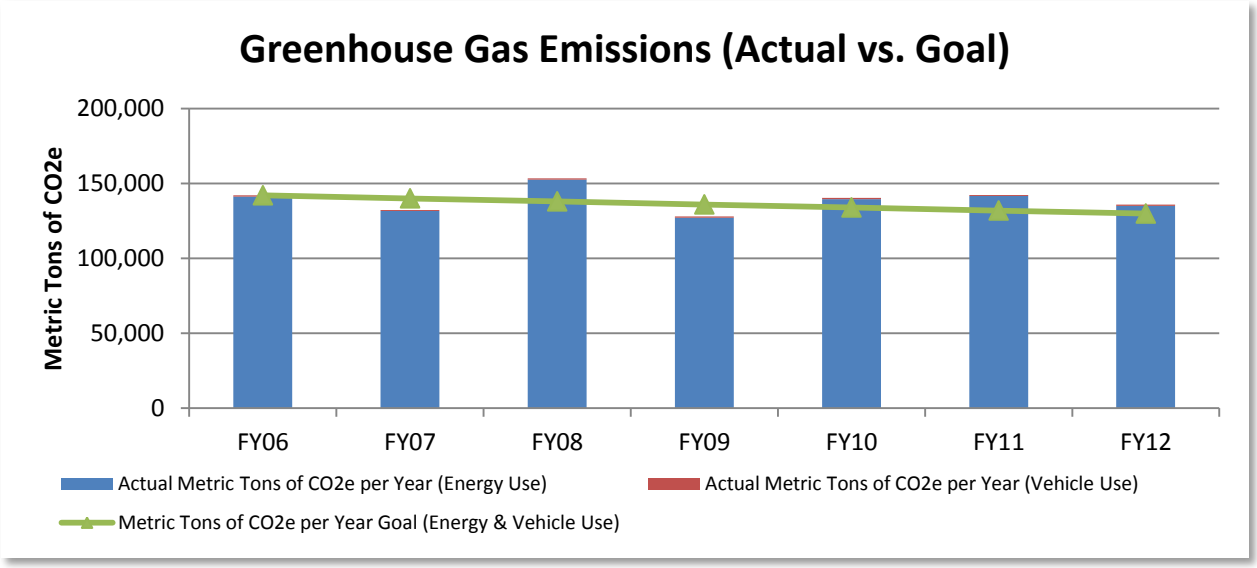
Since the adoption of the Executive Orders pertaining to Greening Government efforts, CDA has made a concerted and consistent effort to select replacement vehicles that are more energy efficient whenever possible. The Department has improved the energy efficiency of its Fleet-managed vehicle pool in several ways:

- CDA has re-evaluated its vehicle needs and downsized vehicles whenever possible and justified by business needs
- CDA has replaced several conventional gasoline vehicles with hybrid sedans and one SUV
- CDA has replaced approximately 20 vehicles with flex-fuel (E85) cars, mini-vans, and pickup trucks.

These changes have significantly changed the composition and fuel-use characterization of CDA's Fleet-managed vehicle pool. In the future, CDA will continue to replace its aging vehicles with the most energy-efficient vehicles that meet the business needs of the agency.

Greenhouse Gas Emissions

Between FY'06-FY'12, CDA has reduced their GHG emissions by 4.3% (6,160 metric tons of CO2e).



Procurement

CDA's most significant effort to reduce paper use was an agency-wide replacement of personal desktop printers with centrally-located multifunction printers. Not only did this project centralize printing and copying in order to reduce paper consumption, it also:

- lowered equipment maintenance and toner replacement costs,
- enhanced printing and copying capabilities such as universal double-sided printing, and
- reduced the vampire load from dozens of extra desktop-printers.

Ongoing efforts to reduce paper consumption include transitioning to digital forms for internal agency business needs and the consolidation of our licensing/permitting systems in ways that will allow external clients and regulated entities to renew their licenses/permits online rather than through conventional mailed forms.

The Department has also made concerted efforts to identify waste streams and provide for cost-effective diversions to accepted recycling or reuse programs. For example, CDA recently procured the low-cost Big Green Box program to properly recycle disposable batteries while dead rechargeable batteries are diverted to free recycling programs at nearby office supply stores. Internally, CDA has reduced waste and saved money by reusing mailing and packaging supplies shipped to one division (e.g., lab samples shipped to the Animal Health Lab) to package and send insects from the Palisade Insectary. In this same way, numerous gel packs have been reused and diverted from the landfill.

Employee Engagement

The Department's Green Team has engaged CDA staff in a number of ways:

- Arranged an alternative transportation and alternative fuel vehicle event that introduced staff to mass-transit and car-pooling opportunities as well as a number of electric and hybrid electric vehicles now in use in the State Fleet
- Advocated for and procured EcoPass for Denver-metro employees as well as provided training in how to use SkyRide
- Hosted a Bike-to-Work station in Lakewood just a couple of miles from CDA headquarters and worked with staff to identify the best routes for cycling to work
- Provided period and timely information about free ewaste recycling events in the community for the disposal of personal electronics

DOC

Department of Corrections (DOC)

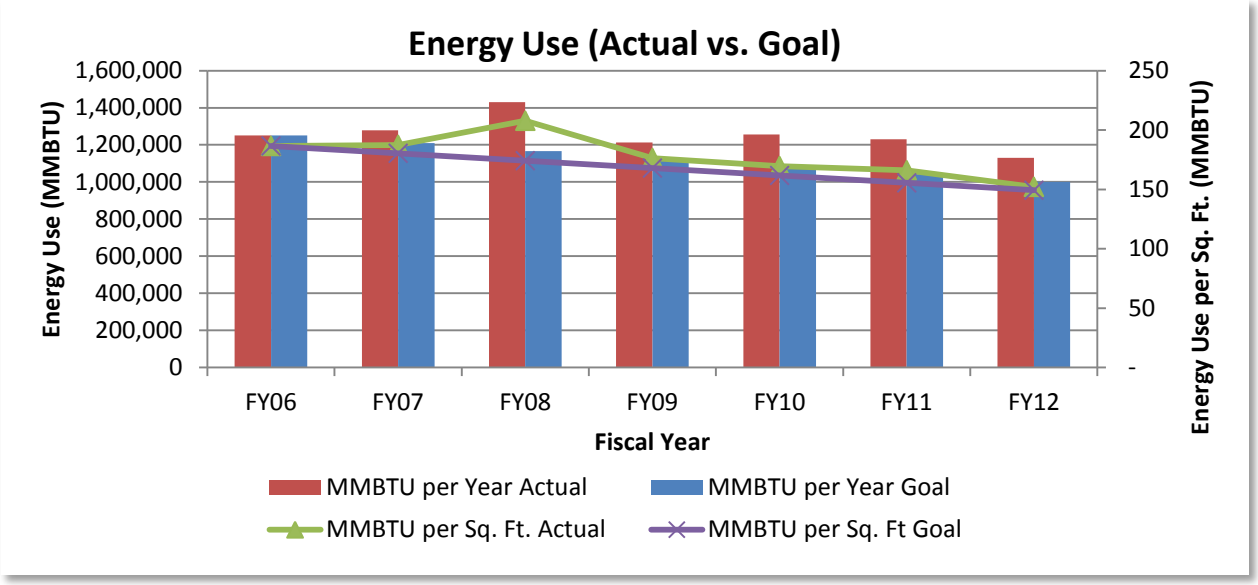
The DOC vision statement is to "Building a Safer Colorado for Today and Tomorrow." They do this through their mission statement "To protect the citizens of Colorado by holding offenders accountable and engaging them in opportunities to make positive behavioral changes and become law-abiding, productive citizens."

- **Total Sq. Ft. in FY2012:** 7,427,386
- **% Increase/(Decrease) in Sq. Ft Since FY'06:** 11%
- **Number Employees in FY2012:** 6,310
- **% Increase/(Decrease) in Employees Since FY'06:** 12%
- **Number of LEED Certified Buildings:** 0

The DOC is an executive agency of Colorado state government. DOC operates and manages twenty correctional facilities and three repurposed or decommissioned correctional facilities, on complexes across the State of Colorado, comprising approximately 11,000 acres.

Energy Use

Between FY'06-FY'12, DOC has reduced their energy use by 9.62% or 120,222 MMBTU falling short of the 20% reduction goal. However, DOC experienced an 11% increase in square footage during that time. Therefore, they have made a notable reduction of their energy use per square foot by 18.45% or 34.42 MMBTU per square foot.



DOC has a Utilities Subprogram which directs the Energy Management Program (EMP) and includes: Energy Performance Contracting (EPC) projects; Enterprise Management Control System effort; Education and Awareness Program on Energy Efficiency & Water Conservation; Renewable Energy initiatives; utility management and invoice analysis and monitoring; utility tracking using the state-required EnergyCAP utility database; electric, natural gas, propane, and potable water consumption reduction projects; the Energy Efficiency Plan, Water Conservation Plan, and the DOC Recycling Plan.

In FY'12, the EMP continued the program of implementing utility improvement measures, resulting in avoided costs, through such measures as: upgrading lighting to more efficient fixtures; installing variable frequency drives; continuing electrical service agreements under a demand-side management program;

utilizing the procurement process to lower costs on natural gas transportation; installing potable water conservation measures; and implementing facility weatherization upgrades and replacements.

In FY'12, the EMP with Energy Services Companies (ESCOs) performed the Technical Energy Audit (TEA) phase of performance contracting at Fremont Correctional Facility (FCF) and Sterling Correctional Facility (SCF), and implemented the construction phase of Performance Contracting at Colorado Territorial Correctional Facility (CTCF), Buena Vista Correctional Complex (BVCC), and (SCF).

In FY'13, DOC and the ESCOs will finalize the CTCF, BVCC, and SCF construction and enter the Measurement and Verification phase of those three projects. Together these three projects are expected to save the DOC $1.37 million in utility savings annually. Further, DOC anticipates finalizing the TEAs initiated in FY'12 at Arkansas Valley Correction Facility (AVCF) and Limon Correctional Facility (LCF).

DOC is a host site for four photovoltaic solar electric generation projects resulting in cost avoidance for energy purchased through the associated Power Purchase Agreements. The EMP program avoids costs through the continued the practice of bulk propane purchases and a periodic bulk diesel purchases for generators.

The cost avoidance funds gained through these combined efforts are invested back into the program for implementing new EMP projects or program improvements.

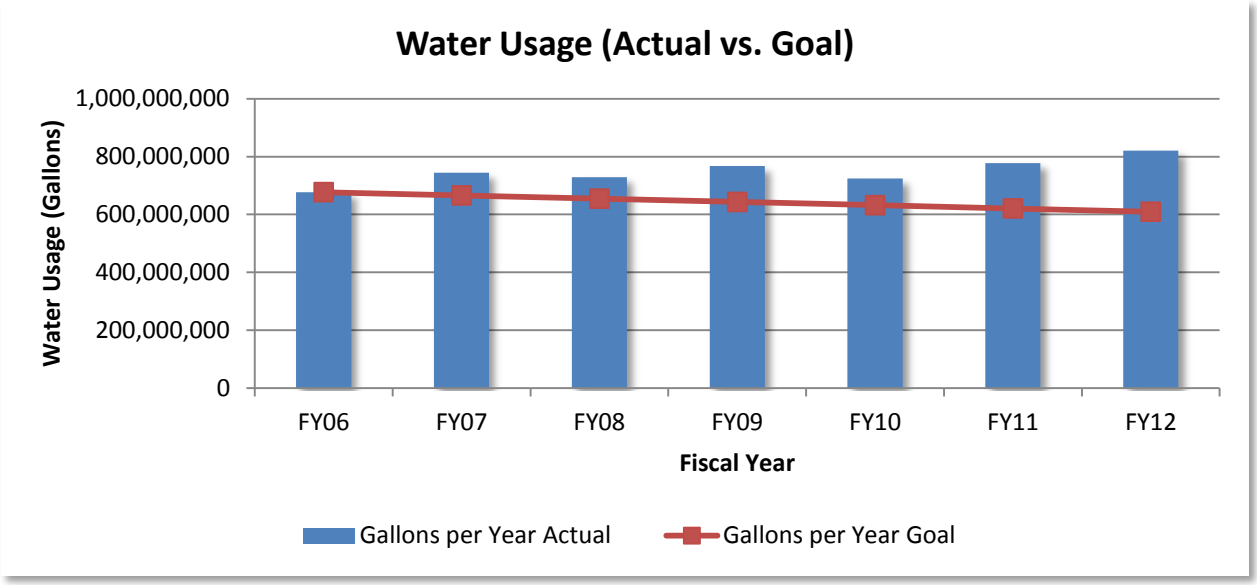
The DOC has installed energy-producing solar arrays in four prisons around the state, arrays that have generated over 696,440 kWh in FY2012, enough power to meet the needs of 80 homes. The state was able to take advantage of a combination of rebates and other financing options, and brought the arrays on-line with no cash outlay by the state. They are expected to save the state $475,000 over the next twenty years.

Moving forward, DOC hopes to participate in Xcel Energy's 2012 Solar*Rewards Community program in both the standard medium tier and Request for Proposal (RFP) processes, through a third-party developer. The RFP process is on-going, with awards to be announced on or after October 8, 2012.

Figure 1. Solar Panels installed at the Colorado Territorial Prison in Canon City

Water Use

Over the last 7 years, DOC water use that is purchased by a water utility has increased by 21% (143 million gallons). However in FY'06, 13.5% of the total DOC potable water use was from DOC's own wells. The bar chart, below, reflects only purchased potable water (as reported by EnergyCAP); so, it does not reflect all DOC potable water usage.



The increase in purchased water usage can be partly explained by the following:

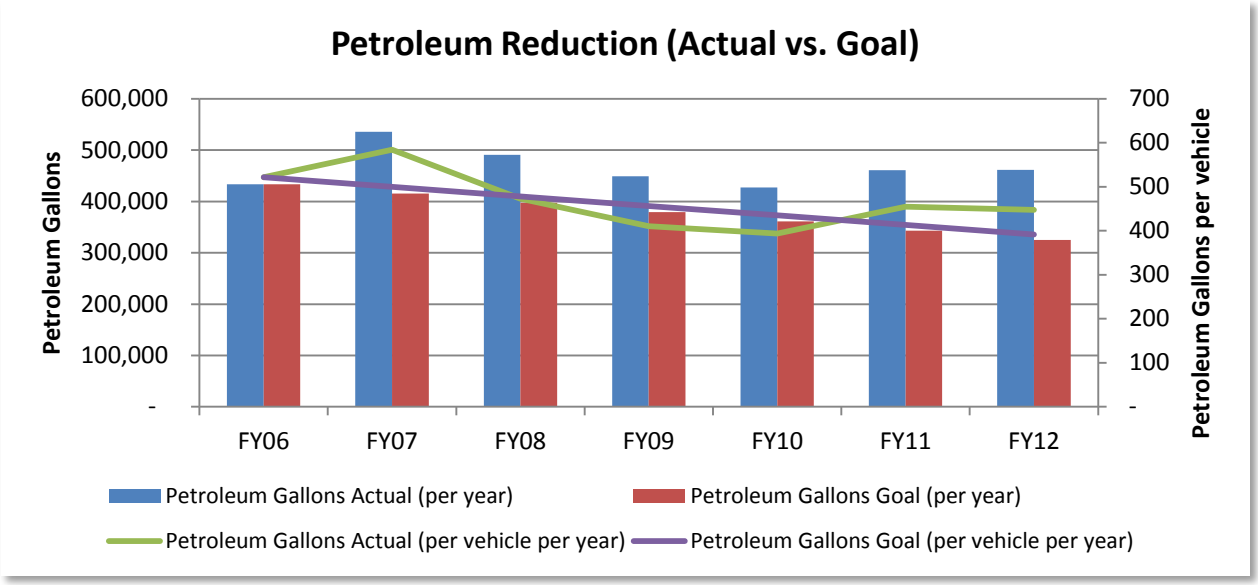
- 2.8% growth of on-ground population leading to approximately 26 million gallons of additional use.
- Expansions of water-intensive Division of Correctional Industries agri-business programs (including: fisheries produce washing, wild horse and bull boarding programs, a new dairy, expanded goat dairy). It is estimated that these additional and successful businesses have increased the water use by 64 million gallons.
- The addition of wastewater pretreatment facilities added approximately 5 million gallons in FY'12.

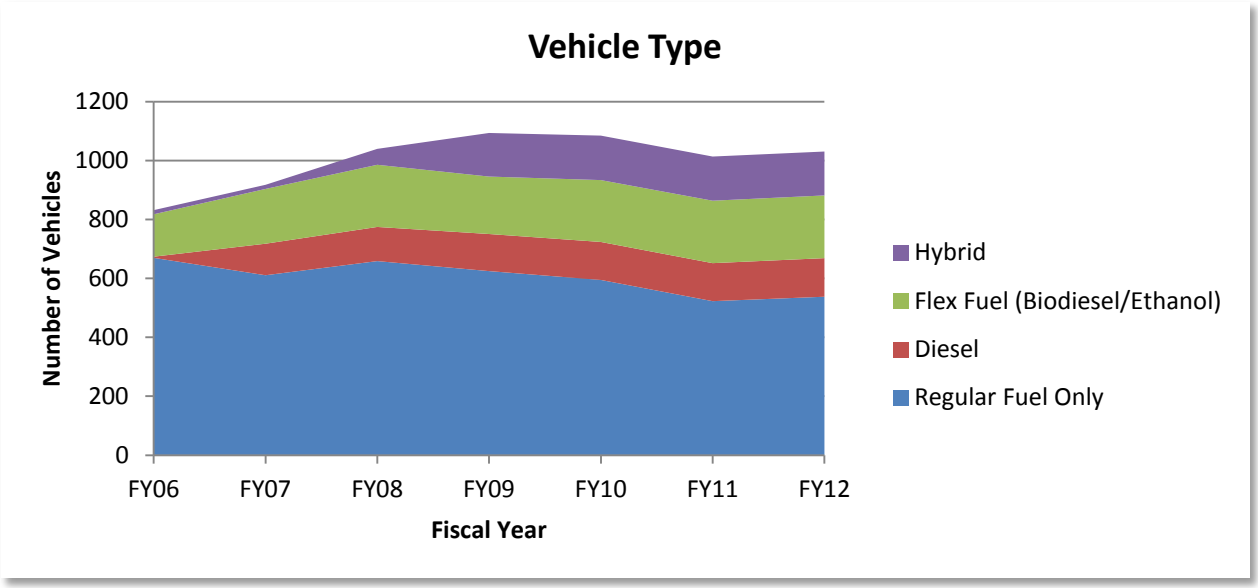
Between FY'06 and FY'12 DOC potable water use associated with its own water systems has decreased from 184 million gallons to 68 million gallons reflecting a 63% reduction in well water usage.

If potable water from wells and purchased utility water is added together, DOC has seen a total increase of less than 1% (7.8 million gallons) in their potable water use between FY'06 and FY'12. If normalized for growth and expansion, there has been a reduction in potable water usage of slightly over 10% for this period, meeting the goal of the Executive Order.

Petroleum Use

Between FY'06-FY'12, DOC has increased their petroleum use by 6.4% or 27,726 gallons annually but reduced their petroleum use per vehicle by 14.2%. The increase in fuel use can be equated to the increase in their fleet by 24% during this time, most of these vehicles being legislatively mandated.

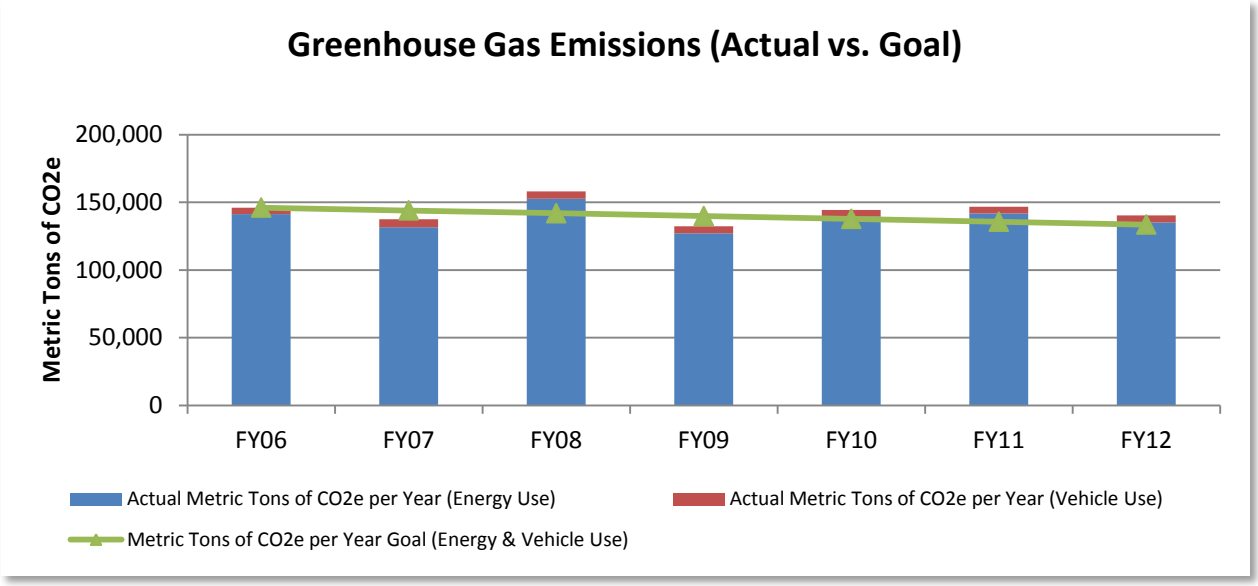




The Department has instituted video teleconferencing in every facility to allow for meeting participation without travel. Vehicle replacements have not been available for the last 2 years, however whenever possible flex fuel and hybrid vehicles have replaced standard gas fueled vehicles. A flex fuel fueling station has been installed in the East Cañon City Prison Complex and dispenses approximately 500 gallons per month (approximately 5% of fuel usage for passenger vehicles). The DOC follows the state's "25 in 5" plan, which includes the use of biodiesel or ethanol fuel in state-owned vehicles, reduction of vehicle idling, and reduction of vehicle mileage.

Greenhouse Gas Emissions

Between FY'06-FY'12, DOC has reduced their GHG emissions by 4% (5,733 metric tons of CO2e).



Procurement

The DOC has actively worked to reduce their paper use through the following measures:

- DOC Administrative Regulation requires double-sided printing.
- Paperless office techniques (including scanning), and keeping electronic files, rather than hard copy files are used when possible.
- Weekly, monthly, and quarterly newsletters are available through the use of email and no longer published in hard copy format.
- Transition of DOC payroll to electronic pay stubs took effect in 2010.
- Reuse training handouts, rather than offer them up as "keepsakes".
- Transitioned from MSDS (Manufacturer Safety Data Sheets) hard copy books – up to four per facility – to MSDS On-line. The resultant savings is over 50,000 sheets of paper.
- Offender grievance kites, and letters are scanned and emailed, rather than sent as hard copy.
- Work schedules are now delivered via email, rather than hard copy.
- Open records act responses are now sent electronically, rather than hard copy.
- The office of Human Resources has transitioned from paper hard copy forms for annual and intermittent performance evaluations to an on-line HRMES system. They calculate savings for one year at 1,859,280 sheets of paper – or the equivalent of 223 trees.

The DOC has actively worked to reduce their waste, while increasing recycling and composting, through the following measures:

- The DOC Administrative Regulation on Waste Disposal and Vermin Control provides guidelines and procedures to ensure compliance with laws, rules and regulations, and adopted codes and standards and covers the following topics, 1) Recycling, 2) Waste Paper Reduction, 3) Construction and Operations Waste, and 4) Purchasing.

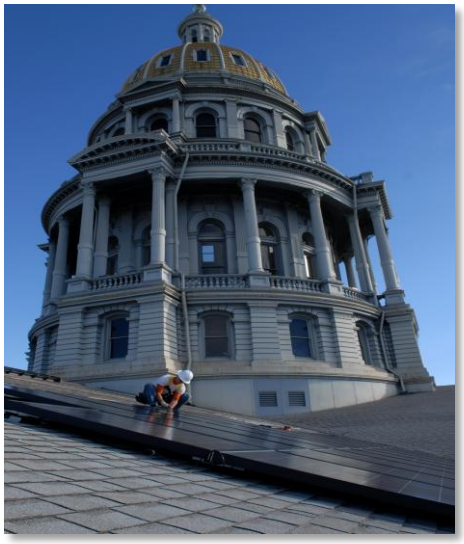
- The DOC developed an improved recycling program for the Headquarters (HQ) office, and launched the new program on July 1, 2012.
    - Each HQ employee received a desk side "single stream" recycling bin
    - Single Stream recycling includes aluminum/metal, cardboard, glass, paper, and plastic.
    - There is a recycling area on each floor of HQ; when a staff member's desk-side bin is full, they just empty it into the larger bin.
    - A "Champion" from each department monitors common collection areas
    - Each department has their own printer cartridge recycling box. Used cartridges are placed in the box, taped up, and taken it to the mailroom for shipment to the recycling vendor via UPS at no charge.
- DOC continues the used writing instrument recycling program.
- DOC Purchasing follows the state's Environmentally Preferable Purchasing Policy
- DOC continues Recycling programs at most correctional facilities throughout the state.
- DOC continues Composting programs to reduce landfill waste and provide soil enhancement at a few facilities throughout the state.

Employee Engagement

In FY'12 and early FY'13, several presentations were made to members of DOC expanded executive staff to convey, share, and discuss Energy Management Program initiatives, projects, and accomplishments. During FY'12, DOC developed an Education and Awareness Program plan, outlining the overall scope and tasks associated with increasing awareness of energy efficiency, water conservation, and natural resource use. The initial task in achieving enhanced awareness is development of a one-hour, on-line class, available for DOC staff members as part of annual training. Curriculum is currently under development and the class is scheduled for roll-out in the spring of 2013.

DPA

Department of Personnel & Administration (DPA)



DPA provides centralized human resources, information, tools, resources and materials needed for Colorado state government to function.

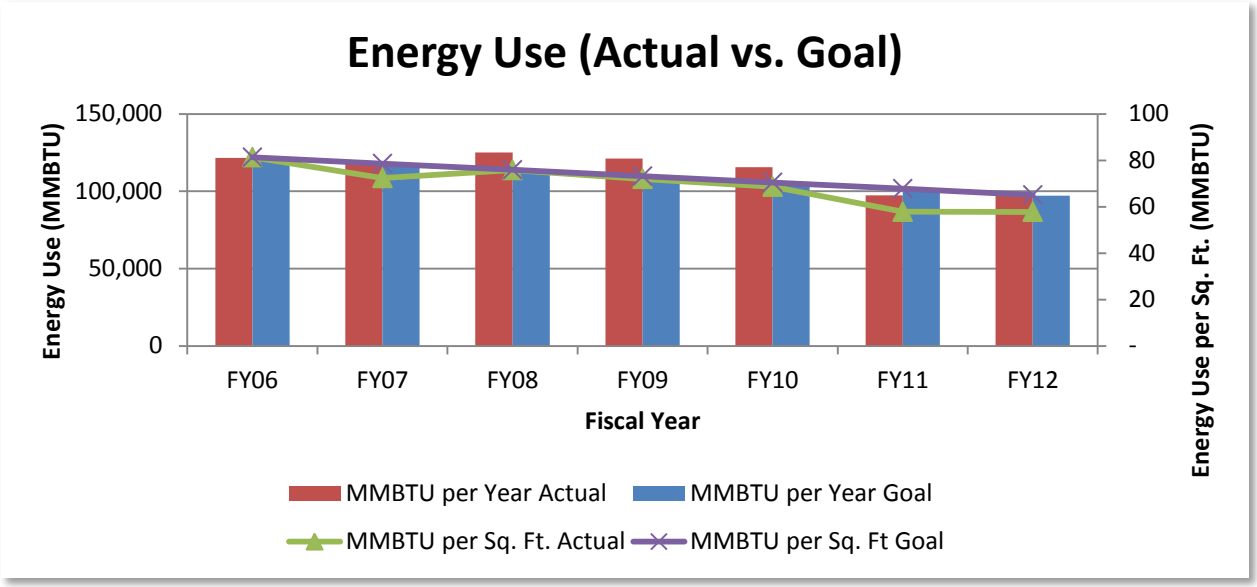
- **Total Sq. Ft. in FY2012:** 1,683,188
- **% Increase/(Decrease) in Sq. Ft Since FY'06:** 12.6%
- **Number Employees in FY2012:** 361
- **% Increase/(Decrease) in Employees Since FY'06:** (31.6%)
- **Number of LEED Certified Buildings:** 4

DPA performs a set of core functions that provide the infrastructure, processes, services, guidance, and tools necessary to eliminate redundancy in state government. Due to the nature of the Department's business, service to customers is the Department's driving force. The Department's customer base is three-fold; DPA serves state agencies, state employees, and the public. The Department believes success depends upon offering quality and value to customers and stakeholders by providing economically efficient and sound services, while adhering to the highest standards of integrity.

DPA has 33 active leases to 19 state agencies and departments for a total of 933,000 square feet.[1] In return, many state agencies benefit from DPA's green initiatives.

Energy Use

Between FY'06-FY'12, DPA has reduced their energy use by 20% or 24,283 MMBTU meeting the goals set out by the Executive Orders. More notably DPA has reduced their energy use per square foot by 29% or 23.55 MMBTU per square foot surpassing the goals laid out by the Executive Order.



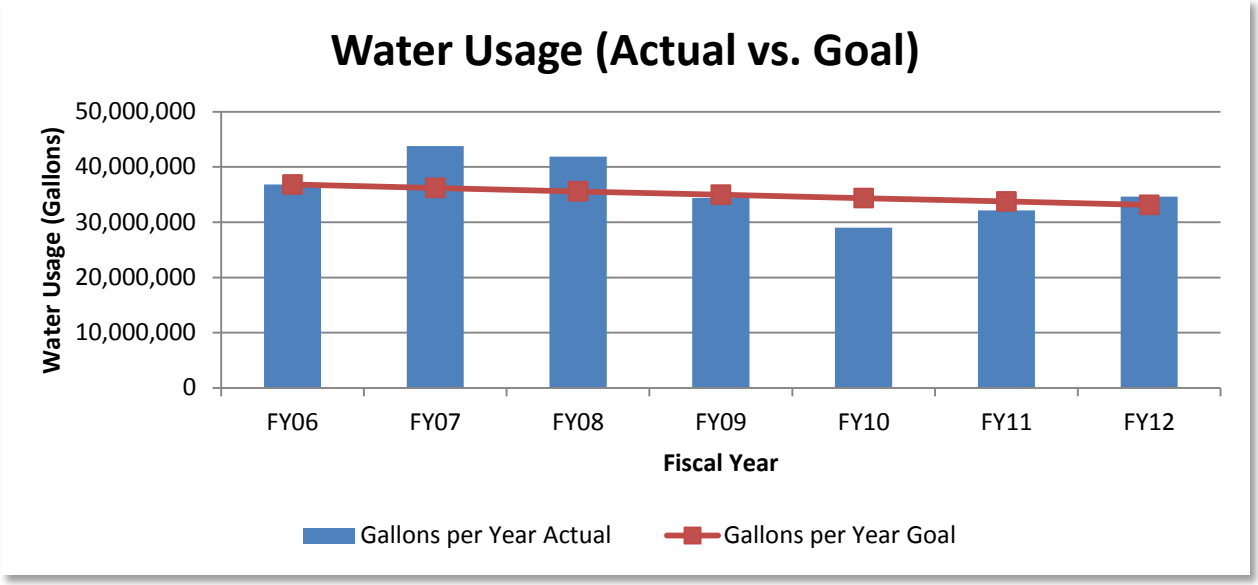
Starting in FY'04, DPA has participated in four phases on an EPC (see *Appendix C* for more information). The fourth phase is still in progress. The energy conservation measures taken include, but are not limited to, lighting upgrades, HVAC controls, insulation, LEED-EB certification, installation of PV and geo exchange systems, plumbing, chiller system upgrades and replacements. Together, all four phases are expected to save DPA approximately $1.76 million in utility savings annually.

Between FY'06-FY'12, DPA completed several renewable energy projects including one ground source heat pump system at the State of Colorado Governors Residence and 3 separate photovoltaic projects. A 100kW PV system, which produces about 134,500 kWh annually, was funded through energy savings and generates approximately one-third of 1881 Pierce Buildings electricity needs saving around $35,000 per year. In addition, the DPA installed a 10 KW system in 2009 on the State Capitol (pictured above). Moving forward the agency plans to finish a ground source project on the state capital building in FY'13.

[1] DPA leases to: Department. Healthcare Policy & Finance, Department Human Services, Department of Law, Department of Education, State Legislative Branch, Department of Revenue, Department Natural Resources, Department of Local Affairs, Department of Public Safety, Department of Agriculture, Governors Office of Information & Technology, Colorado Department of Transportation, Department of Health & Environment, Community College of Denver, and Department of Labor & Employment.

Water Use

Over the last 7 years, DPA has reduced their water use by 5.96% and 2,192,107 gallons.



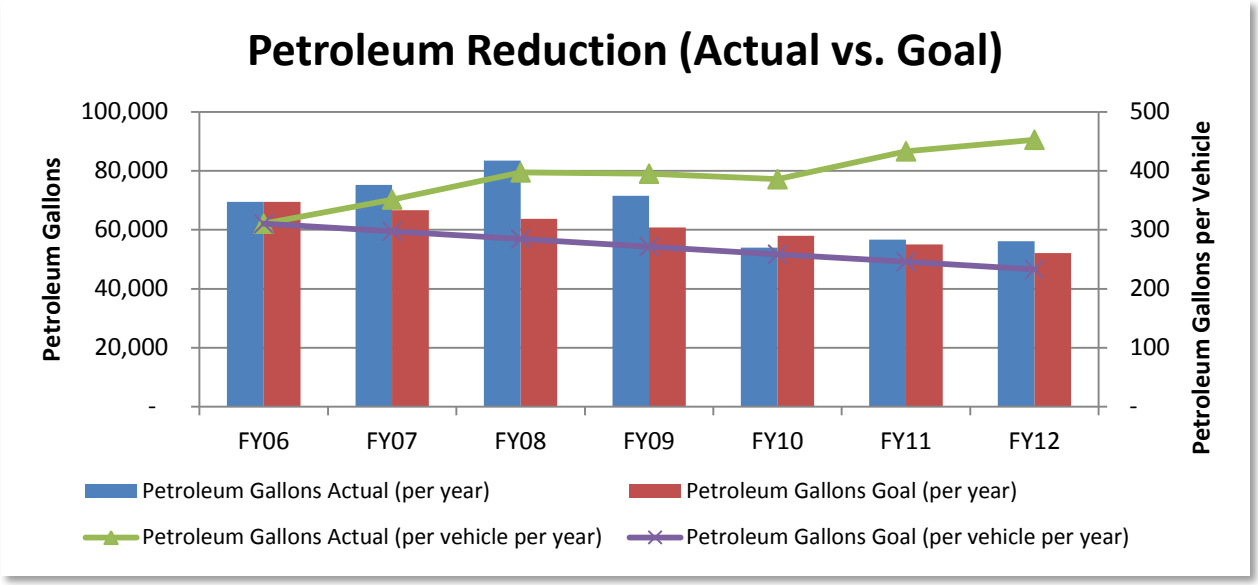
In FY'09, DPA upgraded fixtures, flush valves & faucets and the irrigation clocks leading to a larger reduction in FY'10. However, in FY'11 and FY'12 higher summer temperatures lead to higher water use to accommodate operational needs such as cooling towers and irrigation.

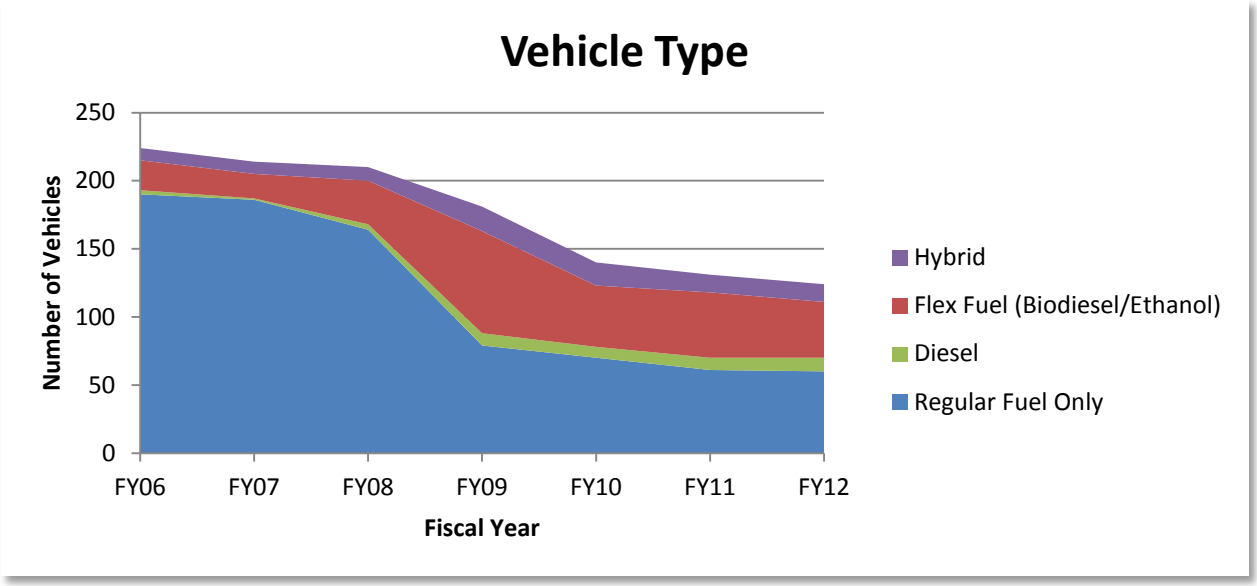
In FY'12, DPA took advantage of free water audits given by Denver Water. The audit identified a couple of small leaks that were repaired right away and DPA made operational changes so cooling towers run shorter periods of time using less water. In return, DPA expects to see

Petroleum Use

Between FY'06-FY'12, DPA has reduced their petroleum use by 19.3% or 13,396 gallons annually.

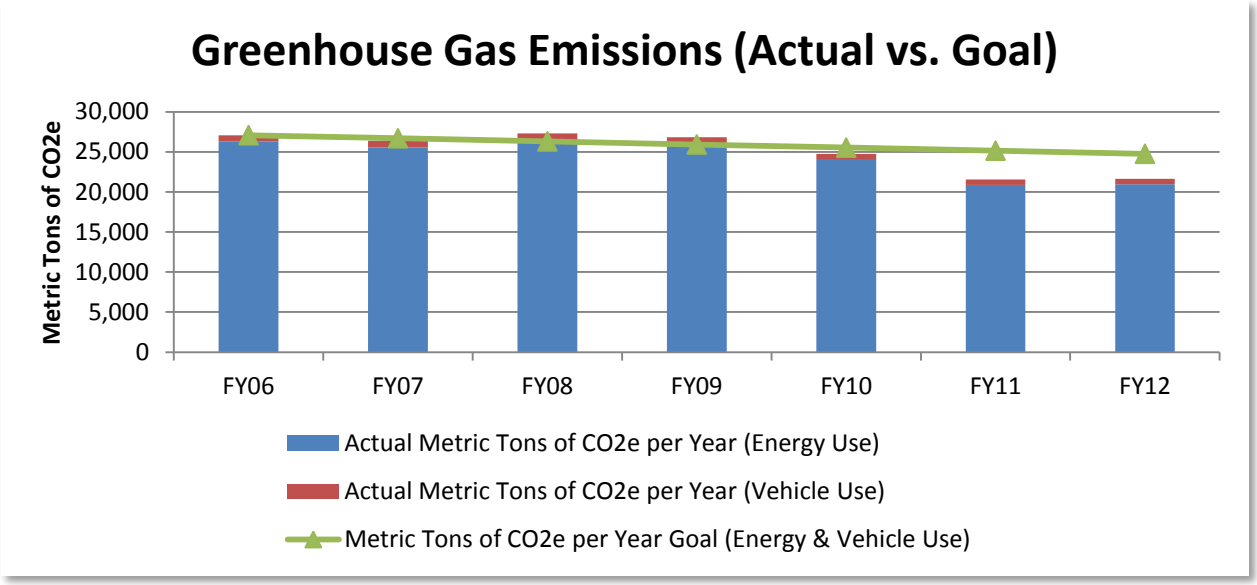
DPA has experienced significant vehicle inventory fluctuations due to having turned-in, surplus vehicles added to their inventory for brief periods when auction and reassignment evaluations are being determined. These vehicle inventory fluctuations do not contribute significant impact of the petroleum consumption volumes to the department.





Greenhouse Gas Emissions

Between FY'06-FY'12, DPA has reduced their GHG emissions by 20% surpassing the 20% reduction goal set for FY20. Of the 5,453 metric tons of CO2e reduced, 5,348 tons metric tons came from energy use with the remaining 105 metric tons coming from petroleum use reduction.



Procurement

In 2006, DPA reported 186 tons of paper recycled. In FY'08, DPA began providing commingled recycling on-site enabling non-paper products such as plastic to be recycled leading to a large increase in recycling. In FY'12, DPA reported a total of 200.7 tons of commingled recycling.

DPA houses the State Purchasing Office (SPO) which took the lead on writing the first Environmentally Preferable Purchasing Policy (EPP) for the state. SPO updates the EPP document on an as-needed basis and includes many sustainably focused initiatives into state wide solicitations. A huge success was building a life-cycle cost analysis into the vehicle procurement requirements. This helped enable the purchase of hybrids and flex fuel vehicles which sometimes have a higher upfront cost but lower life-cycle costs due to efficiencies and fuel costs. In FY'12, SPO worked with the State fleet to incorporate a larger mix of fuel efficient and hybrid vehicle in the price agreements enabling all agencies more options in their fleet.

Internal DPA procurement successes include encouraging suppliers and contractors to offer green products and practices while working within the Capital Complex, and ensure construction contractors are following LEED certified construction guidelines in their LEED Certified buildings. DPA has also seen overall reductions in paper use due to their double-sided printing policy.

In addition to their primary role creating and managing statewide price agreements that include and promote sustainable products and practices, the SPO has partnered with CEO programs to provide solicitation support and guidance to initiatives that reduce environmental impacts. Among these, SPO led solicitations: establishing the Energy Cap tool, updates to the High Efficiency Buildings and Energy Performance Contracting programs, upgrades to the Weatherization program software, and statewide public outreach to promote current International Energy Conservation Code requirements. Most recently, SPO participated in the solicitation in support of the multi-state MOU encouraging the wider manufacture and use of CNG Vehicles.

Employee Engagement

The SPO has actively promoted sustainability since the EPP Policy was created in response to Executive Orders. This has included numerous outreach activities since 2008 including networking with statewide purchasing personnel and collecting and sharing green purchasing information resources.

CDHS

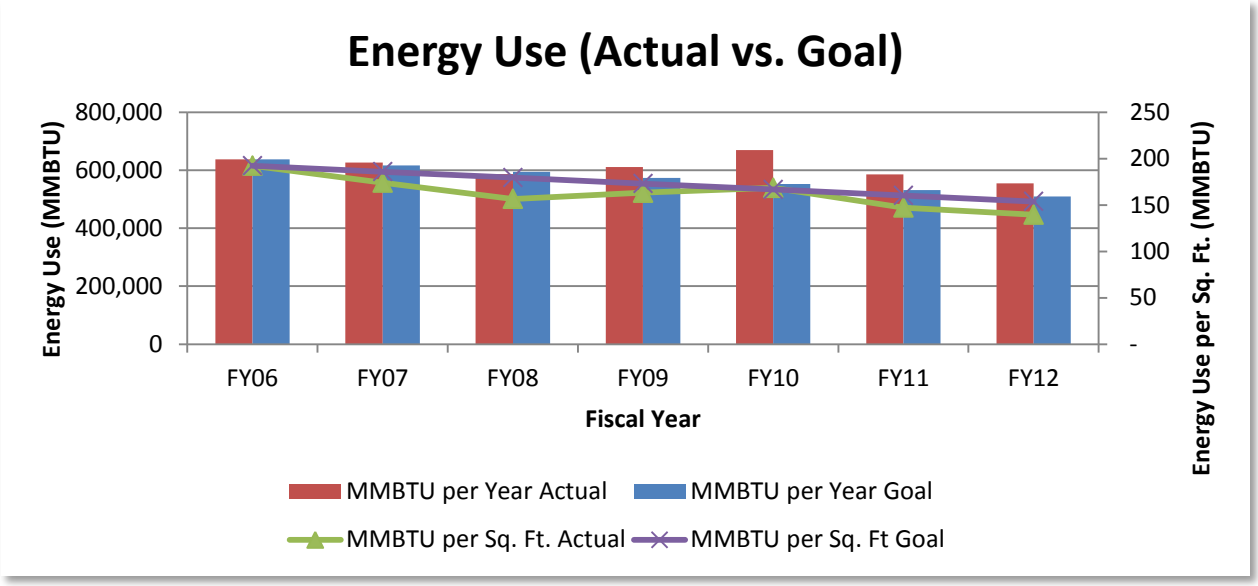
Department of Human Services (CDHS)

CDHS serves Colorado's most vulnerable populations; more than 3,500 department staff work in shifts providing care and supervision 24 hours a day, seven days a week. CDHS is the third largest agency in Colorado State government, with more than 5,000 employees and a budget of $2.2 billion for FY'11. CDHS oversees the state's 64 county departments of social/human services in their administration of public assistance and child welfare programs; the state's public mental health system including the operation of the State's two mental health institutes at Fort Logan and Pueblo, as well as licensing of mental health treatment programs; Colorado's system for people with developmental disabilities, including the operation of the State's three regional centers and the oversight of community centered boards; the state's juvenile corrections system, including the operations of state facilities, the supervision of privately operated programs and all Senate Bill 94 programs; and the operation of all state veterans nursing homes. In addition, CDHS is the state agency designated for vocational rehabilitation programs and senior services.

- **Total Sq. Ft. in FY2012:** 3,978,791
- **% Increase/(Decrease) in Sq. Ft Since FY'06:** 20%
- **Number Employees in FY2012:** 5,046
- **% Increase/(Decrease) in Employees Since FY'06:** (5%)
- **Number of LEED Certified Buildings:** 1 certified project with 24 certified buildings (each building 2 certifications)

Energy Use

Between FY'06-FY'12, CDHS has reduced their energy use by 12.9% or 82,075 MMBTU falling short of the 20% reduction goal. However, CDHS experienced a 20% increase in square footage during that time. Therefore, they have made a notable 27.44% reduction of their energy use per square foot (52.77 BTU per square foot).

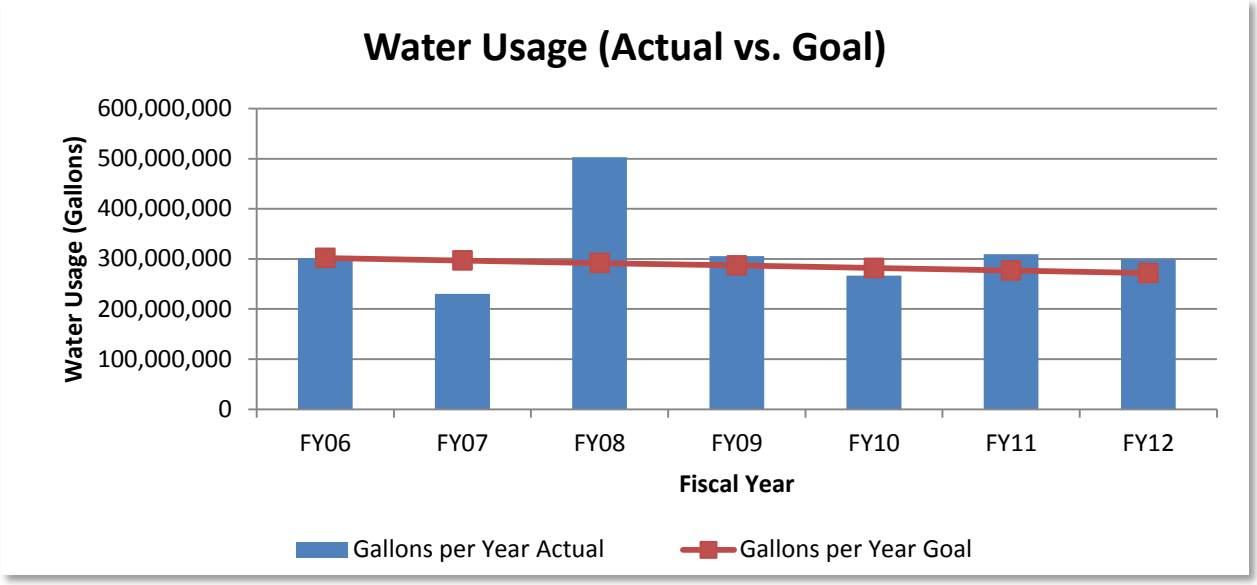


CDHS effectively manages utilities to produce positive energy and environmental conservation results while achieving rates of return that meet CDHS's financial goals that fund all CDHS's improvement measures. In 2003, CDHS initiated a four phase $27,038,804 energy performance contract that concluded in 2012. Measurement and verification engineering has been completed on three of the four phases certifying that savings targets have been achieved which in turn pays the debt service, phase IV starts in 2013. In addition to facility retrofits CDHS also control CDHS's facilities statewide with a $13 million dollar

building automation system that monitors and controls utility usage 24/7. Monitoring energy, paying utilities and reporting is accomplished using the States Energy Cap Utility database.

Water Use

Over the last 7 years, CDHS water use has decreased by 1% (2,867,947 gallons).

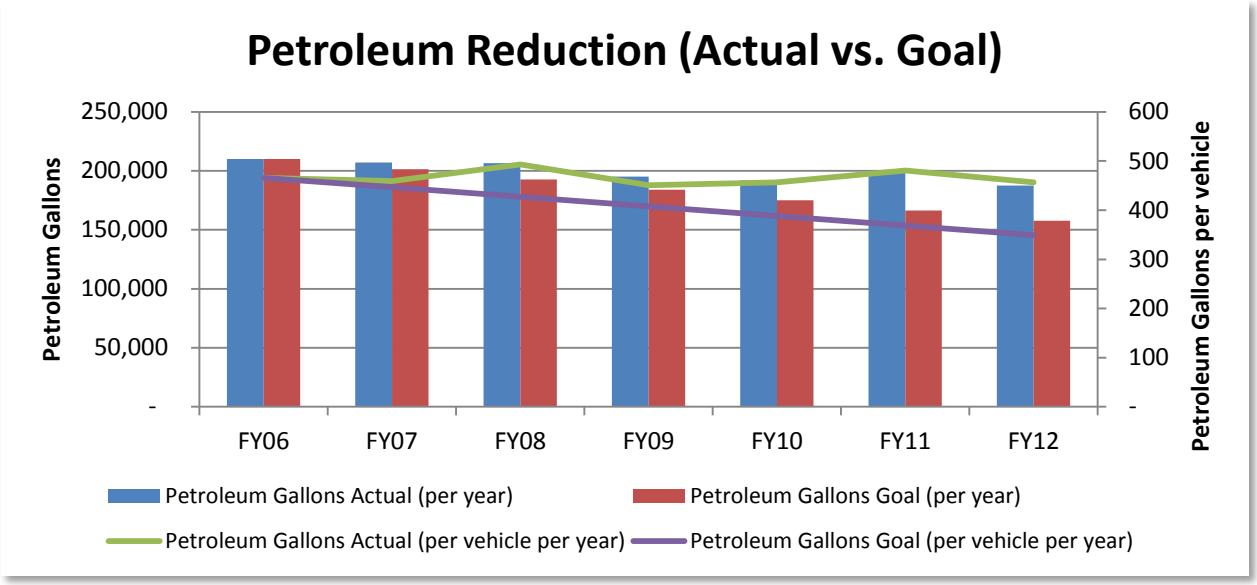


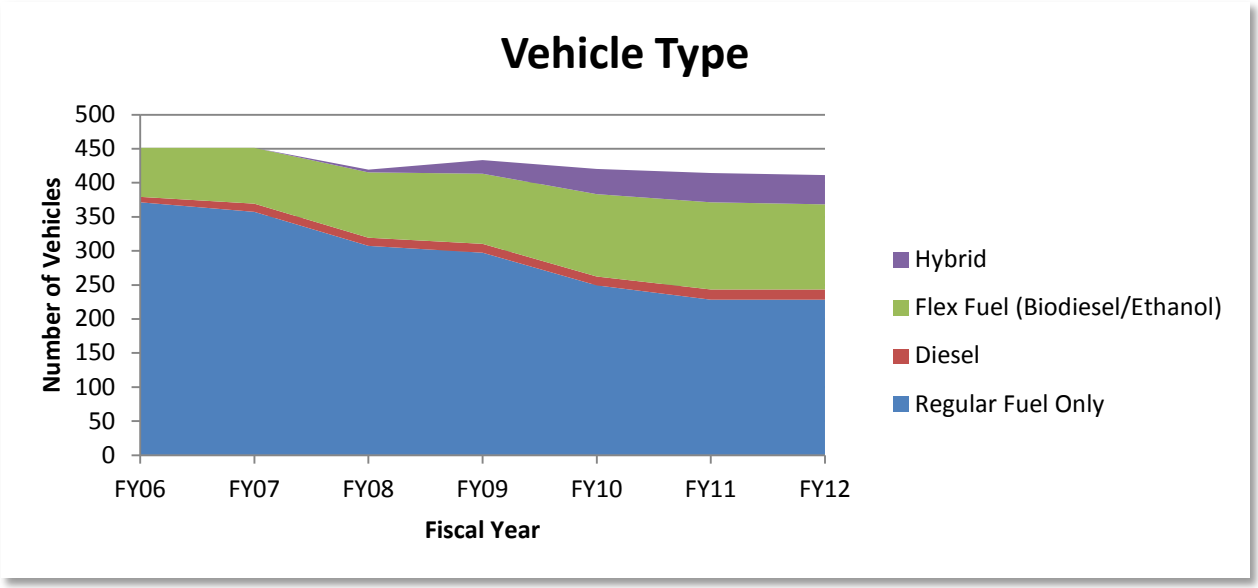
CDHS's water conservation objective is to identify and analyze the water usage of CDHS facilities and to identify facility improvement measures (FIMS) that reduce water consumption, processing and cost through capital improvements. Examples of some conservation measures that CDHS implemented include low flow toilets, showers and aerators, ozone for laundries, cooling tower controls, boiler makeup and computerized irrigation control systems. Included with this program is the utilization of non -potable water rights to reduce irrigation costs.

Water is a critical utility that is needed for client services in CDHS's hospitals, youth detention centers and group homes. It has been a challenge balancing the needs of CDHS's clients with conservation efforts. An example of increased water consumption that was outside the normal operations happened in FY'08 when water was used for the mitigation of dust during the construction and intensive irrigation to establish grassy areas of the High Security Forensic Facility at the Colorado Mental Health Institute in Pueblo. The water used for dust mitigation and irrigation doubled CDHS's usage and cost for that year.

Petroleum Use

Between FY'06-FY'12, CDHS has reduced their petroleum use by 11% or 22,573 gallons annually and a decrease in their fleet of 9%.



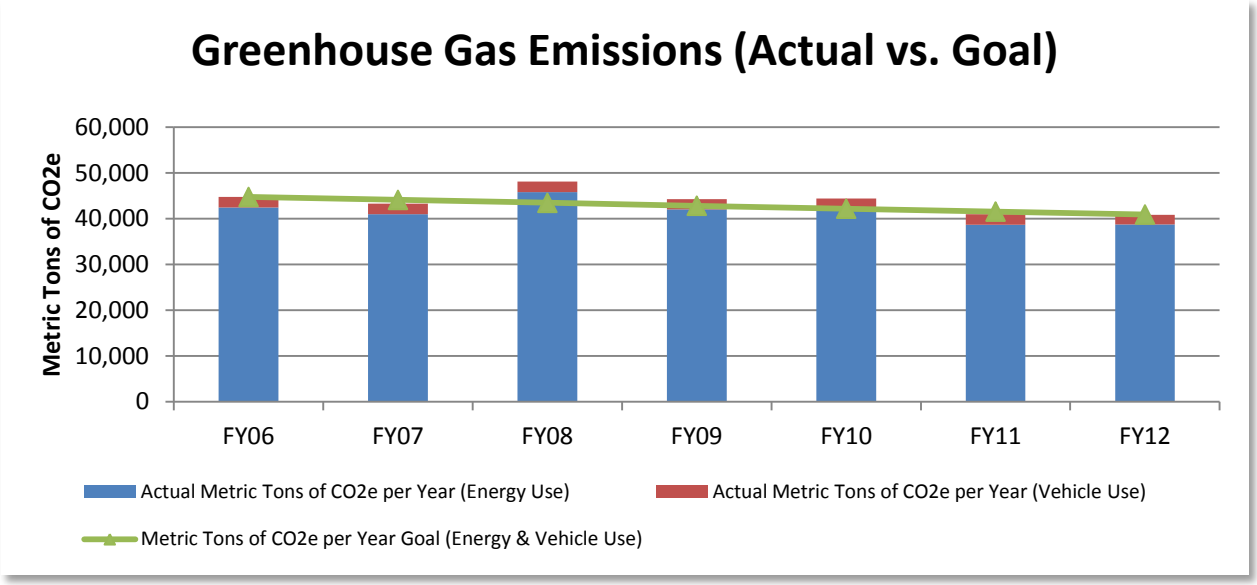


CDHS has encouraged replacement vehicles to be either Flex-Fuel or Hybrid models wherever practical, but the makeup of the CDHS Fleet has been relatively unchanged since FY'10 because CDHS was not funded for any replacement vehicles in 2011 and 2012. There are currently a total of 43 hybrid and 126 Flex-Fuel vehicles in the CDHS Fleet contributing to its overall average MPG of 17.3. Current vehicle total is 465 (including exempt vehicles).

The Vehicle Scheduling System (VSS) pilot project undertaken with a grant from the Colorado Energy Office has been able to identify some savings to the department when there is more than a single user of a department vehicle. The original objective of the project is to get employees to use the scheduling system to identify and take advantage of car-pooling opportunities with state vehicles. The system allows CDHS to report savings of petroleum and greenhouse gas emissions avoided with multi-passenger trips.

Greenhouse Gas Emissions

Between FY'06-FY'12, CDHS has reduced their GHG emissions by 8.7%. Of the 3,913 metric tons of CO2e reduced, 3,709 tons metric tons came from energy use with the remaining 204 metric tons coming from petroleum use reduction.



Procurement

The Waste and Recycling Program includes, but is not limited to, electronic media, paper management, office equipment consumption and management, CAD, scanning technologies, electronic storage technologies, centralized web access to information, electronic newsletter, recycling programs (including paper, aluminum, plastic, glass, electronics, cardboard, wood, construction materials such as steel or concrete, food/biofuels, fuel oil, medical waste, toner/ ink cartridges, furniture, carpets, chemicals, etc.), scanning of bills and documents, and teleconferencing meetings.

Employee Engagement (highlight green team, events, etc)

The CDHS has members associated with the following organizations:

- Members on the Colorado Energy Office board
- Members on the US Green Building Council
- Certified Energy Manager – National Association of Energy Engineers
- Member of the Rocky Mountain Association of Energy Engineers
- LEED Certified personnel
- Yearly Tree Planting – Earth Day Celebration Activities
- Various Ditch Water Boards
- Fort Logan Conservation Committee
- Grant Writing Team – Federal, State, Utility Companies

DMVA

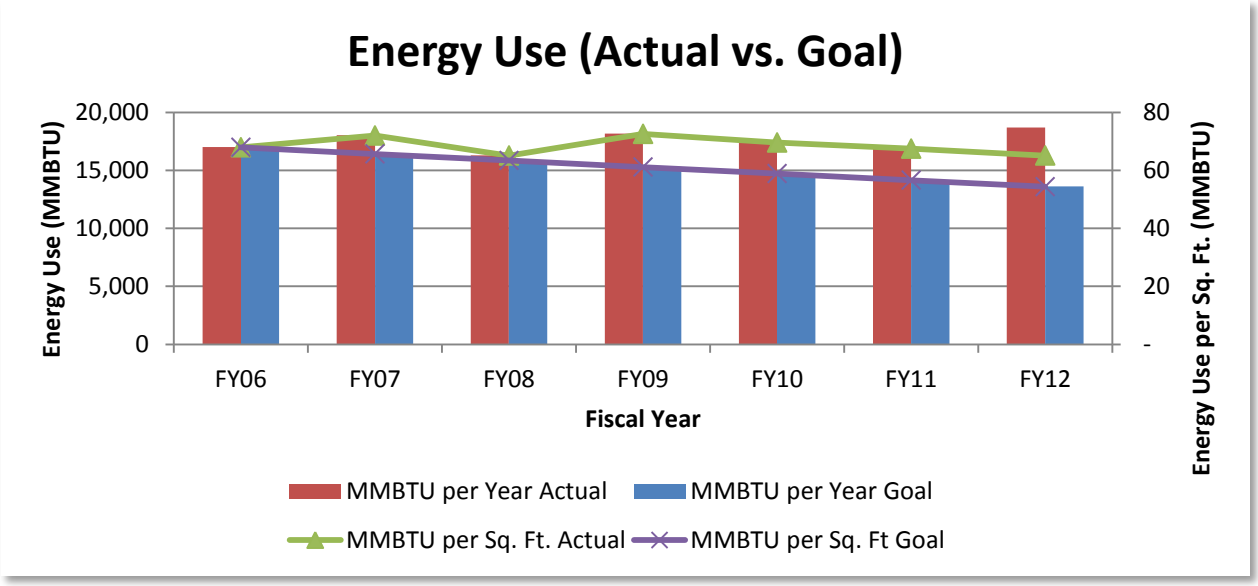
Department of Military and Veteran Affairs (DMVA)

The Department of Military and Veterans Affairs supports the Colorado Army National Guard soldiers' mission and preparation for federal missions and civil service. There are facilities throughout the state of Colorado which are utilized by soldiers to aid in their training and preparation for the mission that lies ahead. These buildings also serve as shelter to those in need following a natural disaster or any catastrophe. DMVA sustains, maintains and restores these facilities to ensure there is no compromise to the training or the mission.

- **Total State Funded Sq. Ft. in FY2012:** 287,077
- **% Increase/(Decrease) in Sq. Ft Since FY'06:** 14.6%
- **Number Employees in FY2012:** 145
- **% Increase/(Decrease) in Employees Since FY'06:** 21.9%
- **# of LEED Certified Buildings:** 2 Certified, 3 In Construction

Energy Use

Between FY'06-FY'12, DMVA has increased their energy use by 9.8% or 1,671 MMBTU/annually, while experiencing a 14.6% increase in square footage during that time. They have reduced their energy per square foot by 4.2% or 2.82 MMBTU per square foot.[2]



Numerous enhancements have been made to facilities so they may be identified as a High Performance Building. For example, improvements to heating, ventilation and air conditioning systems over the years have reduced the amount of energy being consumed at each DMVA facility. Systems have either been replaced completely or upgraded along with adding Building Automation System control points to monitor any overuse or malfunctions in the system. In effect, this optimizes performance while ensuring energy saving trends. In 2002, DMVA implemented a 4 day work week (10 hours/day) which reduces the amount of energy used during the standard 5 days. An increase in energy has been reflective upon the increase in the need for computers over the last several years. Measures have not been taken to reduce the amount of energy being consumed by electronics throughout the DMVA (i.e. computers and monitors are left on

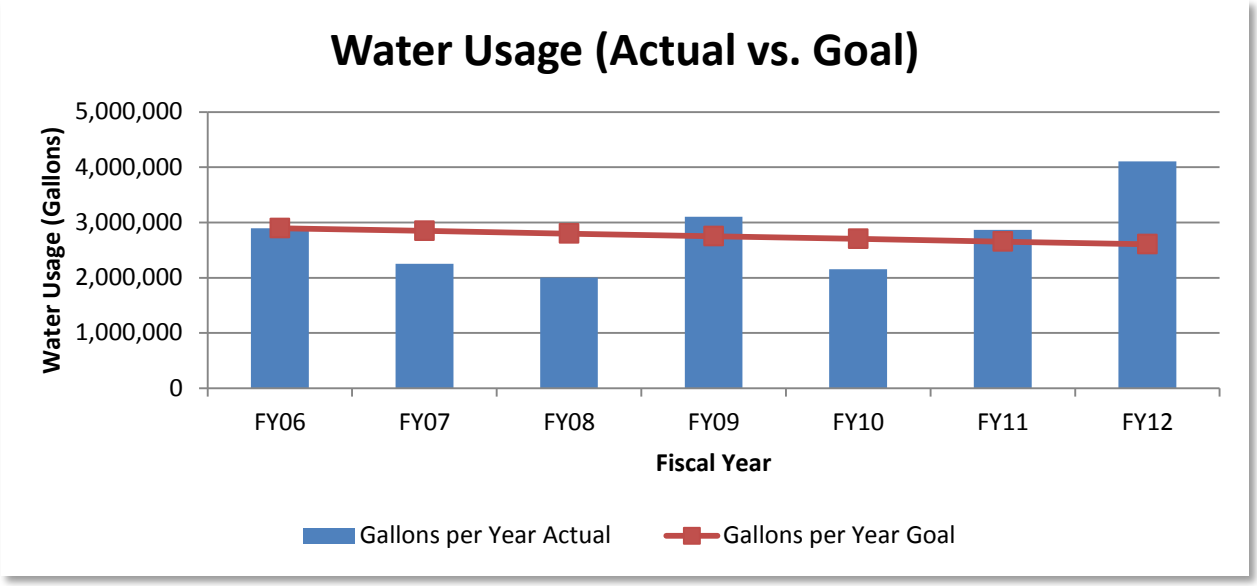
[2] Note that the DMVA reports only the energy use that is charged to the state not their entire energy use. For example, several of their buildings are funded 50% by the state, 50% by the Feds. Therefore, they report half of the total energy use in those buildings. Additionally, there are buildings which are 25% state and 75% federally funded.

overnight). To support network functionality, an extensive amount of cooling is added to areas where there is a large amount of heat being radiated by the servers that are essential to the network. An increase in the amount of employees by 21.9% in the DMVA has also led to an increase in the demand for thermal comfort which affects the amount of energy being used to satisfy user needs.

DMVA has been a big proponent of renewable energy. Ground source heat pumps have been installed at two newly constructed DMVA buildings in the last year, and PV systems are in place at two facilities with three others being constructed with installed infrastructure to accommodate PV in the future.

Water Use

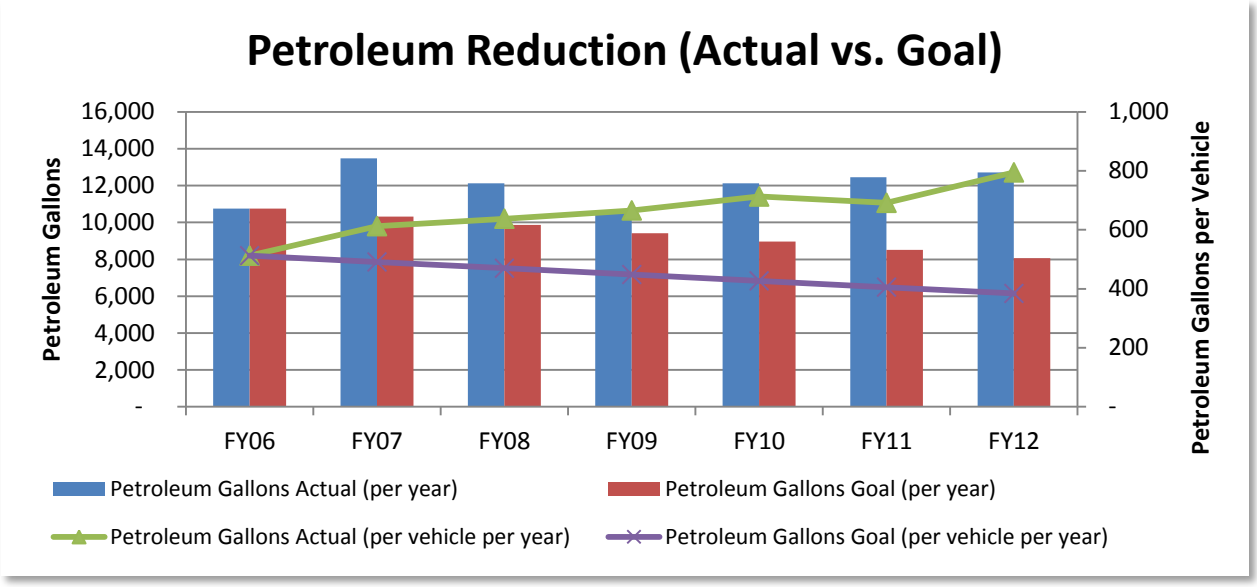
Over the last 7 years, DMVA water use has increased by 42% (1,209,000 gallons).

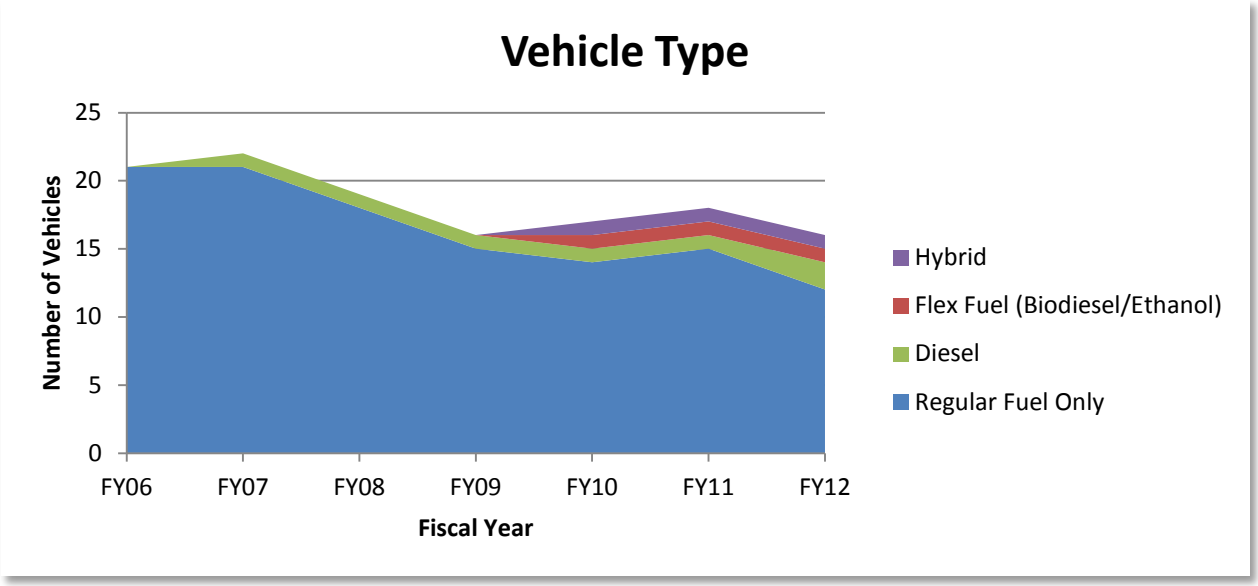


Spray irrigation has been the primary cause behind the increase in water usage during FY'09 and FY'12. It can be seen from the degree days during the months of June, July and August that the figures are significantly above the average trend. This implies that much more water than usual was used to irrigate the landscape. In the future, DMVA is planning to replace the irrigation heads with low flow heads or xeriscape to reduce this summer demand. Currently, there are several plans in place to reduce the water use inside DMVA facilities including retrofitting all plumbing fixtures with low-flow devices. This has begun to take place at the Denver Armory where urinals and lavatory faucets are being replaced with high efficiency fixtures.

Petroleum Use

Between FY'06-FY'12, DMVA has increased their petroleum use by 18% or 1,955 gallons annually, while experiencing a decrease in their fleet of 24%.

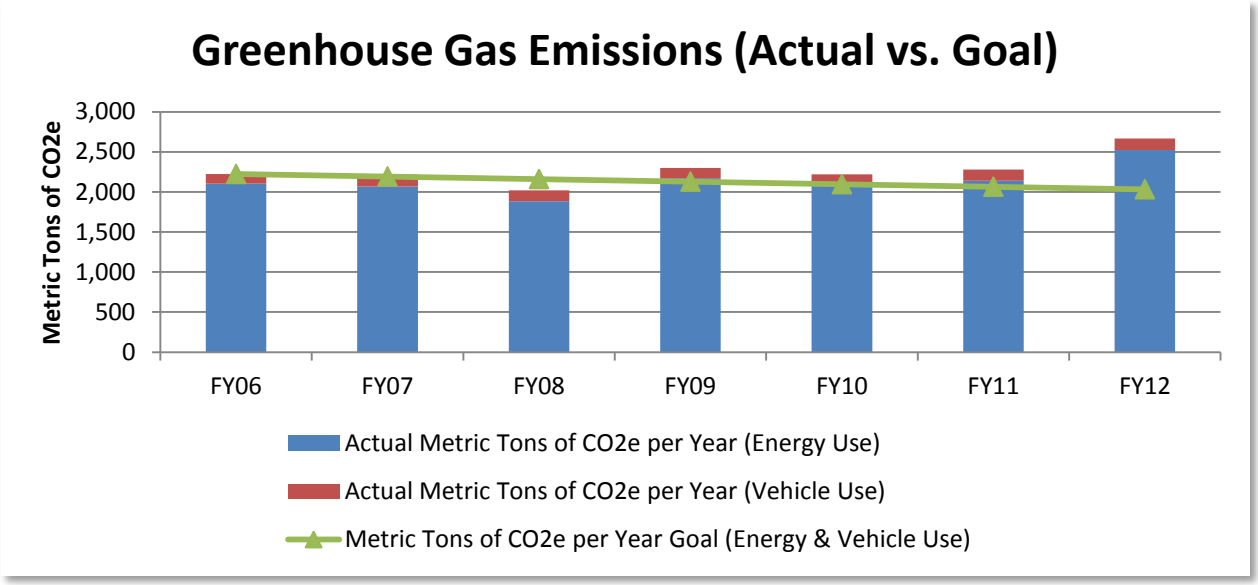




Due to several different military construction projects occurring in DMVA, vehicles have been used to travel frequently to the construction sites to coordinate with the contractor and subcontractors for a successful and timely completion of the project. In addition, there have been additional meetings and inspections that have taken place post construction that require additional travel. These newly constructed facilities are located outside of the Denver Metro Area which also affects the amount of fuel being used to travel to these sites. Carpooling has begun to take effect at several different facilities to minimize the amount of vehicles driven at great distances.

Greenhouse Gas Emissions

Between FY'06-FY'12, DMVA has increased their GHG emissions by 19.9%. Of the 441 metric tons of CO2e increased, 419 tons metric tons came from energy use with the remaining 22 metric tons coming from petroleum use increase.



Procurement

Paper use has been reduced throughout the DMVA due to the initiatives set in place which promote double sided printing and the use of electronic documents. Single stream recycling bins have been placed throughout all pertinent areas in a majority of DMVA buildings, and a full implementation is scheduled to take place in early FY13.

Employee Engagement

The Energy and Water Awareness Program (EWAP) and the Solid Waste Reduction and Recycling Program (SWRRP) are essential to successful employee engagement and reduction. Through EWAP and SWRRP, building users will be educated and informed on energy and water conservation along with appropriately disposing of waste. Users will be required to attend an annual training and take a quiz at the end of the training to ensure comprehension and understanding. To enhance the effects of the program, users will be able to view the progress of their respective building by accessing an online dashboard which will contain normalized (by square foot) consumption data. Buildings which have reduced the most will be rewarded with gifts such as t-shirts and mugs.

CBTL

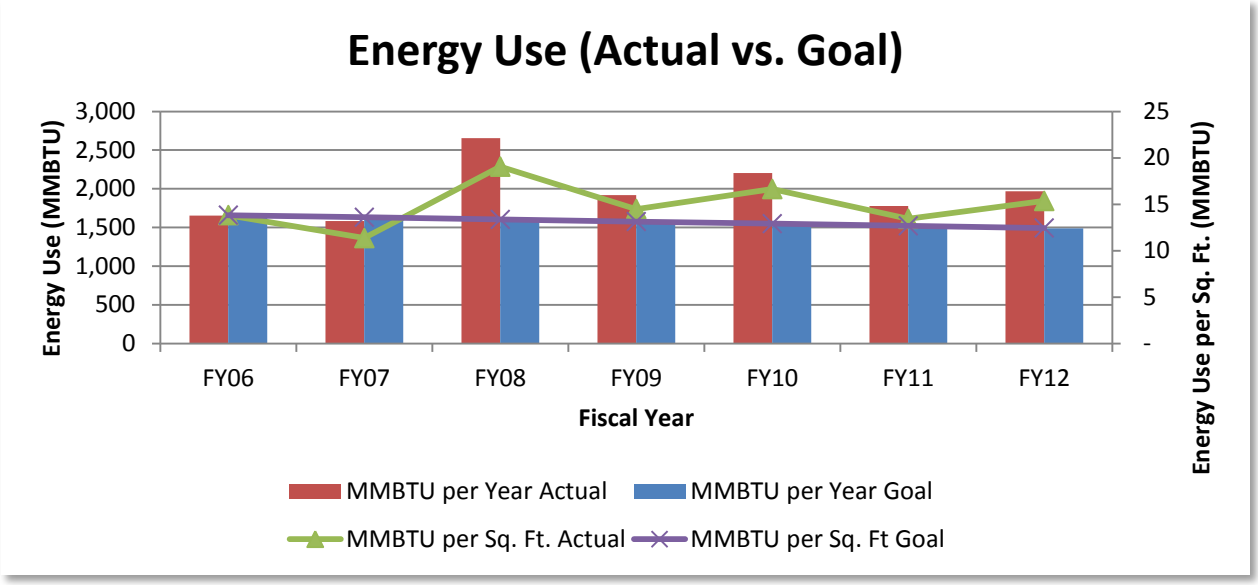
Department of Revenue (DOR)

The mission of the DOR is to "provide exceptional service in an effective, innovative and fair manner that instills public confidence while fulfilling duties to collect revenues, license qualified persons and enforce the laws of Colorado".

- **Total Sq. Ft. in FY2012:** 128,102
- **% Increase/(Decrease) in Sq. Ft Since FY'06:** 7%
- **Number Employees in FY2012:** 1,412
- **% Increase/(Decrease) in Employees Since FY'06:** (2%)
- **Number of LEED Certified Buildings:** 0

Energy Use

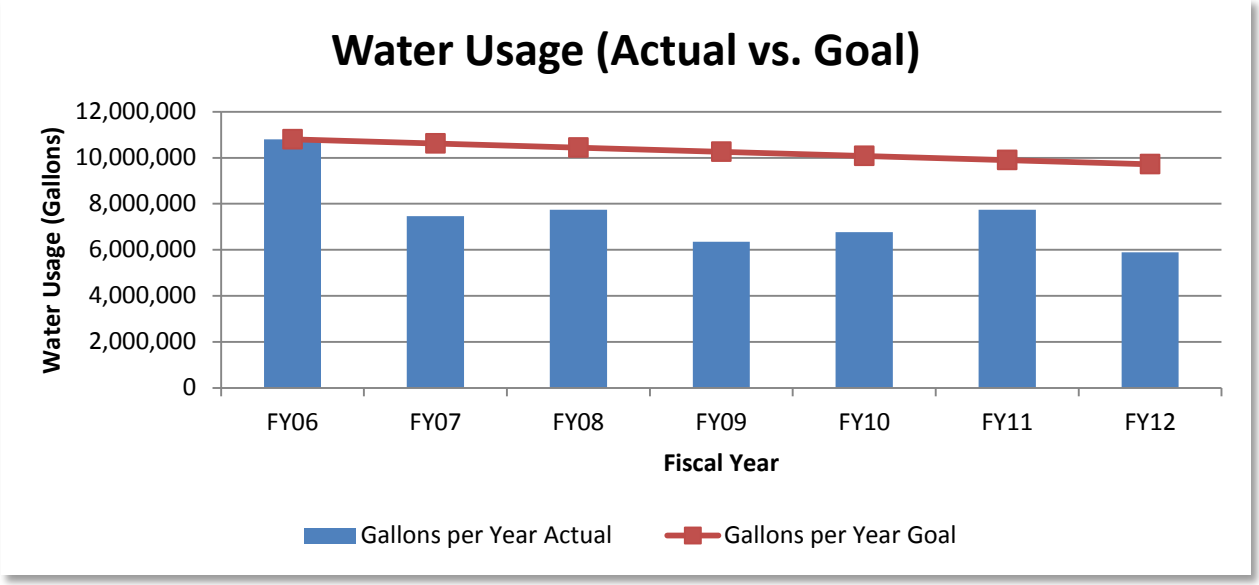
The Department of Revenue leases the majority of their office space from DPA, but during FY'12 managed the Port of Entries throughout the State.[3] Between FY'06-FY'12, DOR has increased their energy use by 19% or 315 MMBTU.



[3] In FY'13 the Port of Entries space will be moved under DPA and DOR will no longer own any property.

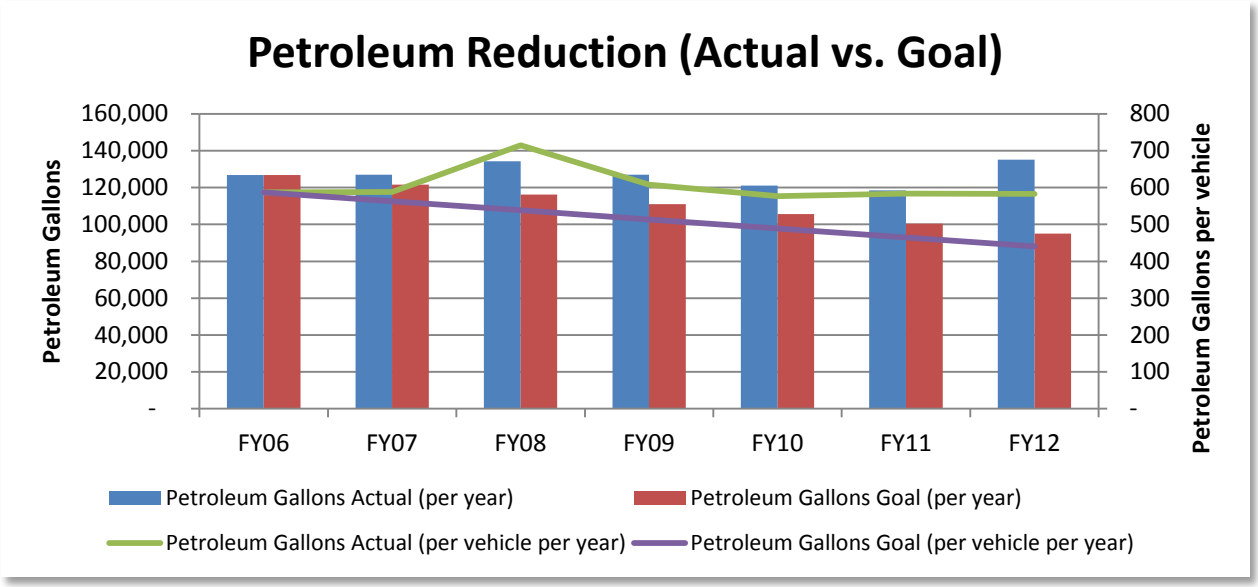
Water Use

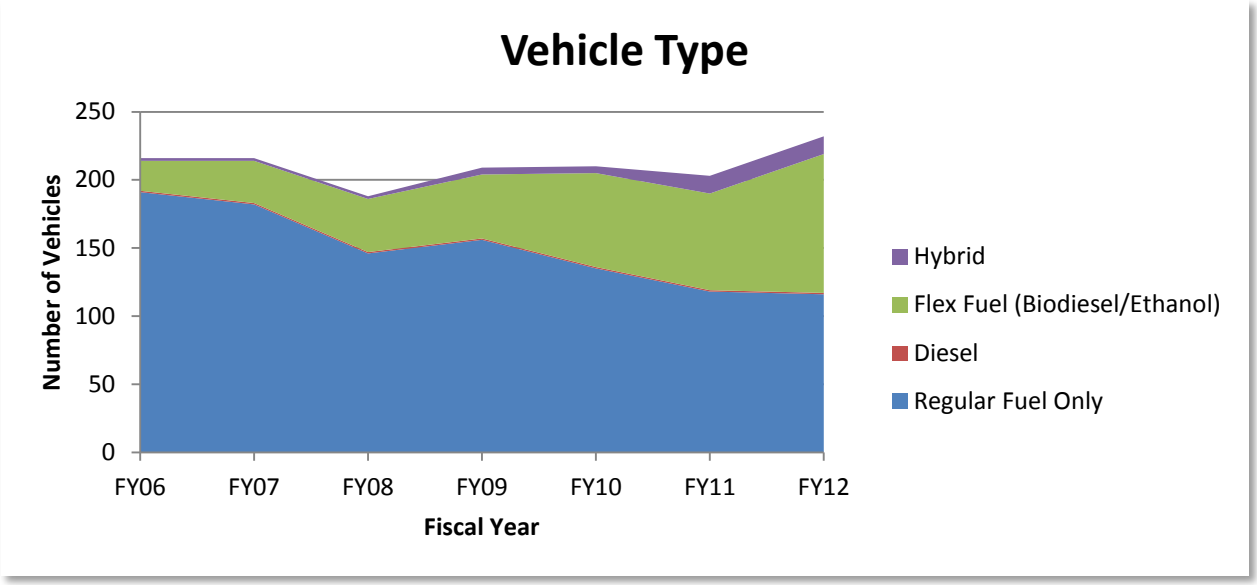
Over the last 7 years, DOR water use has decreased by 4,910,850 gallons or 45%.



Petroleum Use

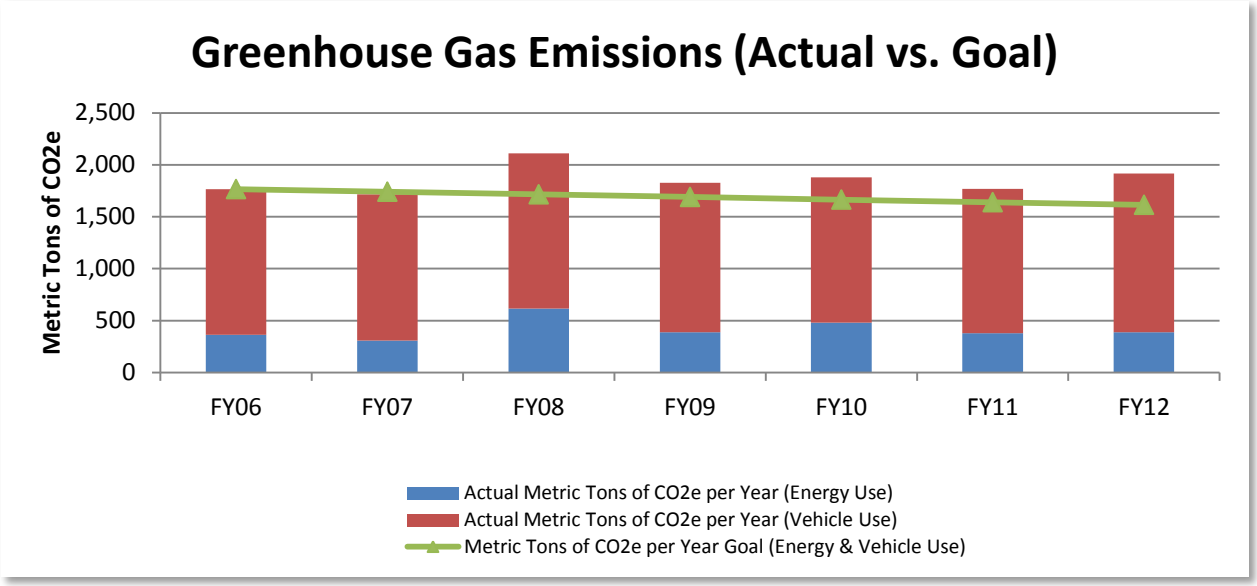
Between FY'06-FY'12, DOR has increased their petroleum use by 6.6% or 8,367 gallons annually. Much of this increase can be attributed to the 7% increase in vehicles in their fleet.





Greenhouse Gas Emissions

Between FY'06-FY'12, DOR has increased their GHG emissions by 8.5% (149 metric tons of CO2e). The majority of this increase can be attributed to their increase in petroleum use.



Procurement

In FY'11 DOR stopped using fine paper and began using 30% recycled copy paper in their print room and in the annex offices (~ 4,800,000 recycled sheets a year). In FY'12 DOR's forms department put their contracts for specialized perforated paper out to bid to include recycled paper. Instead of ordering 7,205,482 sheets of fine paper they ordered that amount in recycled paper. Lastly in FY'12, DOR did not print and mail out 386,466 income booklets saving lots of paper.

In FY'12, DOR recycled old phone books and 121,015 obsolete tax forms. DOR has also actively participated in the Terracycle campaign recycling pens – all proceeds are donated to the United Way Campaign.

Employee Engagement

DOR implemented an awareness campaign by placing signage on the bulletin boards of each floor and in the cafeteria. The signage addressed solar panel discounts and cartridge recycling (DOR recycled over 320 cartridges last year). DOR placed flyers that addressed environmental issues and solutions in the cafeteria during earth day week to create awareness.

HISTORY COLORADO

History Colorado

- **Total Sq. Ft. in FY2012:** 425,413
- **% Increase/(Decrease) in Sq. Ft Since FY'06:** 153%
- **Number Employees in FY2012:** 136
- **% Increase/(Decrease) in Employees Since FY'06:** 12%
- **Number of LEED Certified Buildings:** 1 awaiting review

Established in 1879, History Colorado is a 501(c)(3) charitable organization and an agency of the State of Colorado under the Department of Higher Education. We offer public access to cultural and heritage resources of Colorado, including statewide museums and special programs for individuals and families, collection stewardship of Colorado's historic treasures, educational resources for schools, students and teachers, services related to preservation, archaeology and history, and the Stephen H. Hart Research Library.

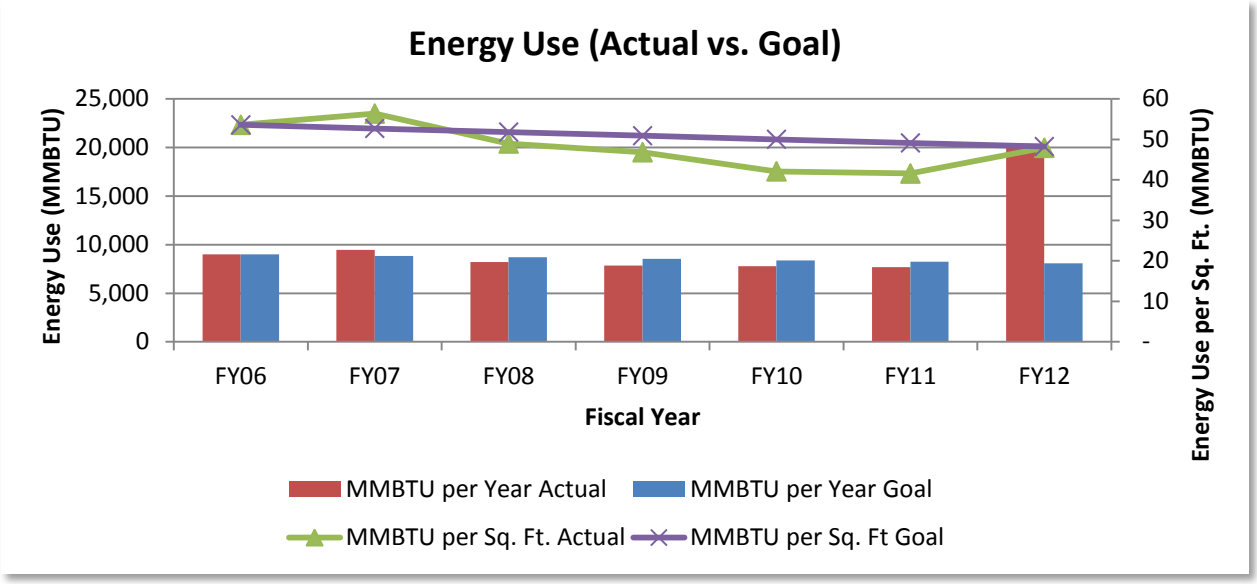
History Colorado's statewide activities support tourism, historic preservation, education and research related to Colorado's rich western history, offering the public unique opportunities to interact with Colorado history through its network of museums which offer engaging exhibitions and special programs for adults and children.

Through History Colorado education programs, History Colorado work with schools across the state to provide classrooms and teachers with important resources and curriculum related to Colorado history, and offers local communities resources that help them to enrich historical-related community based programs. Through the State Historical Fund historic preservation grants program, History Colorado has awarded millions in competitive grants to all 64 counties across Colorado, which has resulted in a more than $1.5 billion impact on Colorado's economy.

As the State Historic Preservation Office, the Office of Archaeology and Historic Preservation handles the processing and documenting of statewide archaeological and historic preservation related projects.

Energy Use

Between FY'06-FY'12, History Colorado's energy use has increased by 127% or 11,388 MMBTU. Before FY'12, History Colorado had made notable reductions (14.6% reduction between FY'06-FY'11). However, History Colorado experienced a 153% increase in square footage during that time. If you look at energy use per square foot History Colorado has reduced their energy use per square foot by 10.58% or 5.67 MMBTU per square foot meeting the 10% reduction goal laid out for them in the Executive Order.



Between 2010 and 2011, History Colorado moved its headquarters to the History Colorado Center. Prior to FY'12, utilities were paid by the Judicial Department who shared the old building. Hence, in FY'12 energy use jumped as they began managing the new 190,000 square foot facility. The agency also purchased a 50,000 square foot storage facility during this period. The new History Colorado Center is anticipated to be LEED Gold certified. It will be one of the only State-owned museums with this status in the country. As part of LEED certification, the agency is completing a "green trail" which teaches visitors about the sustainable features in the building. Some green attributes at the new building include:

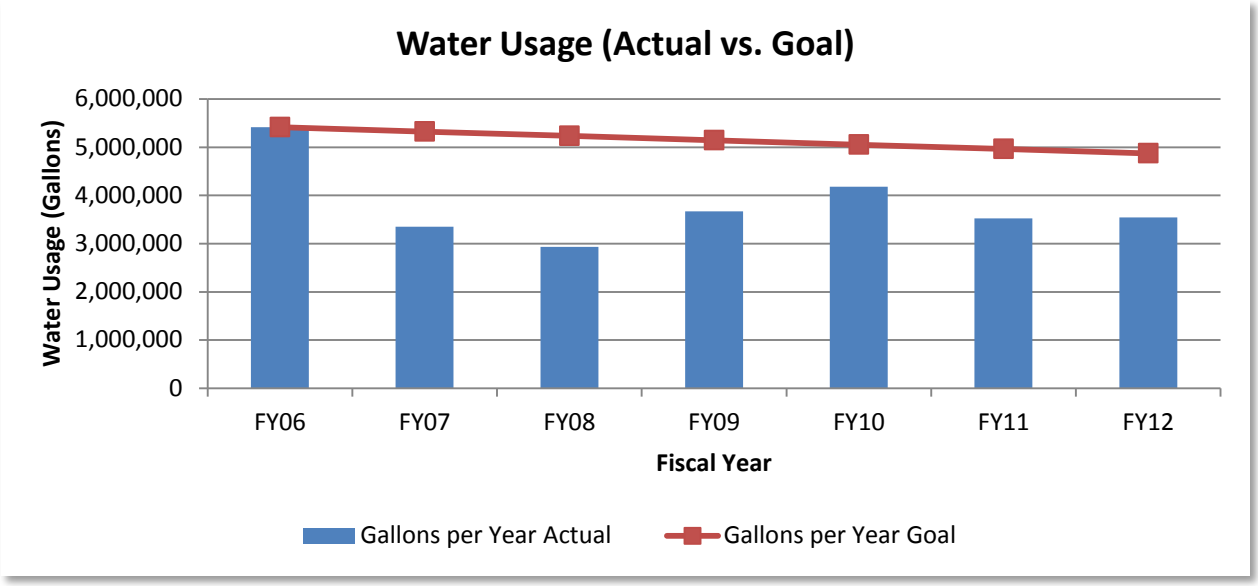
- Sustainable Features of the design and location of the History Colorado Center: 21.8% Vegetated open space, 684 bus stops from 5 bus routes within a 1/4 mile walking distance, 28 bike spaces for employees and visitors, and in close proximity (1/2 mile) to basic services (i.e. restaurants, library, post office, etc.)
- Energy and Atmosphere Controls: Exterior Wall R-Value (thermal resistance), Glazing U-Value (heat transfer), Interior and Exterior shading devices, efficient HVAC System, Lighting System and daylight controls, Roof Construction, Water Heater Efficiency, and Extensive lighting control system with occupancy sensors and daylight sensors. And time clock that controls lights to be turned off based on operation hours.

There were many things that were done during the construction process to reduce the impact. For example, 84.59% of construction waste was recycled and redirected to appropriate sites. Also, local materials (within 500 mile radius) were used when possible. For example, the sandstone in the interior of the building is from Colorado quarries in Larimer County. Sustainable wood such as bamboo and aspen were used throughout the building.

Outside of the History Colorado Center, all facilities are dedicated to the State of Colorado's High Performance Certification Program which utilizes USGBC LEED program standards. Wherever possible the agency works to reduce energy usage through improved efficiency of systems, increased insulation, historic window restoration, light bulb

Water Use

Over the last 7 years, History Colorado's water use has decreased by 35% (1,870,960 gallons).

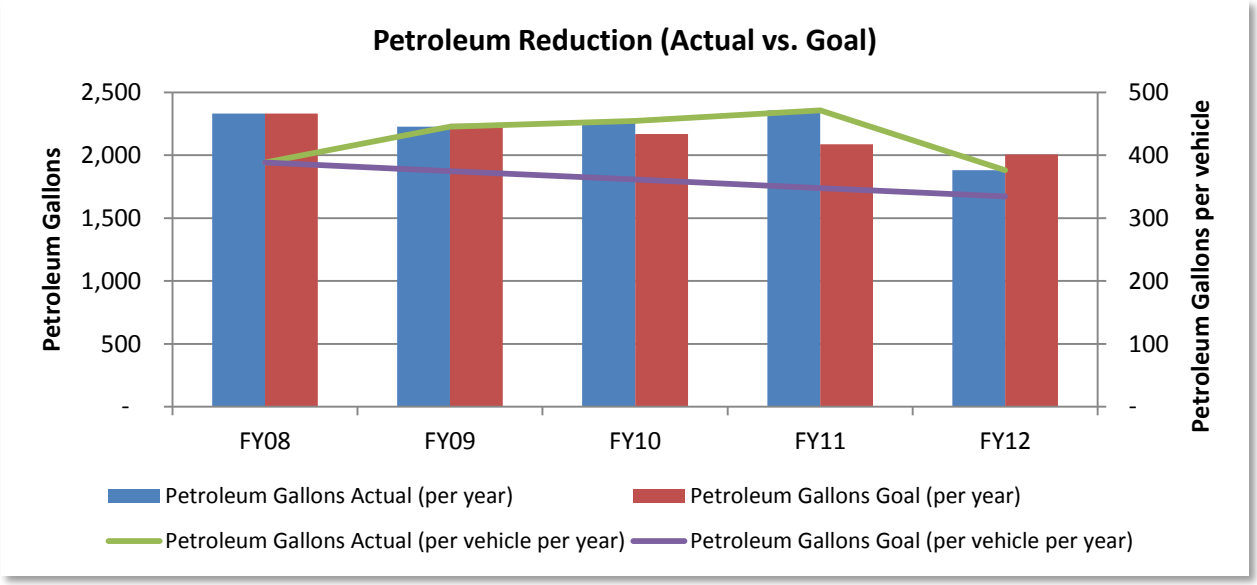


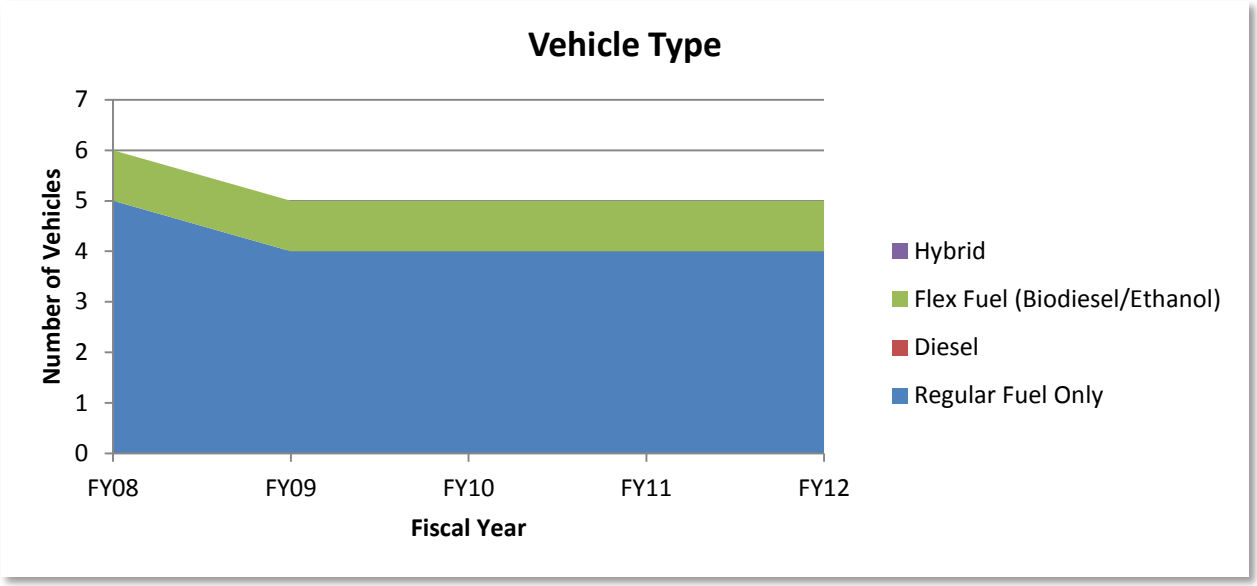
The History Colorado Center building has reduced potable water by 77.3% over a typical landscape design through the selection of water efficient plant species and irrigation efficiency. Plants were chosen to reflect Colorado's native species and climate, and with a proven track record of low water use and desired aesthetics. In the bathrooms, there are Low flow water closets, non-water urinals and low-flow lavatories. Other fixtures in the building are low-flow showers and kitchen sinks. With these were able to achieve a water savings of 45.9% over baseline water usage.

Throughout the state, History Colorado has tried to reduce irrigation wherever and whenever possible. For example, large primitive areas (Georgetown Loop Railroad and Pikes Stockade) are irrigated very minimally. Any landscape improvement projects are xeriscaped. In addition, a few irrigation systems were improved and/or removed over the last seven years.

Petroleum Use

Between FY'08-FY'12, History Colorado has reduced their petroleum use by 19.25% (448 gallons). Note that History Colorado vehicles were not tracked in FY'06 and FY'07, therefore their baseline is FY'08 and their reduction goal is less than 25% and instead is ~20.8% (~4% reduction every year). Therefore, History Colorado has come close to meeting their reduction goal.

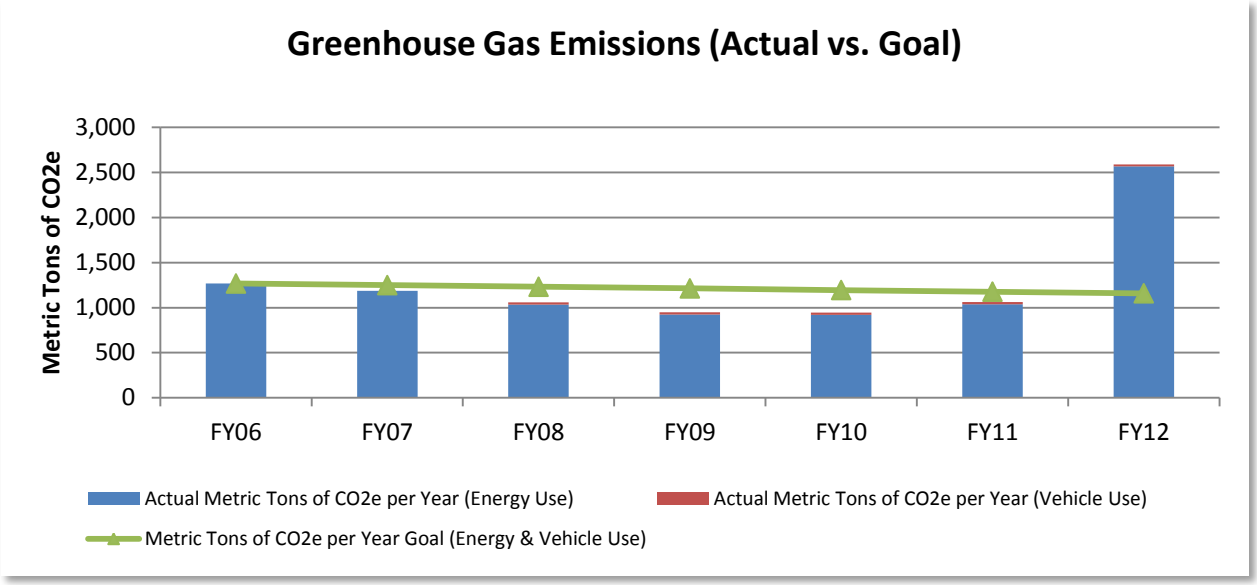




History Colorado's staff is very conscientious of the environment and carpooling is widely used. As a statewide institution, History Colorado has also actively increased videoconferencing reducing driving.

Greenhouse Gas Emissions

Between FY'06-FY'12, History Colorado has increased their GHG emissions by 104%. The increase has come exclusively from their increase in energy use due to the new History Colorado building.



Procurement

At the History Colorado Center in Denver, they participate in several recycling and procurement programs:

- History Colorado purchases 30% post-consumer content.
- All of their used toner cartridges, waste toner containers, rollers, etc. are returned to Xerox for recycling.
- History Colorado is part of a recycling program with Easy Pak to recycle all batteries.
- Every January, History Colorado provides employees the opportunity to recycle old electronics through Electronic Recyclers International, Inc.

All regional properties recycle to the extent possible in their respective communities. Some properties focus more specifically on engaging local communities in local food supplies, xeriscape gardens, most successfully at the Trinidad History Museum, which is also a Plant Select property. Lastly, many History Colorado properties highlight the inherent environmental efficiencies in maintaining or rehabbing historic structures as opposed to scraping and building new.

Employee Engagement

History Colorado actively promotes and supports alternative transportation including EcoPasses. In addition, the History Colorado Center location was based, in part, on its proximity to mass transit as well as to State government offices to reduce the need to drive to meetings.

CDOT

Colorado Department of Transportation (CDOT)

CDOT exists to ensure that Colorado has a safe and efficient highway system by building and maintaining interstates, US highways and state highways.

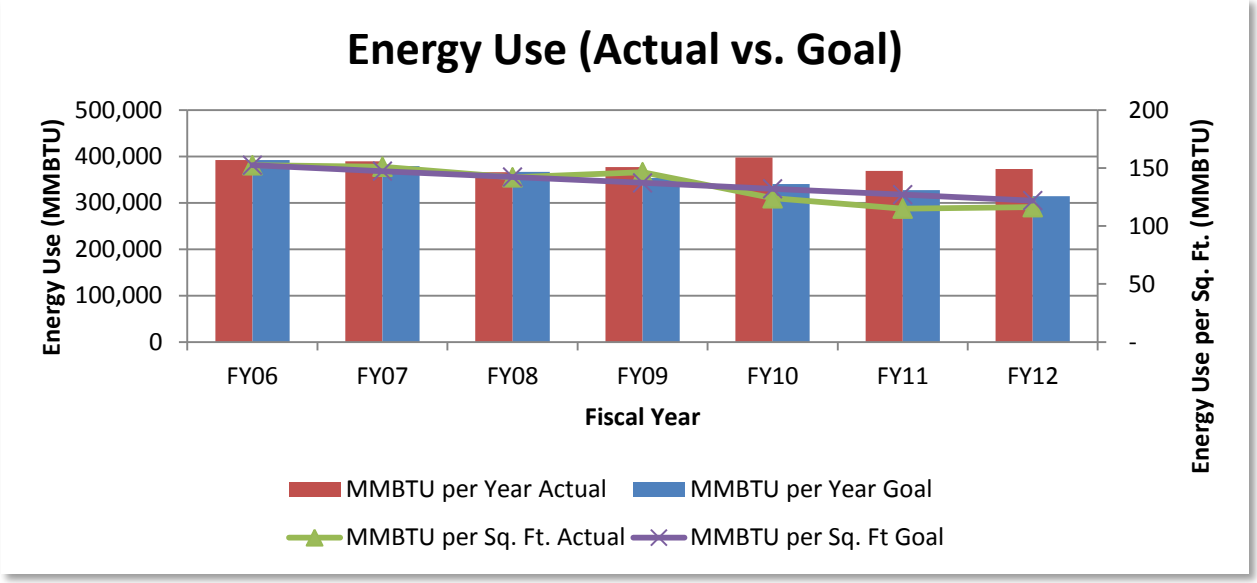
- **Total Sq. Ft. in FY2012:** 3,207,047
- **% Increase/(Decrease) in Sq. Ft Since FY'06:** 25%
- **Number Employees in FY2012:** 3,113
- **% Increase/(Decrease) in Employees Since FY'06:** (3%)
- **Number of LEED Certified Buildings:** 0

To accomplish this goal, CDOT conducts snow and ice operations, roadway maintenance and preservation, and construction management as their primary activities. However, CDOT provides much more with traffic monitoring, avalanche control, rockfall mitigation, transit development and grants and traffic safety education for impaired driving, teen driving, distracted driving, work zone safety, seat belts and more.

Most importantly, CDOT helps you get to where you need to go, safely—rain, snow or shine as there are no breaks for CDOT maintenance crews who are often the first to arrive when a car breaks down or when there is an incident on the highway. CDOT also provides traveler information such as trip travel times, construction delays and construction information to help motorists make informed decisions. These are only a handful of the many activities CDOT performs to ensure safe and efficient travel on Colorado highways.

Energy Use

Between FY'06-FY'12, CDOT has decreased their energy use by 5% or 19,603 MMBTU. However during that time CDOT experienced a 25% increase in square footage. With this increase in square footage CDOT experienced a notable reduction in their energy use per square foot: 24% (36 MMBTU/sq. ft).



Natural gas and electric are CDOT's predominant energy uses. CDOT has realized significant electric usage reductions through the decommission of over 100 highway sign/street light combinations in the Denver metro area, principally on the I-25 corridor. The decommissioning resulted in a net annual savings of over

$60,000 annually. CDOT continues to work on highway, street and signal lighting efficiencies. CDOT is currently involved in a major initiative to upgrade all highway, street and signal lighting statewide with a focus on LED technologies.

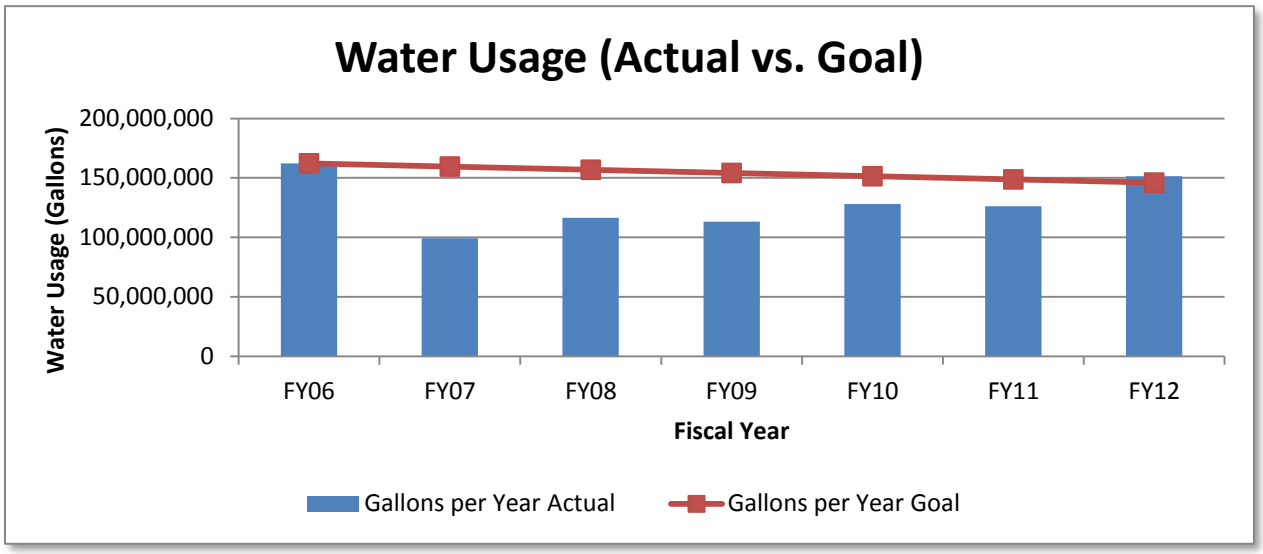
Building lighting has also seen significant usage reduction. For example, the Eisenhower Johnson Memorial Tunnel completed an initial phase of internal light fixture upgrades. This upgrade resulted in a monthly utility cost savings of over $5,000. There are ongoing efforts at this tunnel to reduce energy usage.

Between FY'06-FY'12, incremental upgrades have been made to administrative building lighting and temperature controls to reduce electric usage.

From July 2010 through October 2010 CDOT completed technical energy audits (TEA) of all 1,120 of its facilities, including office buildings and maintenance barns. The TEA report was finalized in April 2011. CDOT's EPC notice-to-proceed on and EPC was issued September 26, 2012. This statewide project incorporates energy saving improvements at 388 structures statewide that are calculated to save $682,000 annually. The majority of retrofits are lighting, boilers, roof-top-units, and thermostats and will take place in FY'13. After the completion of CDOT's EPC we anticipate that electric energy usage will be reduced by at least 20%.

Water Use

Over the last 7 years, CDOT water use has decreased by 10.8 million gallons or 6.7%.

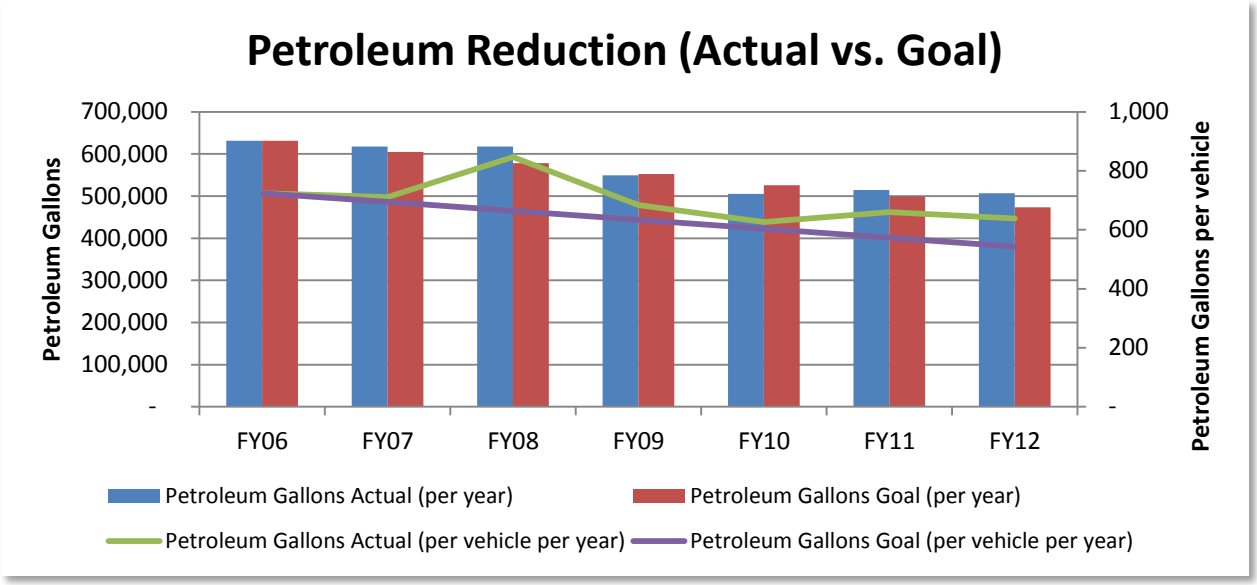


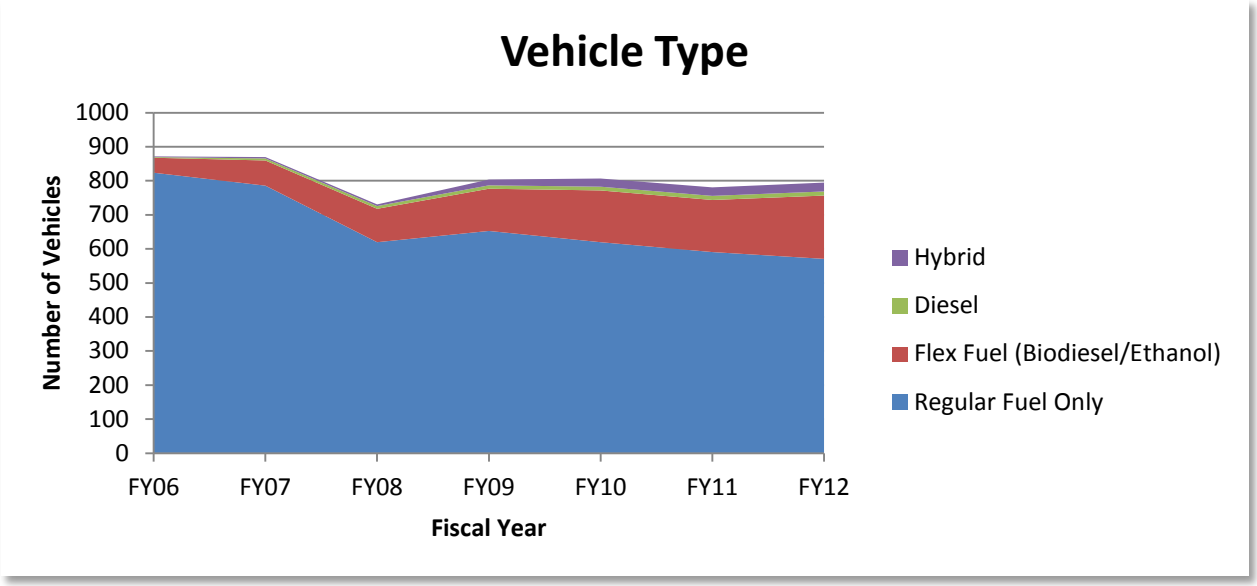
Water reduction was accomplished by examining high usage sites and implementing water conservation practices. These sites were principally CDOT rest areas. This was accomplished using xeriscaping, improved irrigation practices, modified mowing practices, and the use of more efficient water fixtures.

CDOT anticipates further water use reduction in the next two years as they complete their EPC contract site improvements.

Petroleum Use

Between FY'06-FY'12, CDOT has reduced their petroleum use by 20% or 123,897 gallons annually. During that time CDOTs fleet has reduced by 8% leading to reduction of petroleum per vehicle of about 12%.

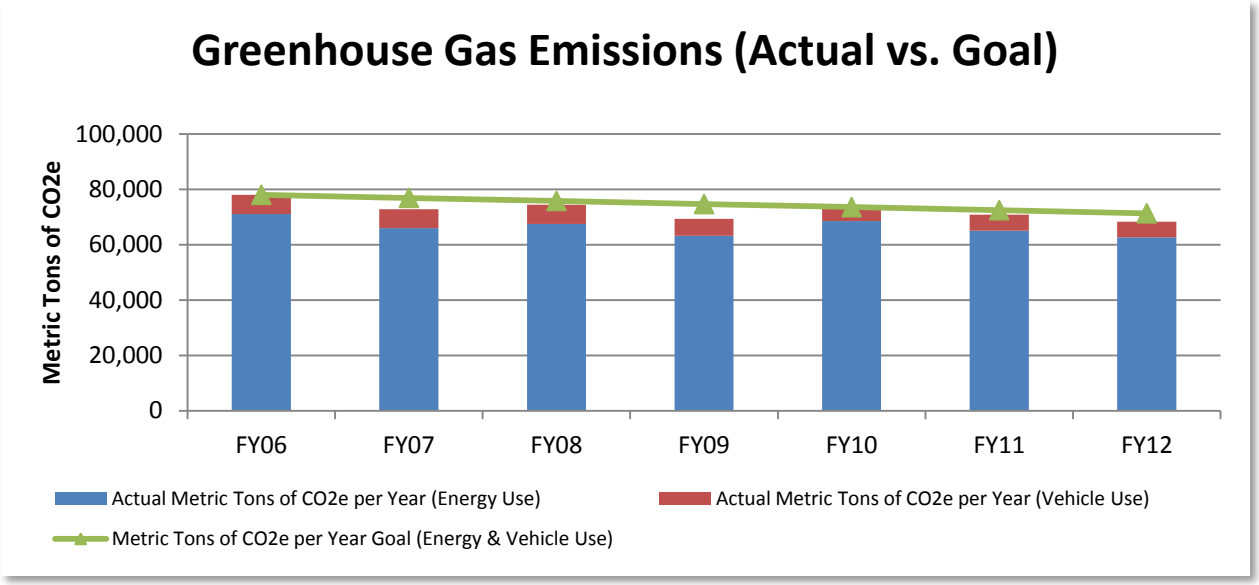




To reduce petroleum use, CDOT implemented Procedural Directive 9.0 which mandates the maximum use of carpooling (with preference given to fuel efficient vehicles), tele-conferencing, and video conferencing. In addition, CDOT has actively encouraging the replacement of traditional gasoline powered vehicles with alternative fueled and Hybrid vehicles. Moving forward CDOT will continue this trend by encouraging the replacing of traditional fueled vehicles with CNG where the fueling infrastructure is in place, making the use of CNG feasible.

Greenhouse Gas Emissions

Between FY'06-FY'12, CDOT has decreased their GHG emissions by 12.4% (9,673 metric tons of CO2e) setting them up to meet or beat the 2020 reduction goal of 20%. Energy use reduction attributed to a decrease in 8,362 Metric Tons of CO2e, while petroleum reduction led to a decrease in 1,310 metric tons of CO2e.



Procurement and Employee Engagement

Single-stream, mixed-stream, paper, and/or metal recycling programs are implemented at various locations statewide. Statewide recycling volumes are not tracked; however, CDOT recycled 981,930 pounds (491 tons) of scrap metal in FY'12. Additional opportunities for recycling include 2 Earth Day electronics recycling events and collected a total of 14,377 lbs (7.19 tons). In addition, CDOT implemented Terracycle, a writing implement recycling statewide (no cost to CDOT), with volunteers to steward collection boxes. Each writing implemented that is recycled lead to $0.02 donation to CDOTs Helping Hand Organization. With the help of CDPHE, CDOT completed a waste audit at the CDOT headquarters facility at 4201 E. Arkansas Ave, Denver, CO.

CDOT works with contractors to use up to 25% Reclaimed Asphalt Pavement (RAP) in lower layers of pavement and up to 20% in the top overlay. As shown in the table below CDOT experienced a 764% increase in FY'12 over FY'06 numbers. The RAP used per Total Mix increased again this year from 11.80% in FY'11 to 15.70% in FY'12.

	FY06	FY07	FY08	FY09	FY10	FY11	FY12
Reclaimed Asphalt Pavement (RAP) Used in Tons	24,664	19,200	79,306	94,565	110,000	134,472	213,028
% Increase in Tons since FY06	N/A	-22%	222%	283%	346%	445%	764%

DNR

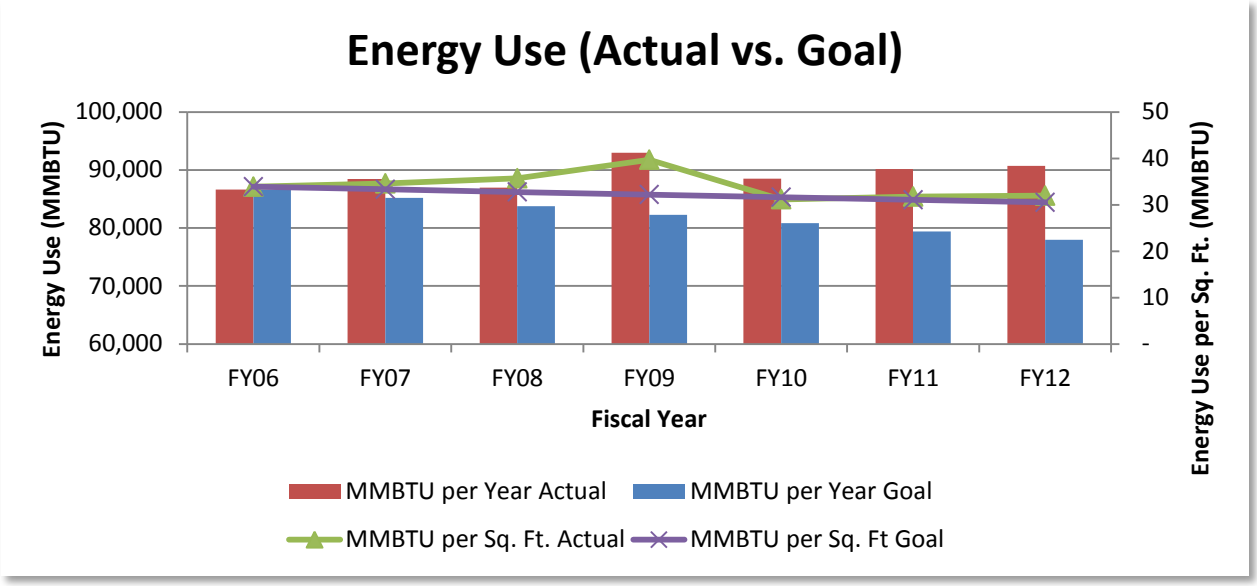
Department of Natural Resources (DNR)

The mission of the DNR is to develop, preserve and enhance the state's natural resources for the benefit and enjoyment of current and future citizens and visitors and is comprised of seven statutory divisions. DNR is a decentralized agency with office locations throughout the state.

- **Total Sq. Ft. in FY2012:** 2,838,814
- **% Increase/(Decrease) in Sq. Ft Since FY'06:** 11%
- **Number Employees in FY2012:** 1,657
- **% Increase/(Decrease) in Employees Since FY'06:** 3%
- **Number of LEED Certified Buildings:** 1

Energy Use

Between FY'06-FY'12, DNR's energy use has increased by 5% or 4,090 MMBTU, thereby missing the 10% reduction goal laid out for them in the Executive Order. However, the agency experienced an 11% increase in their square footage during that time. In return, the agency experienced a 5.7% decrease in energy use per square foot.

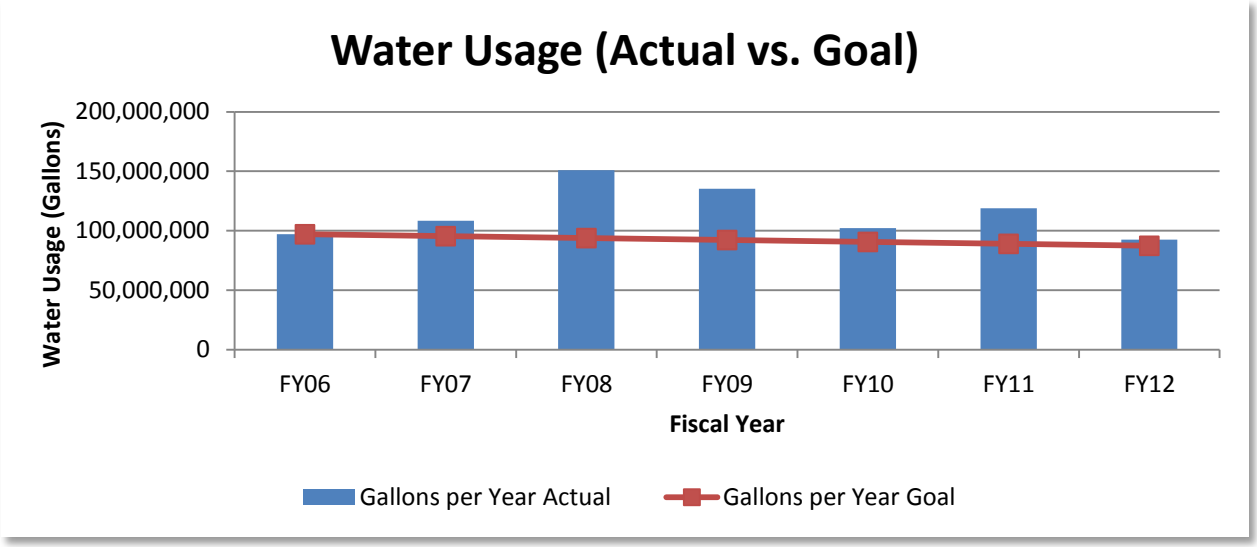


In several of Colorado's State Parks, the DNR has put in place solar arrays capable of producing 289 kW, and since their installation they have generated over 523,000 kWh. Colorado Parks and Wildlife (CPW) continues to work with the CEO to develop necessary maps to facilitate planning for future renewable energy projects. A new 750kWh solar project is under construction at the Native Aquatic Species Restoration Facility in Alamosa and is scheduled for completion by December 31, 2012. This new photovoltaic array is designed to offset the entire electrical demand for the facility for the next 25 years. This facility will essentially cut the cost of energy in half over the lifespan of the system while forgoing the outlay of any capital dollars for installation via a power-purchase agreement.

DNR's largest division, CPW is actively working to implement recommendations from recent TEA's. Work includes improving lighting efficiency, retrofitting motors, and modifying HVAC systems in several of the agency's largest office/park complexes.

Water Use

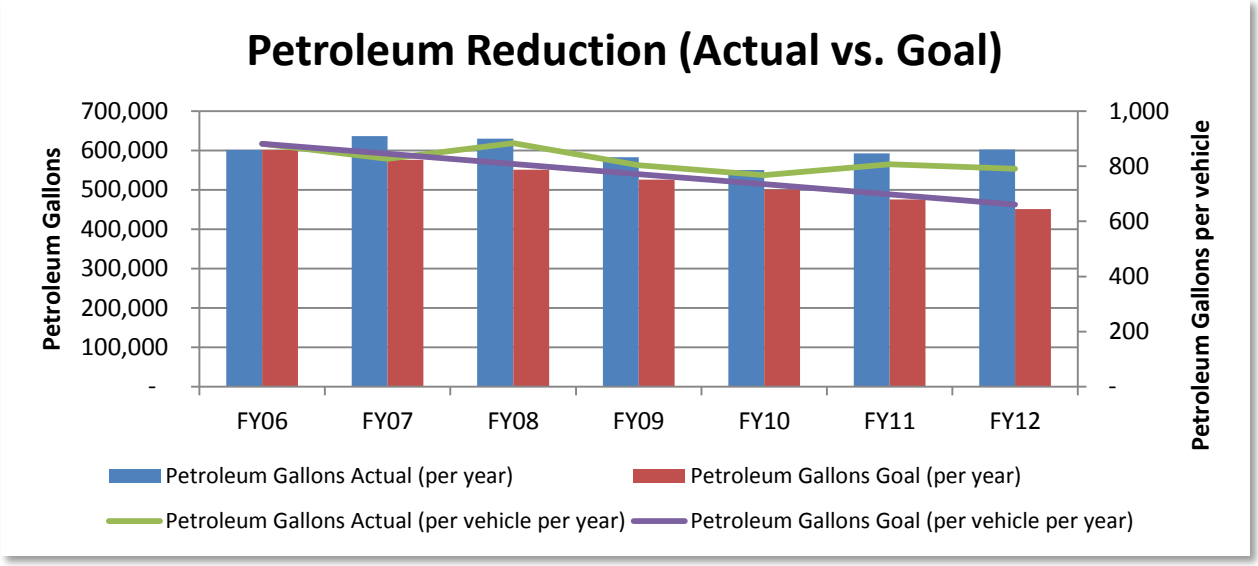
Over the last 7 years, DNR's water use has decreased by 4.6% (4.5 million gallons).

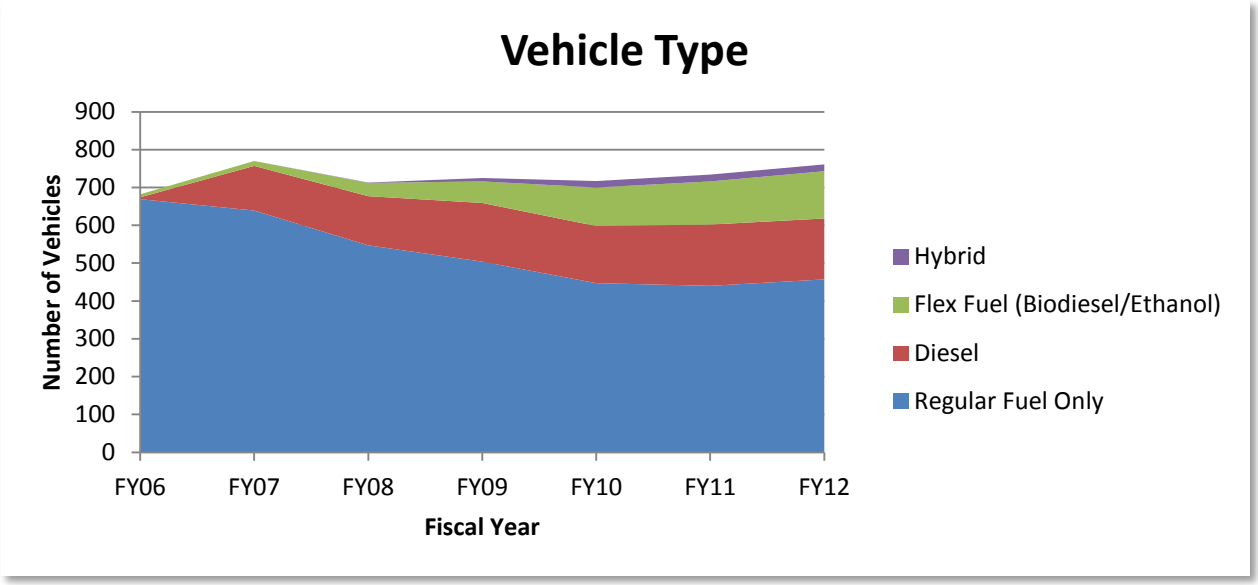


Work continues to implement water-saving retro-fits and improvements in major office complexes and individual state parks. Water use is highly dependent on visitation in Colorado's state parks and occupancy increased n FY'07 and FY'08.

Petroleum Use

Between FY'06-FY'12, DNR has increased their petroleum use by less than 1% (783 gallons). During this time DNR's fleet increased by 12%. In return the fleet has achieved a reduction of 10% in petroleum use per vehicle.

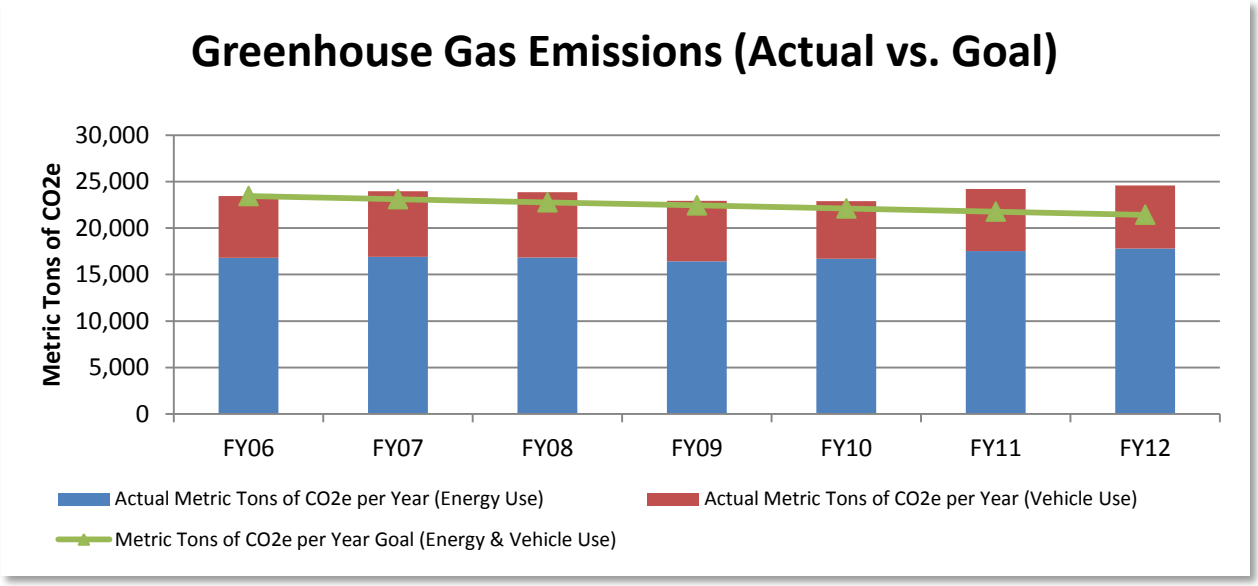




DNR continues to use various means to reduce travel. For example, video and teleconferencing have become normal operating procedure for our Divisions. In addition, agency fleet is analyzed each year to determine where hybrid and flex fuel vehicles can be used.

Greenhouse Gas Emissions

Between FY'06-FY'12, DNR has increased their GHG emissions by 4.8% (1,127 metric tons of CO2e). This increase was mostly due to an increase in electricity which led to an increase in 1,026 metric tons of CO2e.



Procurement

DNR continues to increase use of scanned documents and Sharepoint technology to share documents as opposed to printing and routing. Many printers default to double-sided printing to reduce paper consumption. DNR continues to look for opportunities to make information historically printed and mailed to customers available via the web. For example, the State Land Board is exploring how to automate auction notices eliminating the need for 350 printed documents announcing each quarterly auction. Recycling is still underway where those services are available. In addition, the Division of Reclamation Mining and Safety is initiating a project to automated permitting processing historically administered with hard copy forms and correspondence.

Employee Engagement

Employees continue to engage by doing. With the implementation of TEA's in our largest division an increasing number of employees are becoming aware of and are involved in implementation of green initiatives. The Department has undertaken several process improvement projects that have challenged employees to rethink work in ways that save energy, paper and decrease petroleum use (travel). Recycling continues to be supported throughout the Department.

CDPS

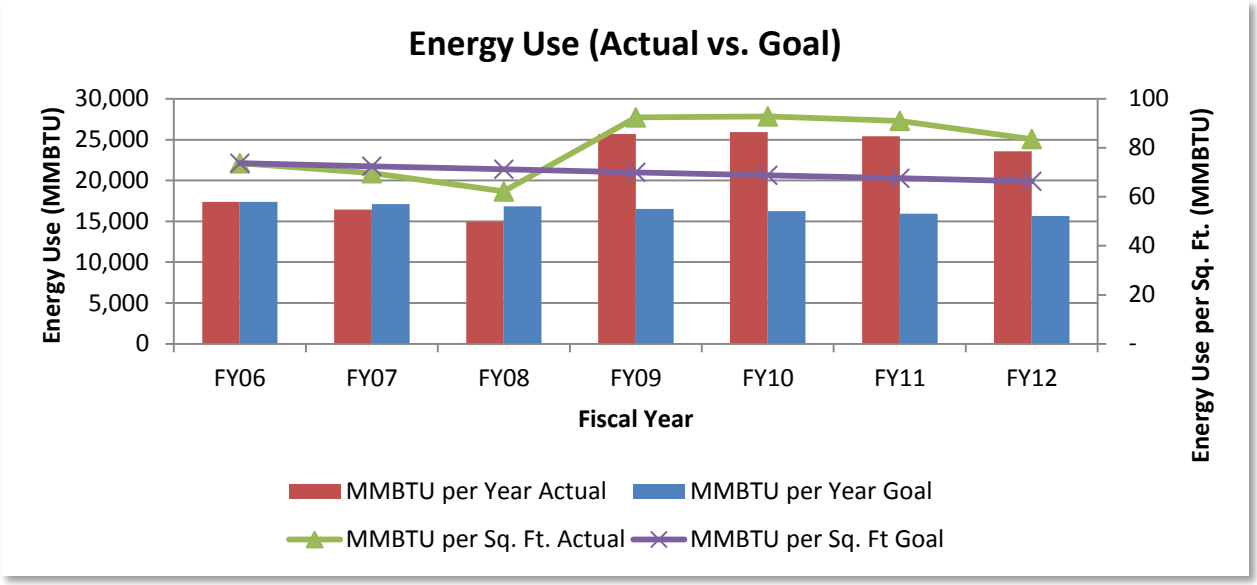
Colorado Department of Public Safety (CDPS)

The mission of the CDPS is to provide a safe environment in Colorado by maintaining, promoting and enhancing public safety through law enforcement, criminal investigations, fire and crime prevention, recidivism reduction and victim advocacy. CDPS also provides professional support of the criminal justice system, fire safety community, other governmental agencies and private entities. In FY 12, the department consists of the Executive Director's Office, Colorado State Patrol (CSP), Colorado Bureau of Investigation (CBI), Division of Criminal Justice, and Office of Preparedness, Security, and Fire Safety.

- **Total Sq. Ft. in FY2012:** 282,042
- **% Increase/(Decrease) in Sq. Ft Since FY'06:** 19%
- **Number Employees in FY2012:** 1,370
- **% Increase/(Decrease) in Employees Since FY'06:** 7%
- **Number of LEED Certified Buildings:** 0

Energy Use

Between FY'06-FY'12, CDPS's energy use has increased by 35% or 6,175 MMBTU, thereby missing the 10% reduction goal laid out in the Executive Order. However, during that time square footage increased by 17%. In return, the energy use increased by 10% per square foot.

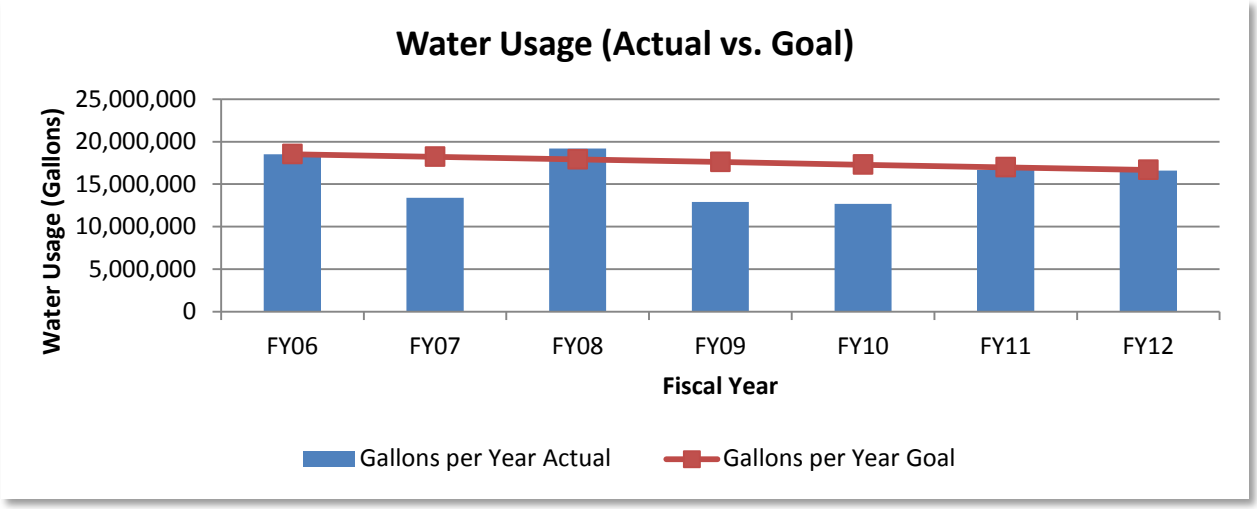


The Department's energy use increase over the FY'06-FY'12 period was likely due to several contributing factors. CSP constructed and opened new 24-7 offices in Frisco, Alamosa (including a regional communications center) and Fruita, and a new garage in Castle Rock. These buildings are owned and maintained by CSP, and utilities are tracked and paid by CSP, as well. The former office locations were either commercially leased (Frisco) or housed within another state agency's building (Alamosa, Grand Junction and Castle Rock), where utilities were not separately tracked, and the new buildings were appropriately sized for the needs of the CSP's mission. In April of 2008, the CBI's new Grand Junction Regional Office opened for business. This location houses the investigative resources and a modern laboratory where services can be provided to law enforcement agencies, and the public, on the Western Slope. The former Western Slope location in Montrose was in 7600 square feet of leased space, where utilities were included in the contracted lease amount, and where utility use was not tracked. The new facility, at 38,000 gross square feet, was a significant factor in the Department's increased energy use in FY'09.

Another reason for the increased use of energy by CDPS may have to do with changes in reporting, paying and tracking utilities at Camp George West, in Golden. The campus buildings were not all individually metered and DPA handled most of the information until the meters could be installed and billing/tracking became more accurate.

Water Use

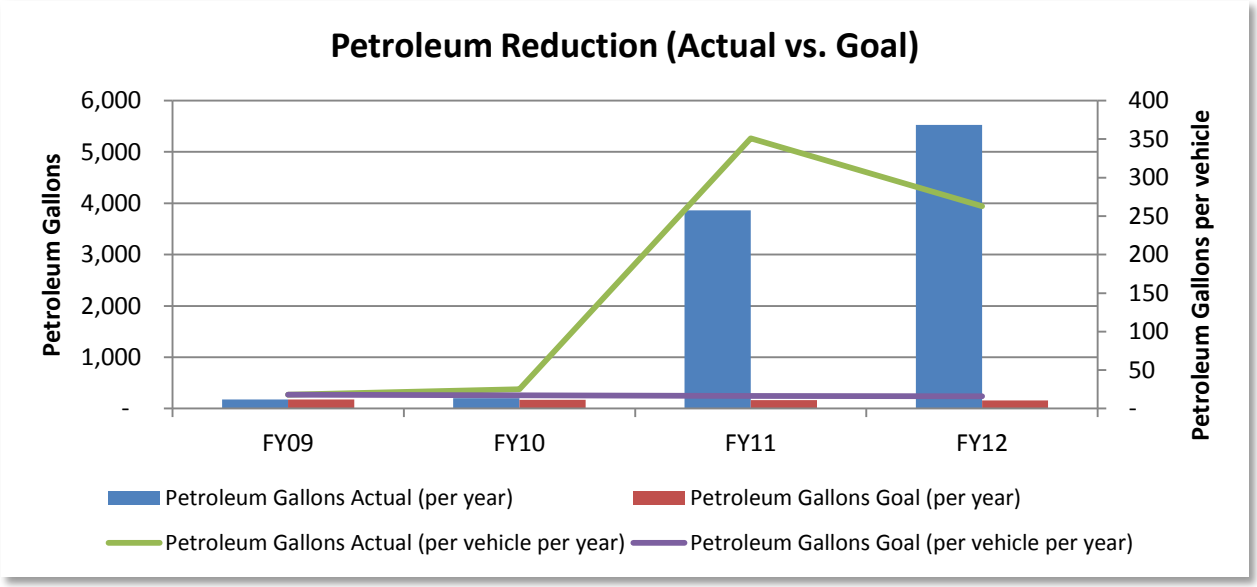
Over the last 7 years, CDPS's water use has decreased by 10.4% (1,924,950 gallons), surpassing the reduction goal of 10%.



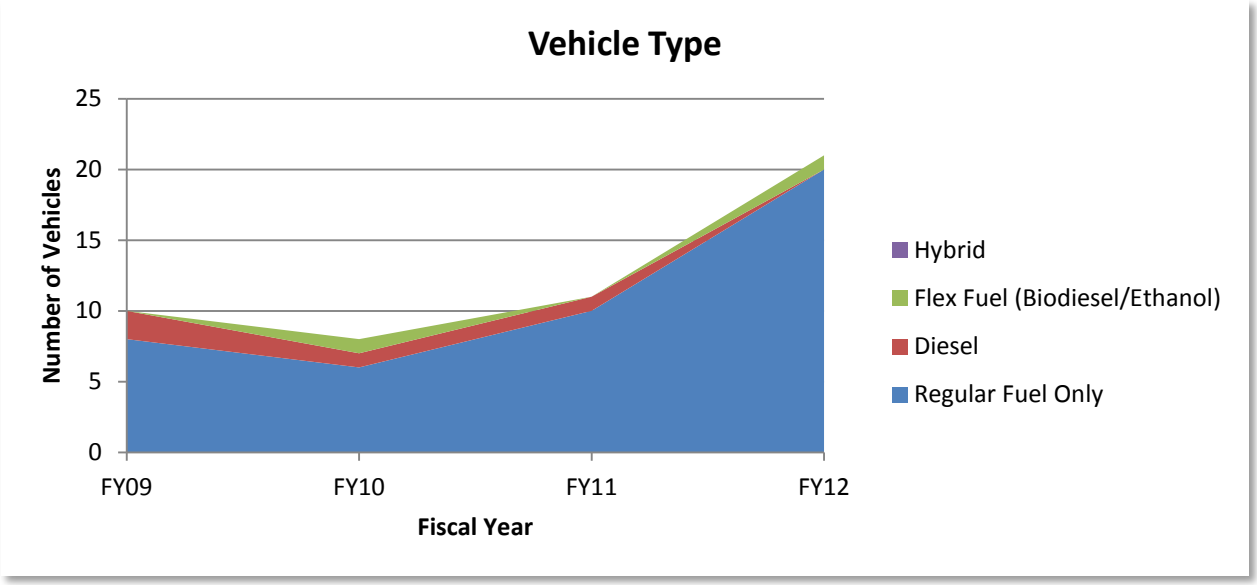
Whenever new equipment, remodeling, or new fixtures are required in one of the Department's facilities, low-flow and conservation are taken into account. Newly constructed or updated owned locations also incorporate xeriscaping to reduce water consumption.

Petroleum Use

Between FY'09-FY'12[4], petroleum use by CDPS non-exempt vehicles increased by 5,344 gallons annually. This increase can be partly explained by the 110% increase in non-exempt vehicles during that time. However, most likely this increase is due to the fact that before FY'11, the vehicles were not driven many miles and/or in active storage; therefore using very little petroleum.



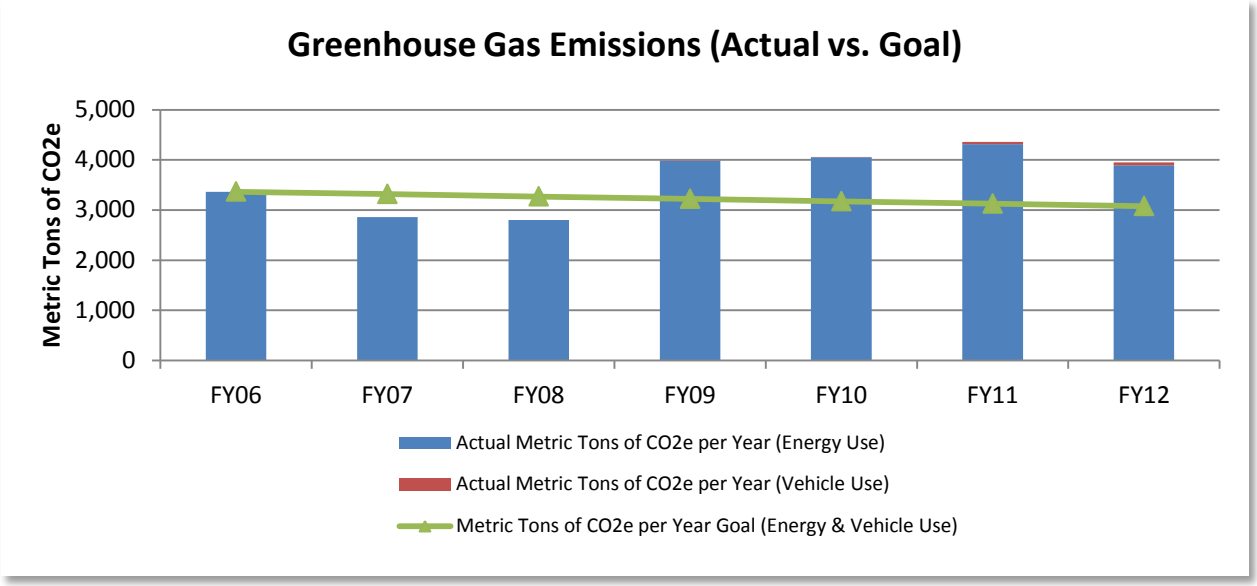
[4] Note that CDPS Vehicles were not tracked in FY'06 –FY'08, therefore the baseline is FY'09 and the reduction goal is less than 25% (~10%).



While most of the CSP's vehicles, and a few others within the Department, are exempt from the Executive Order, the CSP is committed to reducing petroleum use, and thereby, costs, whenever possible. More aerodynamic light bars and exterior equipment have been installed over the years, and the amount of requisite equipment or gear has been reduced or items that weigh less and do not compromise safety have been used. Where possible, CDPS has deployed hybrid or flex-fuel vehicles, with the assistance of State Fleet Management.

Greenhouse Gas Emissions

Between FY'06-FY'12, GHG emissions for CDPS increased by 17%.



Procurement

The CDPS was one of the lead departments in exploring toner and ink cartridge recycling and recharging. It has adopted the State's paper procurement policy, as well as its EPP policy. Offices that are located away from major cities have contacted other State and local government entities to "piggy-back" on shredding and recycling services from vendors to reduce the costs to government and make the trips for vendors more economically feasible – and reducing petroleum consumption (reduced number of trips) and green-house gas emissions. CSP's Automotive Shop recycles rubber, metal, batteries and other auto-related supplies.

Employee Engagement

The CDPS Green Team has held fairs, brown-bag presentations, and other events over the past seven years to heighten awareness and generate buy-in and compliance with greening initiatives. It has also hosted electronics recycling, and worked closely with its neighbor, the Colorado Department of Agriculture, on such efforts. Since the Department has many employees and offices around the state, its electronic bulletin board is used by the Green Team to share information (including the recent residential solar opportunity), upcoming events, and recycling tips and locations, for work and for home. The Department is also taking advantage of the State's leased copier contract to leverage paper/toner/ink savings (scanning, emailing and printing), and reducing the number of individual printers. The Department uses video- and teleconferencing (such as the Century Link conference bridges and Go To Meeting) whenever possible, and employees carpool, in personal vehicles, as well as state-owned vehicles. In one metro Denver commercially-leased location, the Department's tenants kept encouraging the landlord to provide paper recycling, which finally came about as a result of their persistence. The Human Resource Services Section is nearing an all-electronic personnel file for CDPS members, and many common reports are electronically submitted. All divisions have taken efforts to reduce the reliance on paper; many of these efforts involve other state and local government agencies.

CDLE

Colorado Department of Labor and Employment (CDLE)

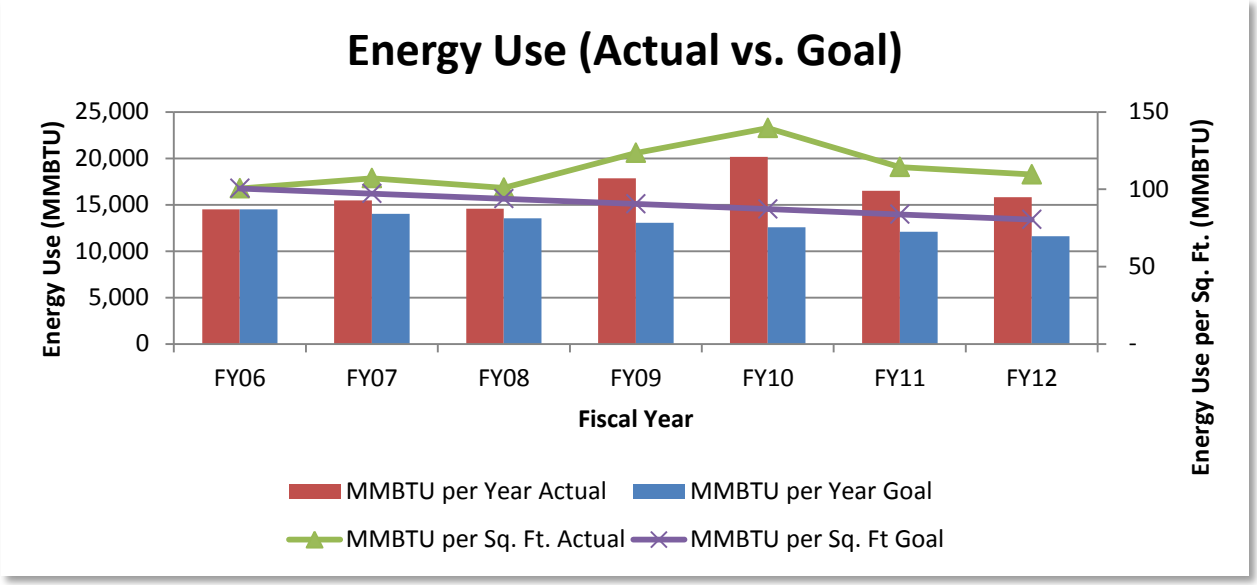
CDLE's mission is to protect and promote the integrity and vitality of Colorado's employment environment. We have more than 1,000 employees advancing this mission through services to businesses and workers across Colorado. CDLE supports Colorado's business community with resource and information to help them save valuable time and money.

- **Total Sq. Ft. in FY2012:** 145,494
- **% Increase/(Decrease) in Sq. Ft Since FY'06:** 0%
- **Number of Employees in FY2012:** 1,079
- **% Increase/(Decrease) in Employees Since FY'06:** (4%)
- **Number of LEED Certified Buildings:** 1 building certified (New Construction and Existing Building)

CDLE owns and manages three buildings: the Unemployment Insurance Building, Craig Workforce Center and the Frisco Workforce Center. They also lease other workforce centers throughout the state to work with unemployed citizens and employers to match worker skills and discuss and arrange potential training/education which could assist in the development of the 21 Century Workforce. Special programs for veterans and mentally/physically challenged workers are administered from these "One-Stop Centers." Approximately 50% of the CDLE workforce works out of leased spaces.

Energy Use

Between FY'06-FY'12, CDLE has increased their energy use by 9% or 1,303 MMBTU.



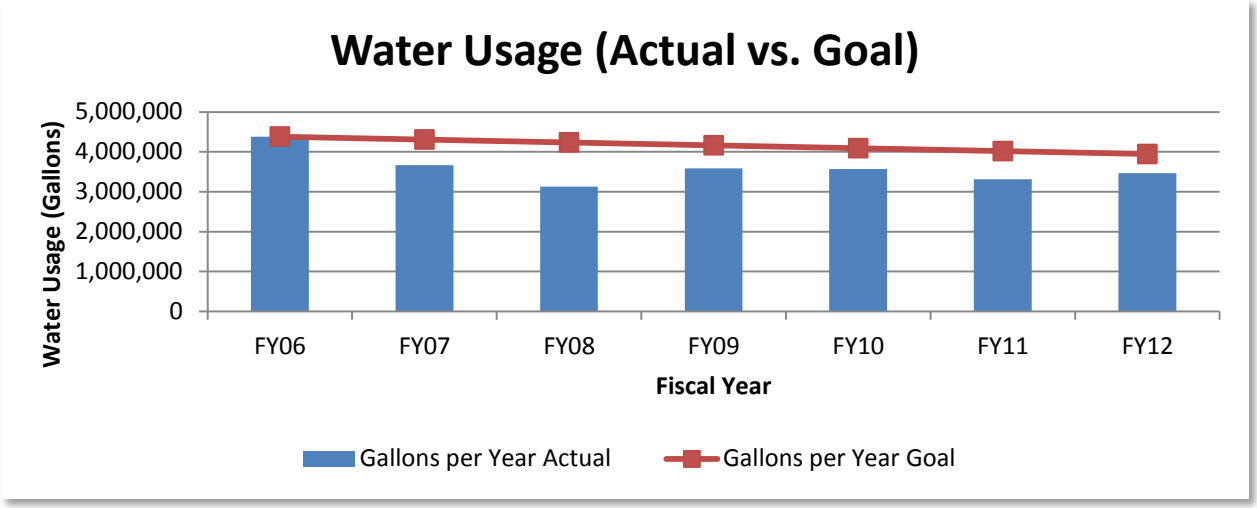
Between FY'06-FY'12, CDLE has increased their energy use by 9% or 1,303 MMBTU. However it is anticipated that a number of completed projects have held down increased energy usage and should have a positive impact on energy usage in the future. These completed energy-related projects are as follows: 1) Cooling Tower Replacement; 2) Roof Replacement; 3) 10 Kilowatt Solar Installation; 4) Chiller Renovation and Rewrap; and Passenger Elevator Renovation (2012).

The increase in employees and need for unemployment benefits has lead to a greater use of energy in the unemployment building. In FY'12 CDLE completed the work related to their energy performance contract including lighting upgrades and controls, replacement of an antiquated boiler system. They reviewed and modified their building automation controls and programming to optimize energy use, while working with staff to provide a basic understanding of the role each person plays in energy control.

CDLE strongly supports LEED certification and has received certification for both new building construction and for reconstruction of an existing building. The first "public" building to be certified in the state was CDLE's new Unemployment Insurance building. CDLE has worked closely as a tenant with building management for its downtown Denver Headquarters building, which also has received LEED certification. The Craig Workforce center is an energy star rated building and many of the energy inefficient appliances have been replaced.

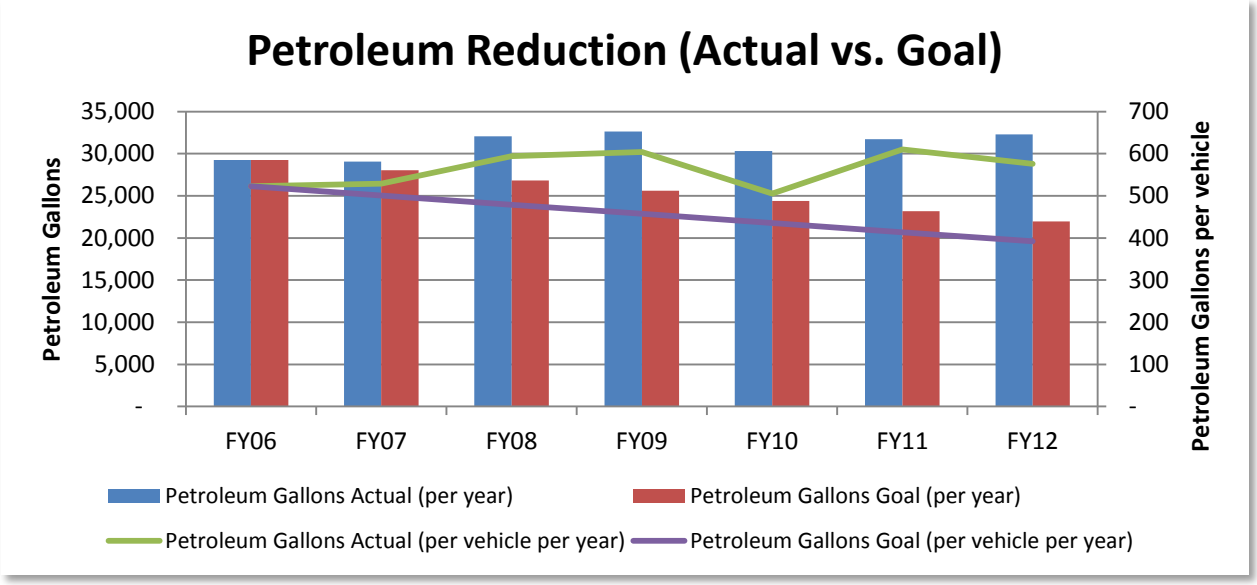
Water Use

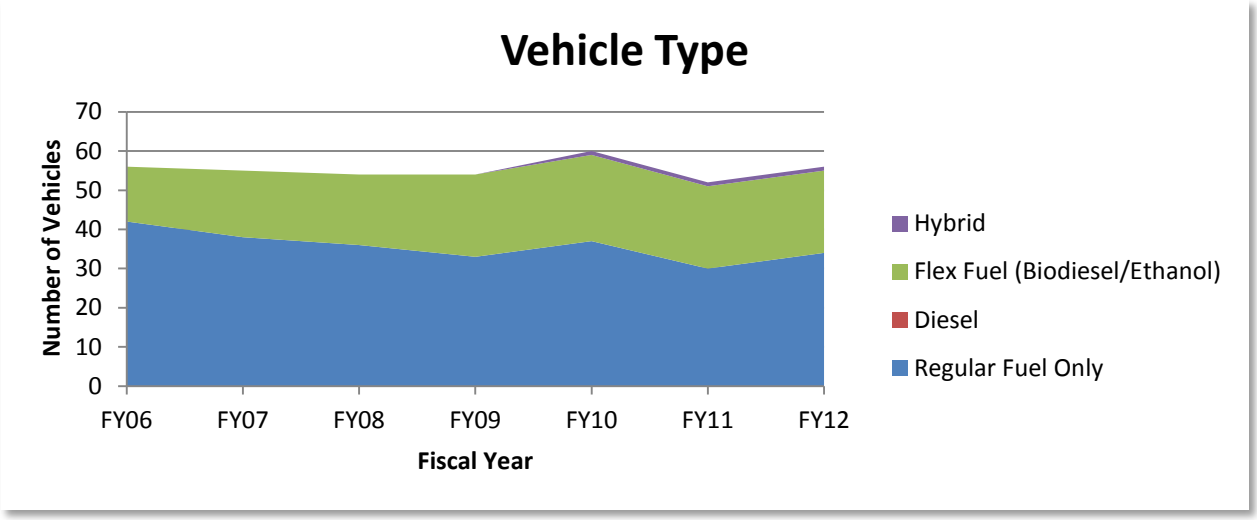
Over the last 7 years, CDLE water use has decreased by 915,117 gallons or an impressive 21% surpassing the 10% reduction goal set out by the executive order.



Petroleum Use

Between FY'06-FY'12, CDLE has increased their petroleum use by 10% or 3,003 gallons annually.

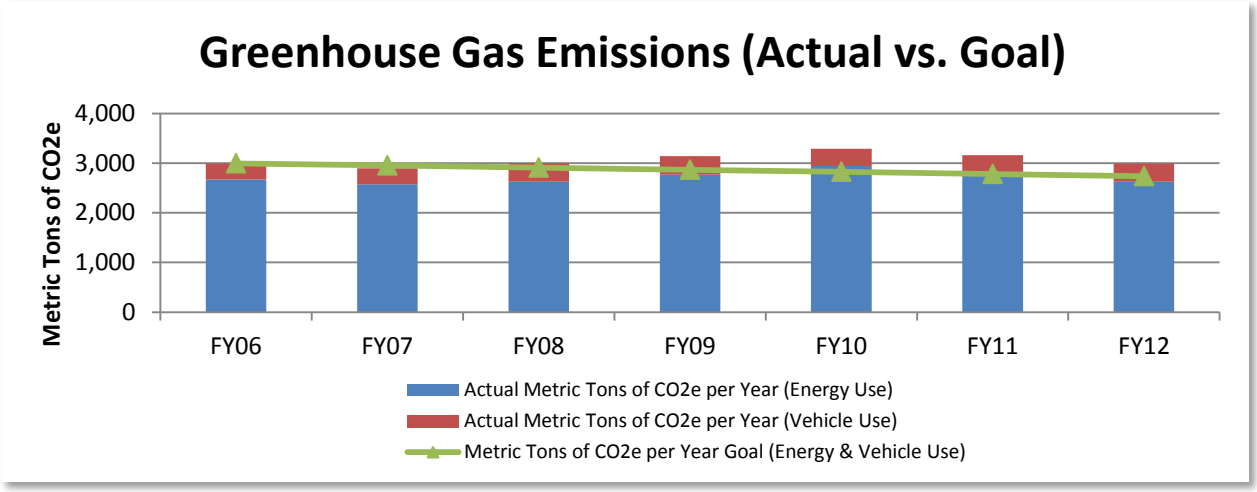




CDLE has worked with State fleet in the selection of vehicles based on the requirements of our staff and students. CDLE instituted a scheduling program for ensuring the vehicles are used as efficiently as possible. CDLE staff is aware of combining trips and activities to save not only fuel but impact on a limited fleet of vehicles.

Greenhouse Gas Emissions

Between FY'06-FY'12, CDLE has slightly decreased their GHG emissions. The decrease in emissions is due to the increased use of ethanol fuel used in their fleet.



Procurement and Employee Engagement

The CDLE Green Team has members from all major divisions including Unemployment Insurance, Workers' Compensation, Oil and Public Safety, and Labor Standards as well as from all support sections (HR, Finance, Procurements & Contracts, etc.). The Green Team created a Green Intranet Site to post interesting "greening" materials and statistics, promoted electronic recycling events, and worked to reduce paper usage by requiring printers to be set to the duplex mode.

With Workforce Centers operating in 50 locations, CDLE continues to promote Environmentally Preferable Purchases and Green Cleaning & Maintenance Policies. Single stream recycling continues to be an important program which is fostered in both its owned and leased buildings with monthly results published for employees. Following its successful *Green Bag* Luncheon Series, a model was developed for use by other state agencies to educate employees on environmental matters and on the greening of state government. CDLE installed solar panels (i.e., two (2) photovoltaic grids) in 2011 on one of its metro-Denver buildings, producing 28,375 kWh to date.

Agencies in Leased Buildings

The following agencies are located exclusively in leased facilities and are not required to track or reduce energy or water use. However, many agencies have still made great strides to reduce their impact through employee education, waste reduction, transportation efficiencies, and partnering with landlords to reduce energy and water use. Many of these agencies do own their own vehicles, therefore their petroleum use and resulting GHG emissions are provided.

CEO

Colorado Energy Office (CEO)

The CEO continues to promote sustainable economic development in Colorado through advancing the State's energy market and industry to create jobs, increase energy security; lower long-term consumers costs and protect our environment. FY 2012 highlights from the greening government initiative include: a) programmatic leadership for the BigFix project, the EPC program, ecopass renewal, CNG MOU, and Solar Benefits Colorado b) grant management of Supplemental Environmental Program Grants to universities, various water and energy efficiency grants, EnergyCAP, and Xebec, and c) helping increase the implementation progress of EnergyCAP from 76% to 92% complete. The CEO also switched in FY'12 to ordering only recycled paper.

Since 2008, the Greening Government Program Manager has been an employee of the CEO and has helped lead GGC initiatives internally and externally throughout the State. Some highlights include EnergyCAP implementation, compiling the annual report, distributing grant funds to agencies, supporting the EPP policy, leading GGC meetings every other month and general support.

See the Office of Governor section below for petroleum use.

DHE

Department of Higher Education (DHE)

Since 2008, the DHE has had a very strong "Green Team" made up of 10 people that meet once a month. In FY'12, the Green Team hosted many successful events that encouraged "green" activities such as carpooling or using public transportation to get to work. In addition, the "Green Team" has increased their visibility by posting sustainability factoids weekly around the office and publishing a quarterly newsletter "It IS Easy Being Green" that has various themes (i.e., composting, winterizing, etc.). Lastly, DHE is located in a LEED Certified building that has added composting to their already thorough recycling program.

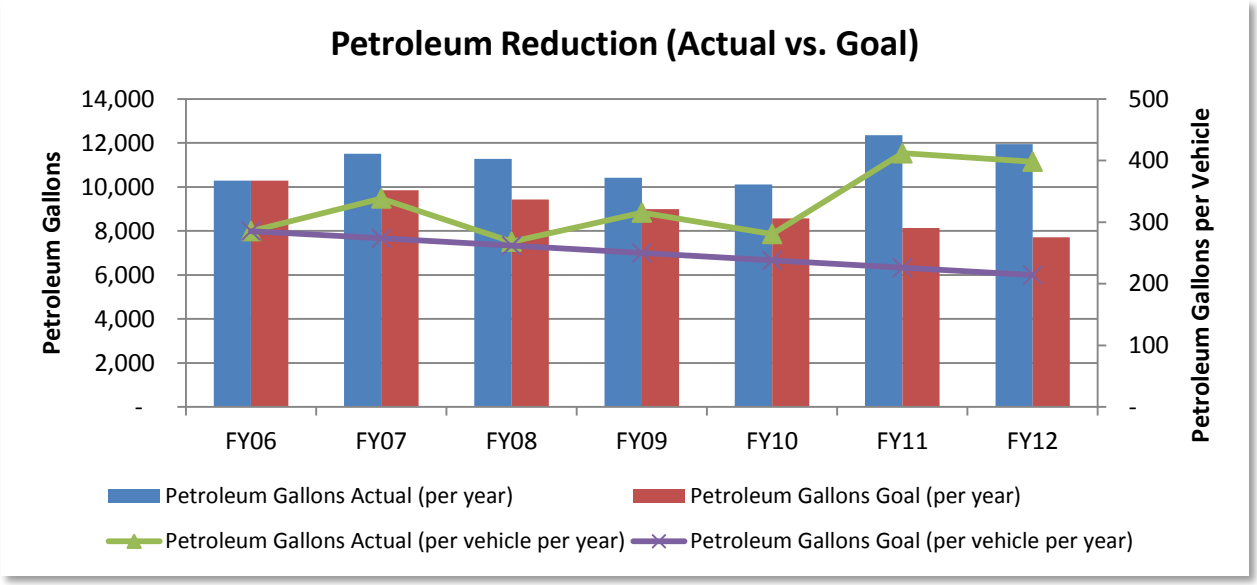
Various Universities and Colleges have vehicles that are not exempt from the executive order. However, none of these vehicles are directly managed by DHE, therefore are not reported here.

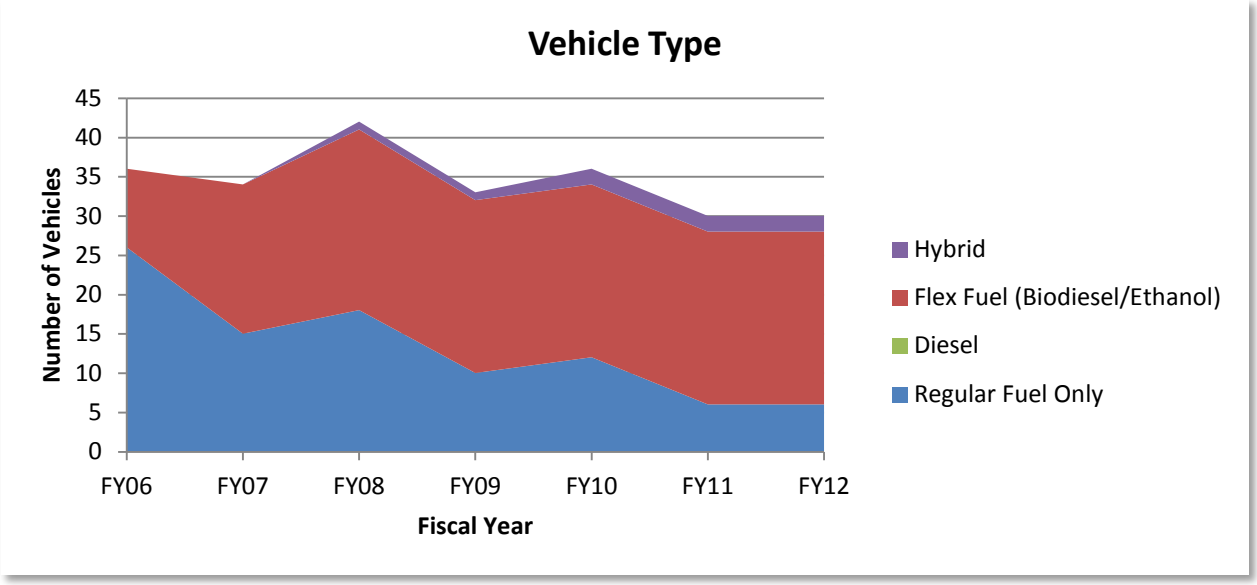
DOL

Department of Law (DOL)

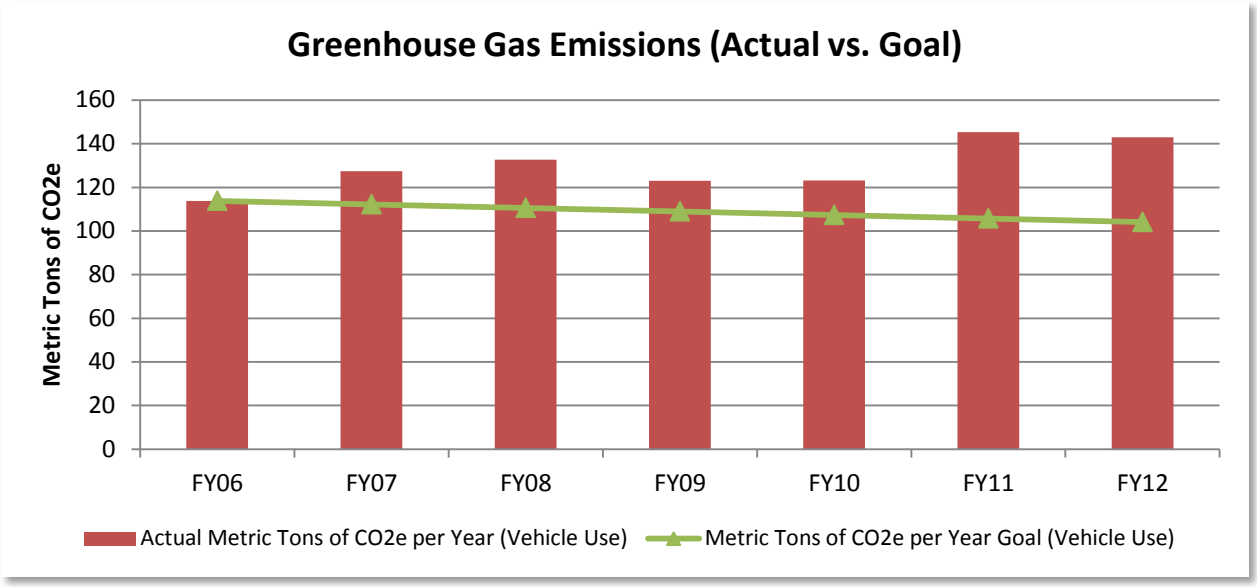
In FY'12 DOL had several successful green initiatives including bike to work day (they won for 3rd consecutive year in a row for most participation in the Class D office size), TerraCycle recycling program, over 50% participation rate in ecopasses, and through Shred-It paper recycling, DOL saved 3,434 trees.

DOL has increased their petroleum use in their fleet of vehicles.





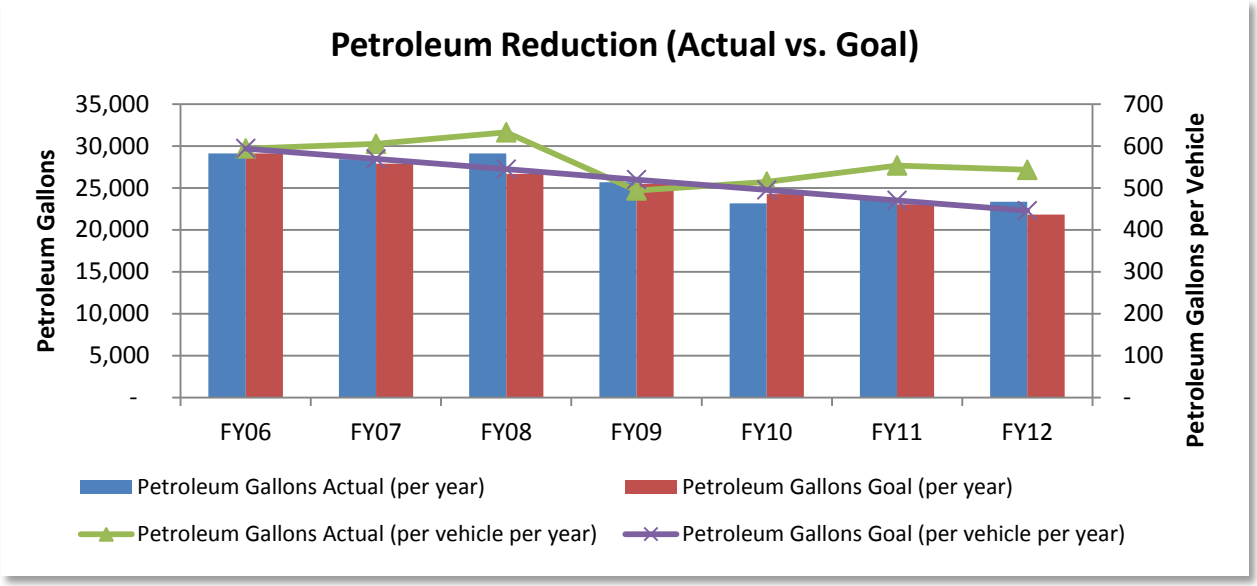
DOL has increased their GHG emissions by 25.5% between FY'06-FY'12.

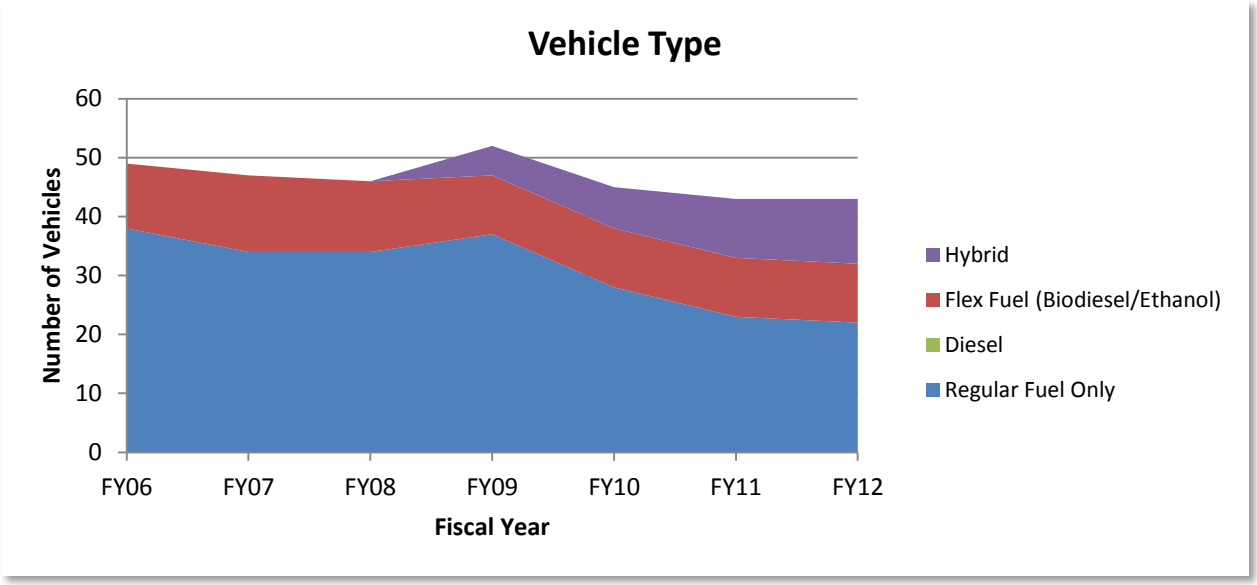


DOLA

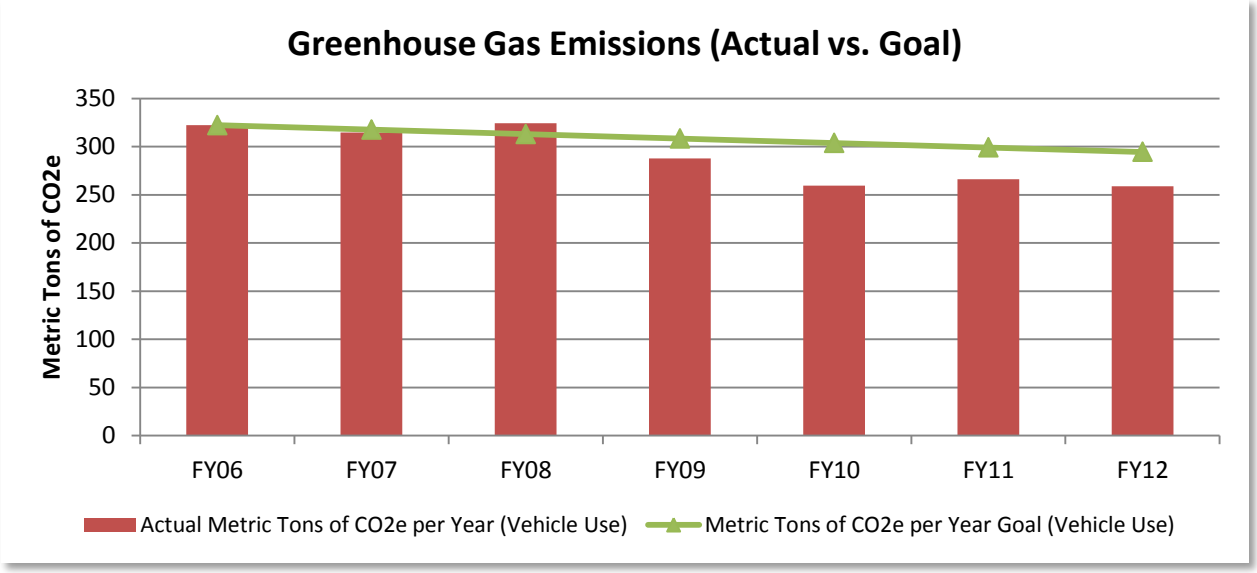
Department of Local Affairs (DOLA)

DOLA has been very proactive in their initiatives to reduce petroleum consumption through video conferencing, driver education, purchasing alternatively fueled vehicles and hybrids, and supplying ecopasses for their employees. As shown below DOLA has reduced their petroleum use by almost 20% or 5,764 gallon annually.





DOLA has reduced their GHG emissions by almost 20% surpassing FY'12 goals and almost meeting FY'20 goals.



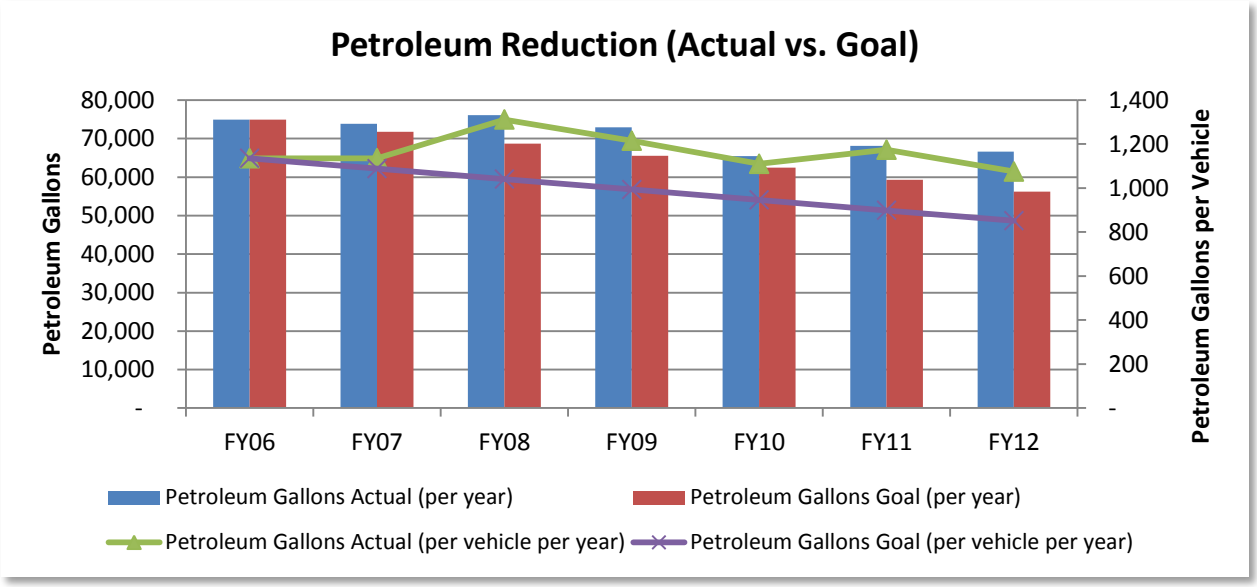
DORA

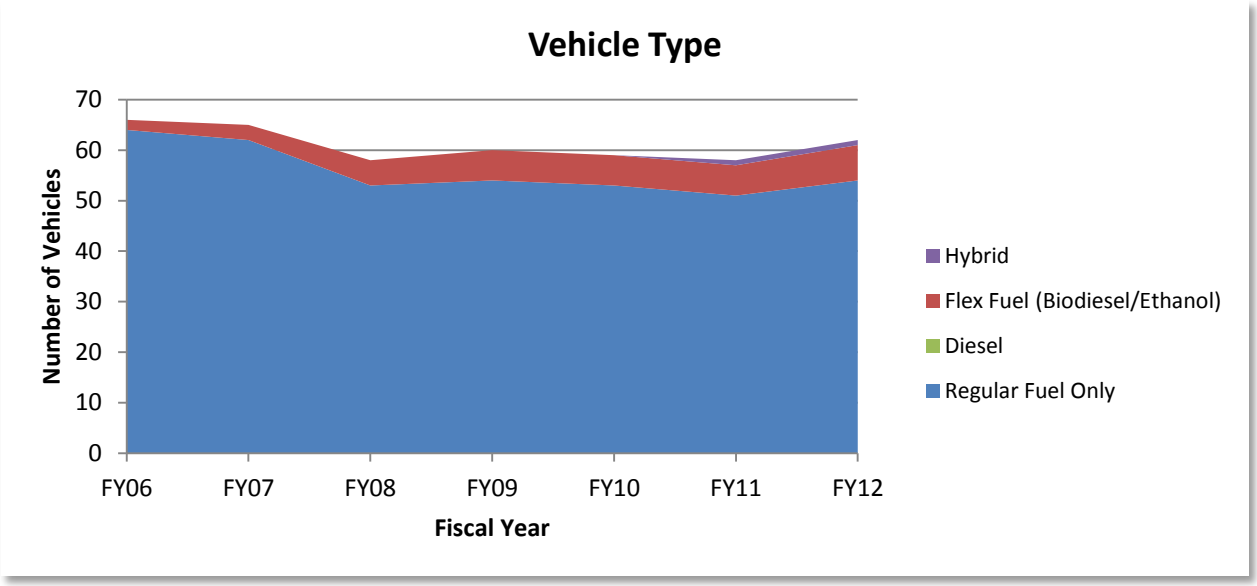
Department of Regulatory Agencies (DORA)

The DORA "Green Team meets on a monthly basis and consists of at least one representative from each of DORA's divisions, as well as the Executive Director's Office and OIT at DORA. The team has done plenty to promote their efforts throughout the agency by providing a "green tip" of the day that rotates on a daily basis on DORA's intranet. In addition, they have organized various events including "Bike to Work Day" and the first eWaste recycling event for all state employees in September 2008. DORA has seen a steady increase in their ecopass participation (62% of DORA participates), and taking advantage of telecommuting (17% of DORA).

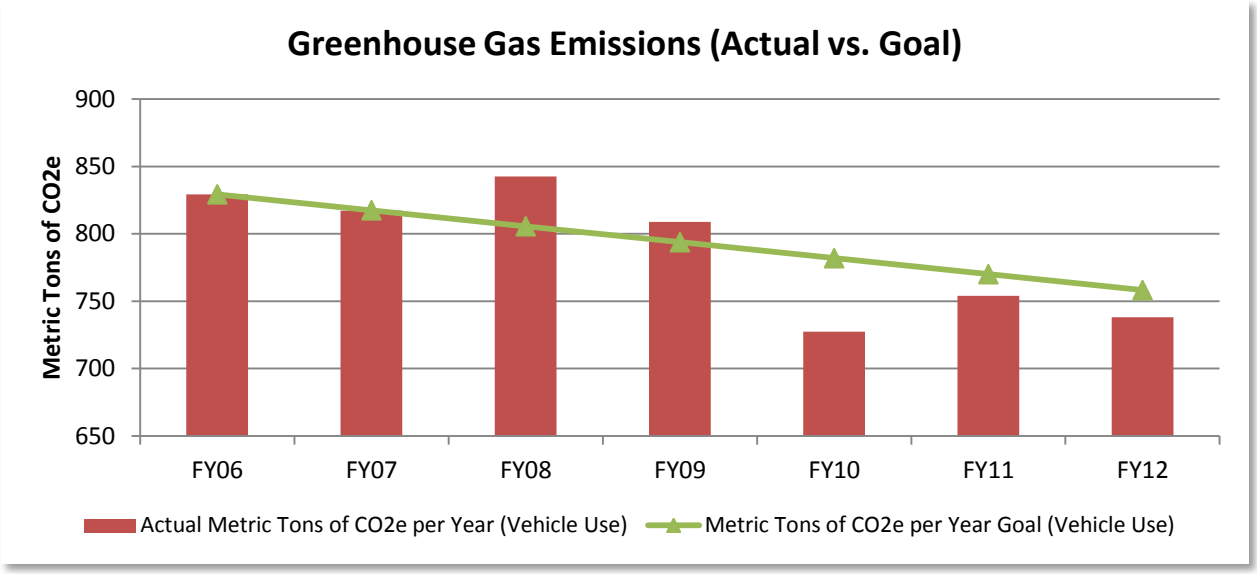
DORA actively participates in single-stream recycling and composting throughout their offices. In addition, they have seen an increase in paperless initiatives including the Public Utilities Commission implementing an eDocket system and the Division of Professions and Occupations and the Division of Real Estate migrating to paperless board and commission meetings significantly reducing paper use and waste. Lastly, DORA eliminated bottled water at all board and commission meetings and actively participates in "Call2Recycle" recycling of rechargeable batteries and pens through the TerraCycle program.

DORA has also worked hard to reduce their petroleum use by 11%.





DORA has reduced their GHG emissions by 11% surpassing the goal of a 1.3% reduction annually.



HCPF

Department of Health Care Policy and Financing (HCPF)

The HCPF "Green Team", formed on January 31, 2008, is made up of approximately ten volunteer members from throughout the Department. The "Green Team" is responsible for devising, planning and implementing all of the Department's green efforts to date including various employee engagement activities such as email reminders and postings, quizzes and surveys. Their biggest event was a Green Fair in August 2011 where HCPF hosted vendors from various environmentally conscious organizations. Over 140 employees attended including representatives from three different state departments.

The Department has made efforts in their purchasing to save energy, water and reduce waste including: purchasing dishwashers and refrigerators and moving away with CRT monitors towards less energy intensive and hazardous materials flat screen monitors. HCPF does not have its own fleet but encourage their employees to use State Motor Pool vehicles (especially the hybrids and alternative fuel models) and offers the eco pass to all employees.

HCPF benefits from the recycling efforts of Capitol Complex but have also added additional recycling programs for batteries, pens, and participated in an e-cycle event. All employees have a recycling container by their desk. HCPF continue to purchase materials with recycled content including furniture, toner cartridges and all of their paper. Paper use continues to decrease due to varies efforts including switching to electronic letterhead rather than hard copy which saves money and paper, scanning documents, and duplex printing.

OIT

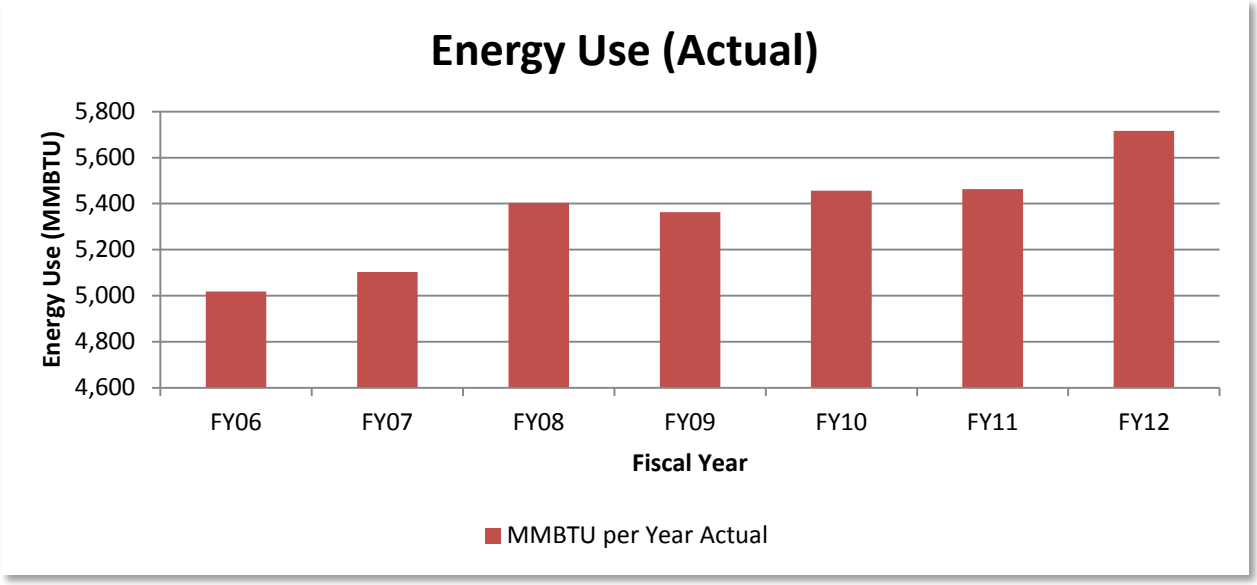
Office of Information Technology (OIT)

Since FY'09, OIT has included a "Greening Tips" section in the OIT Newsletter which in general contained at least 5 tips that people could use at home, work or both and covered a wide range of topics (power, water, paper, etc.). In addition, OIT has partnered with the US EPA Energy Star Program to provide several PC Power Management webinars.

At the end of FY'12, OIT had installed the Big Fix Power Management Software on approximately 9,500 state-owned computers (1,500 computers still awaiting implementation). This tool is a comprehensive power control tool reducing energy usage and costs by turning off inactive computers, even for short periods of time. It is estimated that this software will save the state approximately $25 for each of the 11,000 computers using it, with total savings in the hundreds of thousands of dollars and energy savings over 2 million kWhs. In FY'12, the OIT also started to consolidate their data centers which will save the state thousands of dollars while savings a significant amount of energy. See the *Energy Section* of the report for more details.

See the Office of Governor section below for petroleum consumption.

Between FY'06-FY'12, OIT has increased their energy use for their communication towers by 14% or 698 MMBTU.[5] This is primarily due to an increase in equipment in each tower. During this same period, OIT added over 100 new communication channels to support first responders across the state.



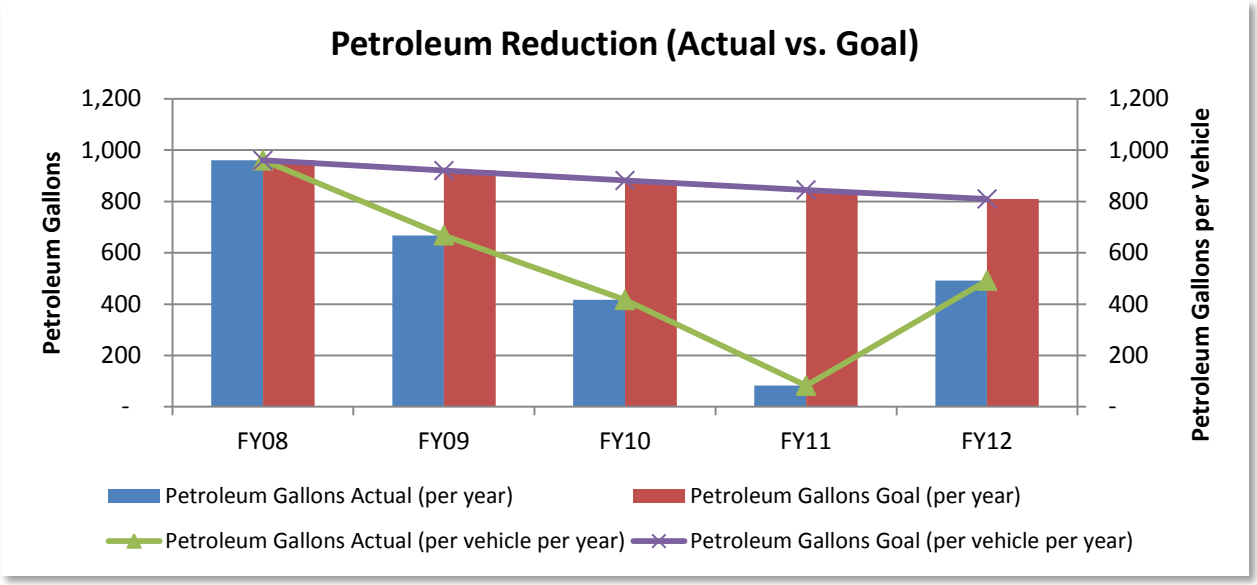
SOS

Secretary of State's Office (SOS)

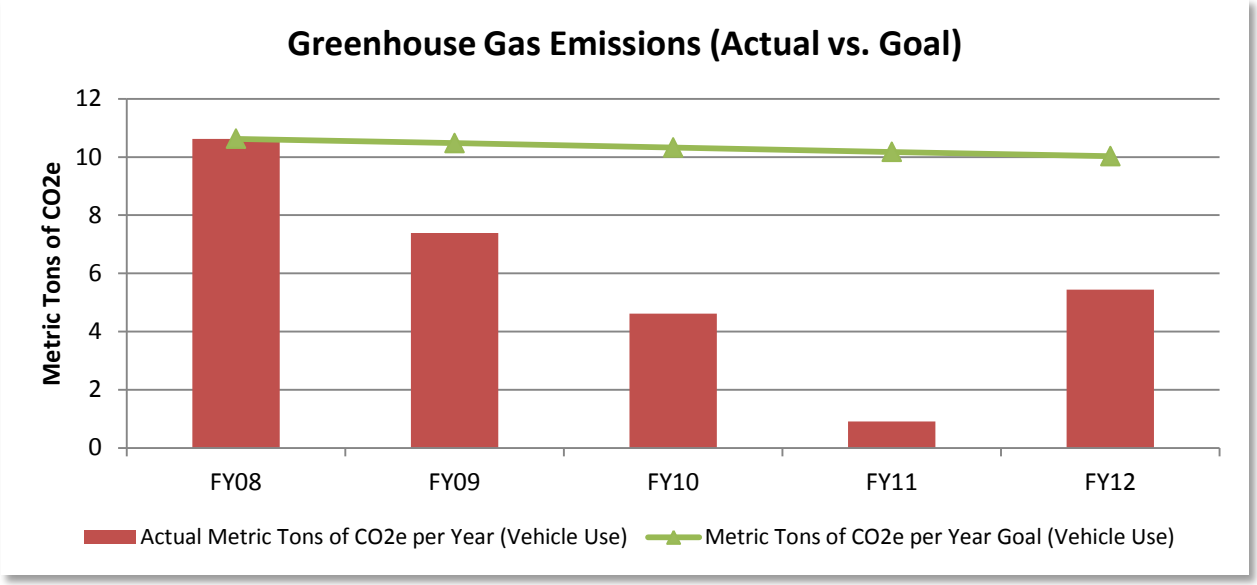
In FY'06, SOS was a very paper-heavy organization. In FY'12, the SOS has become vastly paperless by switching many paper-heavy programs to online such as voter and business registration and various filings. In addition they have implemented several innovative programs such as allowing employees to use administrative leave to complete "green" projects at their residence and offering Bingo and Raffle training online eliminating transportation needs.

The SOS owns one vehicle which was initially considered exempt from the petroleum reduction requirement. Therefore, their baseline starts in FY'08.

[5] Energy use in the communication towers is not required to be reduced.



Between FY'08 and FY'12, SOS reduced their GHG for their one vehicle by almost 50%.

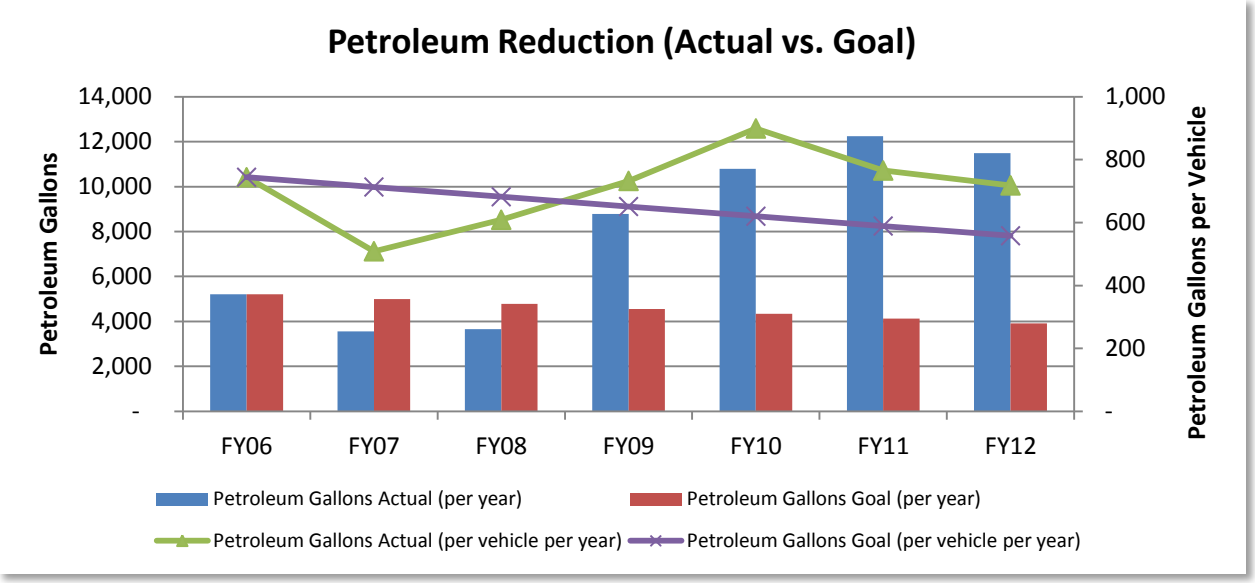


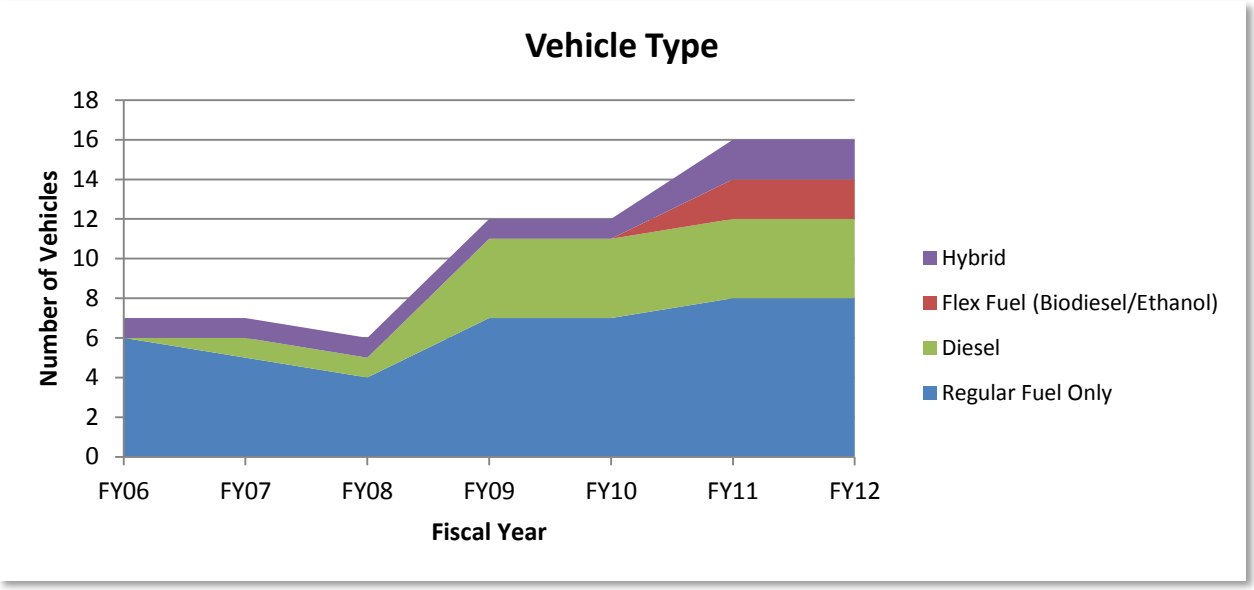
Office of the Governor

Office of the Governor

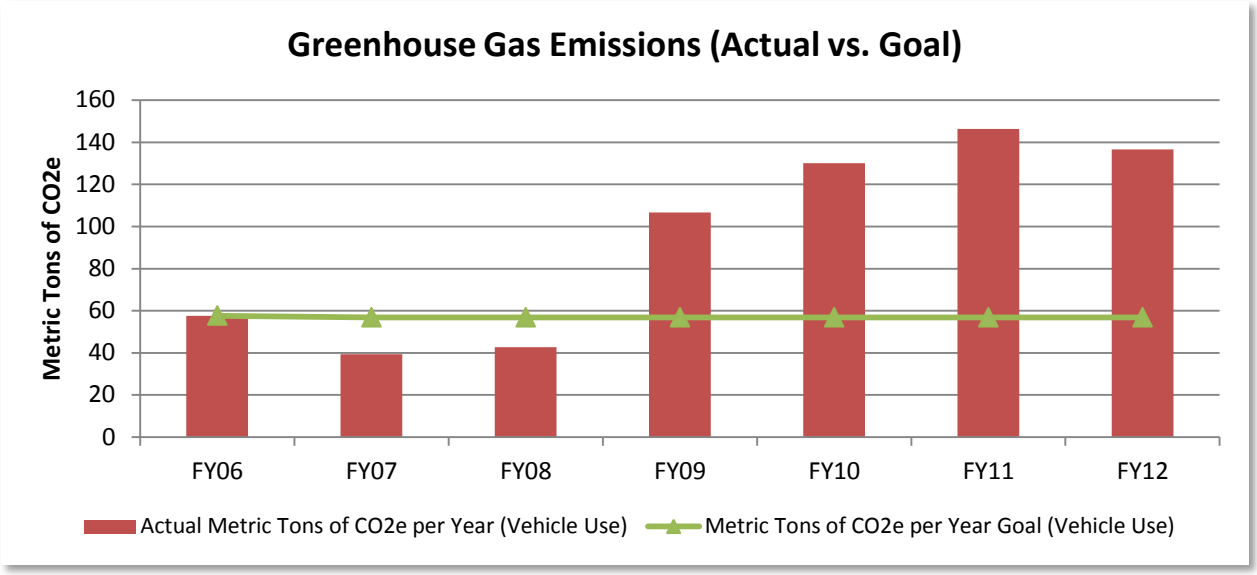
It is not possible to split out the vehicle data for the Office of the Governor into individual sub-agencies therefore we have consolidated the vehicle data for the Office of Economic Development, CEO, Homeland Security and OIT into one section. See above sections for more info on CEO and OIT.

Between FY'06 and FY'12 the petroleum use went up by 121% (6,286 gallons). This increase can be directly correlated with the 129% increase in vehicles (7 to 16 vehicles) and the increase responsibility of these sub-agencies due to the consolidation of OIT and the large increase in ARRA dollars given to the CEO.


Petroleum Reduction (Actual vs. Goal)
Petroleum Gallons
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
1,000
800
600
400
200
-
Petroleum Gallons per Vehicle
FY06
FY07
FY08
FY09
FY10
FY11
FY12
Petroleum Gallons Actual (per year)
Petroleum Gallons Goal (per year)
Petroleum Gallons Actual (per vehicle per year)
Petroleum Gallons Goal (per vehicle per year)


Vehicle Type
Number of Vehicles
18
16
14
12
10
8
6
4
2
0
FY06
FY07
FY08
FY09
FY10
FY11
FY12
Fiscal Year
Hybrid
Flex Fuel (Biodiesel/Ethanol)
Diesel
Regular Fuel Only

The Office of the Governor's GHG emissions have increased by 137% since FY'06.



Appendix B: High Performance Certification Program

Project Name	LEED (NC, EB, other) Goal / Result	Reason for HPCP	Building Type	Status / Date of Certification
DPA – Division of Central Services				
Executive Mansion	LEED-EB, Certified	Ex Order	Office / Residence	November 2008
State Capitol Building	LEED-EB, Certified	Ex Order	Office	August 2008
State Human Services Building	LEED-EB, Certified	Ex Order	Office	August 2006
State Office Building	LEED-EB, Certified	Ex Order	Office	August 2006
Department of Corrections				
Multi-Use Support Building, Youth Offender System	LEED-NC, Gold	Statute	Correctional	In Design, Project on Hold for Funding
Colorado School for the Deaf and Blind				
Gottlieb Renovation	LEED-NC, Gold	Statute	Academic	Submitted for Review
Department of Public Health and Environment				
Summitville Mine Superfund Site	N/A	Statute	Water Treatment Plan	Waiver granted.
Colorado Department of Labor and Employment				
Addition/Renovation CDLE Office, 251 E12 Ave	LEED-NC, Certified	Ex Order	Office	August 2005
Colorado Historical Society				
Colorado History Center	LEED-NC, Gold	Statute	Office	Submitted for Review
University of Colorado – Denver & Anschutz Medical Center				
Academic Building 1	LEED-NC, Gold	Statute	Academic	In Design
Business School at 1475 Lawrence	LEED-CI, Gold	Statute	Academic	Submitted for Review
Center for Bioethics and Humanities	LEED-NC, Gold	Policy	Medical	In Construction
Health and Wellness Center	LEED-NC, Gold	Policy	Medical	Submitted for Review
Lazzara Center for Oral Facial Health	LEED-NC, Gold	Policy	Medical	Submitted for Review
School of Pharmacy & Pharmaceutical Science	LEED-NC, Gold	Policy	Medical	December 2011
University of Colorado – Boulder				
Andrews Hall	LEED-NC, Gold	Policy	Dormitory	June 2010
Arnett Hall	LEED-NC, Gold	Policy	Dormitory	July 2009
ATLAS	LEED-NC, Gold	Policy	Academic	February 2007
Basketball/Volleyball Practice Facility	LEED-NC, Platinum	Policy	Athletics	May 2012
Buckingham Hall	LEED-EB, Gold	Policy	Dormitory	June 2011
Campus Heating/Cooling Plant	LEED-NC, Gold	Statute	Power Plant	In Construction
Center for Community	LEED-NC, Gold	Policy	Office	May 2012
Institute for Behavioral Science	LEED-NC, Platinum	Policy	Academic	August 2012
JILA Addition	LEED-NC, Gold	Policy	Academic	October 2012
Kittredge Central	LEED-NC, Gold	Policy	Dormitory	In Construction
Kittredge West Renovation	LEED-NC, Gold	Policy	Dormitory	In Construction
Leeds Business School Addition	LEED-NC, Gold	Policy	Academic	March 2008
Student Recreation Center Addition/Renovation	LEED-NC, Gold	Policy	Recreation	In Construction
Smith Hall	LEED-EB, Gold	Policy	Dormitory	August 2012
Systems Biotechnology	LEED-NC, Platinum	Policy	Academic	September 2012
University Memorial Center	LEED-EB, Silver	Policy	Office/Retail	June 2006
Visual Arts Complex	LEED-NC, Gold	Policy	Academic	January 2010
Williams Village North	LEED-NC, Platinum	Policy	Apartments	December 2011
Wolf Law	LEED-NC, Gold	Policy	Academic	March 2007

Project Name	LEED (NC, EB, other) Goal / Result	Reason for HPCP	Building Type	Status / Date of Certification
University of Colorado – Colorado Springs				
Events Center	LEED-NC, Gold	Policy	Office	January 2010
Lane Center for Academic Health Sciences	LEED-NC, Gold	Statute	Academic	In Design
Recreation Center	LEED-NC, Gold	Policy	Recreation	August 2008
Science Building Renovation	LEED-CI, Gold	Policy	Academic	Submitted for Review
Science Engineering Building	LEED-NC, Gold	Policy	Academic	August 2009
Summit Village Expansion	LEED-NC, Gold	Policy	Dormitory	In Construction
Colorado State University				
Athletics Academic and Training Center	LEED-NC, Gold	Policy	Athletics	April 2010
Aspen Hall	LEED-NC, Gold	Policy	Dormitory	April 2010
Behavioral Sciences Building	LEED-NC, Gold	Policy	Academic	June 2012
CSU Forest Service Fire Management Building	LEED-NC, Certified	Policy	Office	June 2012
Engineering II	LEED-NC, Gold	Statute	Academic	Submitted for Review
Guggenheim Hall	LEED-CI, Silver	Policy	Academic	December 2005
HPCRL Lab Addition	LEED-NC, Gold	Policy	Research	October 2010
Indoor Practice Facility	LEED-NC, Gold	Policy	Athletics	March 2011
Lake Street Parking Garage	LEED-NC, Gold	Policy	Parking	April 2012
Lory Student Center Theatre	LEED-NC, Gold	Policy	Auxiliary	In Construction
Morgan Library Expansion	LEED-NC, Gold	Statute	Academic	In Construction
Research Innovation Center	LEED-NC, Gold	Policy	Research	June 2011
Rockwell Hall Addition	LEED-NC, Gold	Policy	Academic	August 2010
Student Recreation Center Addition	LEED-NC, Gold	Policy	Recreation	January 2012
Transit Center	LEED-NC, Gold	Policy	Bus Stop	June 2007
Colorado State University – Pueblo				
Academic Resources Center - Renovation	LEED-EB, Gold	Statute	Academic	Submitted for Review
Crestone	LEED-NC, Gold	Policy	Dormitory	Self Verified
Culebra	LEED-NC, Gold	Policy	Dormitory	Self Verified
Greenhorn	LEED-NC, Gold	Policy	Dormitory	Self Verified
Fort Lewis College				
Animas Hall	LEED-NC, Gold	Policy	Dormitory	April 2010
Berndt Hall (Biology)	LEED-NC, Gold	Policy	Academic	January 2011
Berndt Hall (Geosciences/ Physics/ Engineering)	LEED-NC, Gold	Statute	Academic	On Hold for Construction Funds
Fort Lewis College Student Union	LEED-NC, Gold	Policy	Office/Retail	August 2011
University of Northern Colorado				
Butler-Hancock Renovation and Expansion	LEED-NC, Gold	Statute	Academic/ Athletics	December 2010
Colorado Mesa University				
Business & Technology Center	LEED-NC, Gold	Policy	Academic	October 2009
Houston Hall	Green Globes, 3 Globes	Statute	Academic	September 2012
Wubben Hall and Science Center	LEED-NC, Gold	Statute	Academic	Submitted for Review
Western State University Colorado				
Borick Business Building	LEED-NC, Silver	Policy	Academic	April 2008
College Center	LEED-NC, Gold	Policy	Office/Retail	August 2010
Kelley Hall	LEED-NC, Gold	Policy	Academic	July 2010
Paul Wright Gymnasium Expansion & Renovation	LEED-NC, Gold	Policy	Recreation	In Construction
Pinnacles Housing	LEED-NC, Gold	Policy	Dormitory	In Construction
Taylor Hall	LEED-EB, Silver	Statute	Academic	April 2012
Colorado School of Mines				

Brown Hall Addition	LEED-NC, Gold	Statute	Academic	September 2012
Marquez Hall Petroleum Engineering	LEED-NC, Silver	Policy	Academic	Submitted for Review
Maple Hall	LEED-NC, Silver	Policy	Dormitory	Submitted for Review
W. Lloyd Wright Student Wellness Center	LEED-NC, Silver	Policy	Recreation	Submitted for Review
Weaver Towers Renovation	LEED-EB, Silver	Policy	Dormitory	In Construction
Welcome (Visitor's) Center	LEED-NC, Silver	Policy	Auxiliary	In Design
Project Name	LEED (NC, EB, other) Goal / Result	Reason for HPCP	Building Type	Status / Date of Certification
Auraria Higher Education Center				
Science Building - renovation	LEED-EB, Gold	Policy	Academic	June 2012
Science Building - new addition	LEED-NC, Gold	Statute	Academic	January 2011
CCD- Student Learning & Engagement Building	LEED-NC, Gold	Statute	Academic	In Construction
Metro- Hotel & Hospitality Learning Center	LEED-NC, Silver	Policy	Academic/ Hotel	Submitted for Review
Metro-Student Success Building	LEED-NC, Gold	Policy	Academic	Submitted for Review
Colorado Northwestern Community College				
Academic Building, Craig Campus	LEED-NC, Gold	Statute	Academic	April 2012
Front Range Community College				
Science Classroom Addition and Renovation, Larimer Campus	LEED-NC, Gold	Statute	Academic	Submitted for Review
Morgan Community College				
Nursing, Health Science & Technology Building	LEED-NC, Gold	Statute	Academic	October 2011
Northeastern Junior College				
New Residence Hall	LEED-NC, Silver	Policy	Dormitory	May 2012
Pueblo Community College				
Academic Building, Learning Center	LEED-NC, Gold	Statute	Academic	Submitted for Review
Colorado Department of Human Services				
CSVC at Homelake, Domiciliary Renovation	LEED-NC, Platinum	Ex Order	Residence	July 2011
Department of Military and Veterans Affairs				
Alamosa Readiness Center	LEED-NC, Silver	Statute	Military	In Construction
Buckley Army Aviation Support Facility	LEED-NC, Silver	Fed Policy	Military	December 2006
Fort Lupton Readiness Center	LEED-NC, Gold	Fed Policy	Military	August 2011
Grand Junction Readiness Center	LEED-NC, Silver	Fed Policy	Military	In Construction
Windsor Readiness Center	LEED-NC, Silver	Statute	Military	In Construction
Colorado Judicial Department				
Ralph L Carr Justice Complex	LEED-NC, Gold	Statute	Office	In Construction
Department of Natural Resources - Division of Wildlife				
Gunnison Office/Discovery Center	LEED-NC, Gold	Statute	Visitor's Center	On Hold for Construction Funds

(1) *LEED™ Certifications: EB – Existing Building; CI – Commercial Interior; NC – New Construction*

Appendix C: State Agency Energy Performance Contracting Activities

AGENCY	Feasibility Study, YES/NO (Year) Milestone #1	Potential Energy Conservation Measures (ECMs) Evaluated or Completed Milestone #2	Energy Performance Contract (EPC) / Energy Management Program Status	EPC Contract Size ($), Term (Years), Funding Method	Annual Energy / Contract Savings (1st Year)	Total Value of Identified CM Needs Funded by EPC
Department of Personnel & Administration Division of Central Services (Includes 1881 Pierce, State Capitol Building, Judicial/Heritage Buildings, CDLE)	YES (2002), and included all buildings in the downtown complex vicinity.	Phase 1: Lighting, Water, HVAC Controls, Chiller System, Heating Plant, Insulation, VFDs, Energy Resource Conservation Program	EPC signed on December 2003 Measurement and verification of savings started.	$8,771,349 19 year loan, Bank loan and XCEL DSM rebates	$631,009	$2,271,000
		Phase 2: New Chiller, New Boilers, HVAC Replacement, Lighting Controls, LEED-EB in three downtown buildings, Photovoltaic system	Amendment signed on February 2005. Measurement and verification of savings started.	$4,316,461 19 years Bank loan and XCEL DSM rebates	$294,376	$2,005,330
		Phase 3: LEED-EB, Ground Source Geo-exchange (Executive Mansion), Lighting Controls, HVAC, Plumbing, PV systems	Amendment signed on May 2008. Measurement and verification of savings started	$9,257,026 19 years Bank loan and XCEL DSM rebates.	$733,856	$0
		Phase 4: Geo Exchange for Capitol grounds. Lights, Mechanical System	Construction on Open-Loop Geo-exchange project started.	$4,600,000, DOE Grant $500,000 Internal Funds, $1,541,716, 15 Years Bank Loan.	$100,554	$4,000,000
Judicial Department	YES (2002), Included in DPA project	Lighting, Water, HVAC Controls, Flat Plate Chiller, New Boilers, LEED-EB	Judicial Building and the History Museum work financed and managed as part of the DPA Energy Performance Contract listed above. Judicial Department compensated DPA for the lost savings necessary for the loan payments due to the demolition of the Judicial complex buildings.			
Department of Labor and Employment	YES (2002), Included in DPA project	Lighting, Water, HVAC Controls, Flat Plate Chiller, New Chiller, New Boilers, LEED-EB	Financed and managed as part of the DPA Energy Performance Contract listed above. Project included the CDLE building at East 12th Ave, Denver.			
Department of Public Safety – Camp George West	YES (2002), Included in DPA project	Limited potential because of recent modifications to some buildings or limited hours or energy use in other buildings.				
Department of Public Safety - Statewide	YES (2002)	Most of the buildings are statewide, small, and the energy conservation projects can be funded through the utility line item or as part of a controlled maintenance project.				
Department of Revenue	Motor Carrier Services	Lights, Boilers, Controls, Water	Technical Energy Audit did not justify an Energy Performance Contract			N/A

AGENCY	Feasibility Study, YES/NO (Year) Milestone #1	Potential Energy Conservation Measures (ECMs) Evaluated or Completed Milestone #2	Energy Performance Contract (EPC) / Energy Management Program Status	EPC Contract Size ($), Term (Years), Funding Method	Annual Energy / Contract Savings (1st Year)	Total Value of Identified CM Needs Funded by EPC
	Pierce Street Building, YES (2002), Included in DPA project	Lights, Boilers, Flat Plate Chiller, Controls, Ventilation components, PV system	Financed and managed as part of the DPA Energy Performance Contract listed above.			
Office of Information Technology (DPA)	YES (2003)	Limited potential because of the type and location of buildings. Most buildings are small and remote with limited lighting, heating or ventilation equipment. The energy usage is primarily for the communication equipment.				
Department of Agriculture (CDA) Administration	YES (2003)	Lights, Mechanical Equipment, Water Efficiency.	EPC signed January 2011. In Final Stages of Construction.	$1,836,564 13 Years, Bank Loan	$146,570	$905,675
CDA - State Fair (CDA)	YES (2003)	Lights, Mechanical Equipment, Water Efficiency, Architectural				
Department of Corrections	YES (2003)	CTCF – DDC controls, Lights, Boiler, Steam System, Water	EPC signed December 2010, Measurement and verification of savings started	$7,141,848 20 Years, Bank Loan	$362,198	$2,327,940
		BVCC – District Heating Plant, DDC Controls, Lights, Pumps.	EPC signed January 2011, In Construction	$7,368,588 15 Years, Bank Loan	$584,572	$1,516,626
		SCF – Chiller Replacement, DDC Controls, Lights, Pumps.	EPC signed, January 2012, In Construction.	$6,012,340 14 Years, Bank Loan	$428,848	$1,500,000
			FCF Technical Energy Audit in Start-up, September 2011			
			AVCF & LCF combined Facility-wide Technical Energy Audit in Start-up.			
Dept. of Education - CO School for the Deaf & Blind	YES (2003)	Steam Plant, Lighting, Controls	EPC Signed October 2009, Measurement and verification of savings started	$1,747,431 15 Years, Bank Loan, $242,139 CSDB Funds	$115,709	$600,000
Dept. of Education – Talking Book Library		Lighting, HVAC, Controls	EPC Signed August 2010, Measurement and verification of savings started	$219,909 Self Funded	$16,401	$218,409
Department of Public Health and the Environment	YES (2003)	Recommissioning, lighting, boiler controls, waterless urinals, vending misers, PV systems, and a Xeriscape project. CDPHE will continue to initiate energy conservation work with controlled maintenance, capital construction, internal funds, and Federal funds.				

AGENCY	Feasibility Study, YES/NO (Year) Milestone #1	Potential Energy Conservation Measures (ECMs) Evaluated or Completed Milestone #2	Energy Performance Contract (EPC) / Energy Management Program Status	EPC Contract Size ($), Term (Years), Funding Method	Annual Energy / Contract Savings (1st Year)	Total Value of Identified CM Needs Funded by EPC
Department of Human Services	YES (2003)	CMHIFL: Lighting, HVAC, Water Conservation.	EPC signed May 2005 Measurement and verification of savings started	$728,021 12 Years Bank Loan and XCEL DSM Rebates	$84,317	See Below
		Trinidad SVNH: Contract amended, Phase 2: Lighting, Boilers	EPC signed July 2005 Measurement and verification of savings started	$707,562 13 Years Bank Loan	$72,197	N/A
		Florence SVNH: Baseboard heating system, Air-Conditioning improvements	EPC signed August 2005 Measurement and verification of savings started	$2,688,603 12 years Bank Loan	$345,069	N/A
		Homelake SVNH: Lighting, Central Plant HVAC Upgrades, Water Conservation, Irrigation Automation.	EPC signed October 2006 Measurement and verification of savings started	$810,702 15 years Bank Loan and GEO Grant	$78,197	N/A
		Walsenburg SVNH: Lighting, HVAC and Controls, Water Conservation	EPC signed April 2007 Measurement and verification of savings started	$1,126,127 15 years Bank Loan	$187,145	N/A
		Rifle and Fitzsimons: Lighting, HVAC and Controls, Water Conservation, Irrigation	EPC signed November 2011, In Construction	$3,345,116 15 Years Bank Loan Federal Grant	$134,305	N/A
		Developmentally Disabled Facilities; GJRC and WRRC and Group Homes:: Lighting, HVAC and Controls, Water Conservation, Solar Shading	EPC signed October 2006 Measurement and verification of savings started	$1,114,682 12 years Bank Loan	$121,007	See Below
		Division of Youth Corrections Locations: Lighting, HVAC and Controls, Boiler Plant Decentralization, Water Conservation, Ditch Water Utilization for Irrigation	EPC signed July 2008 Measurement and verification of savings started	$9,922,214 13.2 years Bank Loan	$893,359	See Below
		CMHIP: Chiller Plant, Coal Plant Modifications, Lighting, HVAC and Controls, Water Conservation	EPC signed September 2011, In Construction.	$8,976,765 15 years Bank Loan	$1,045,063	See Below
		Total Value of Identified CM needs funded by the multiple phases of EPC work at DHS				*$7,566,156*

AGENCY	Feasibility Study, YES/NO (Year) Milestone #1	Potential Energy Conservation Measures (ECMs) Evaluated or Completed Milestone #2	Energy Performance Contract (EPC) / Energy Management Program Status	EPC Contract Size ($), Term (Years), Funding Method	Annual Energy / Contract Savings (1st Year)	Total Value of Identified CM Needs Funded by EPC
Department of Military Affairs	YES (2003)	Lighting and HVAC Controls (2 Buildings only)	EPC signed May 1996, Project closed out.	$166,718 10 years	$26,222	N/A
Department of Transportation	YES (2003)	Lights, Heating Equipment, Building Envelope, Water Efficiency.	EPC signed, January 2012, In Construction	$9,520,211 15 years, Bank Loan	$682,395	N/A
Cumbres & Toltec Scenic Railroad Commission	YES (2003).	Limited Potential. Type and location of buildings does not warrant an energy performance contract.				
Department of Natural Resources		Lighting, Water, Boilers, Irrigation	Division of Parks signed the Energy Audit, April 2009. Internally funded energy efficiency projects based upon the energy audit.			N/A
		Lighting, Water, Boilers, Irrigation.	Division of Wildlife signed the Energy Audit, June 2010. Audit is completed. Waiting for internal funds to implement audit findings.			N/A
Colorado Historical Society	YES (2003)	Energy efficiency projects managed through the normal operations and maintenance process or through a controlled maintenance project. Geothermal heating system under design/construction for the Fort Garland site. Most of the buildings owned by the Historical Society have particular design requirements that limit some energy conservation measures.				
Adams State University	YES (2003)	Lighting, Heating Plant.	1996 EPC, Completed in May 1997, Guarantee is Completed.	$1,354,255 10 years	$246,594	$278,000
		Lights, Metering	2010 EPC-Phase 1: Signed February 2010. In Construction	$1,214,188 16 Years, Bank Loan	$95,639	$0
		Mechanical Equipment, Water Efficiency	2011 EPC-Phase 2: Amendment, In Construction	$1,531,622 15 Years, Bank Loan	$120,106	$0
Auraria Higher Education Center	New feasibility Energy Analysis completed November 2006.	Lighting, Water Conservation, Sub Metering, HVAC Equipment, Expand DDC, Variable Speed Pumping, Chillers, Boiler Plant, Pool Cover	EPC signed September 1996 Completed in May 1997 Guarantee is Completed	$2,135,119 10 years	$284,370	$1,569,300
			Reviewing options for a new Energy Performance Contract.			
Colorado Mesa University	YES (2003)	Lighting, Energy Management System, HVAC, Commissioning.	Contract Signed on May 2008. Measurement and Verification process started.	$2,111,278 15 years, Bank Loan, XCEL DSM Rebates	$201,458	$1,464,780
Colorado School of Mines	YES (2010)	Lights, Water, Irrigation, Heat Recovery.	EPC signed on April 2011 Measurement and Verification process started.	$2,818,853 10 Years, Bank Loan	$307,242	$0
Colorado State University	YES (2003)	Lighting, Heating Plant, HVAC Controls, Water Efficiency, Chillers, Resource Conservation Program. School has an Energy Management Program that funds many small energy conservation projects gas and recently started an internally funded energy efficiency project on many campus facilities. The school has reduced its energy usage at the same time the campus was constructing new facilities or renovating existing facilities.				

AGENCY	Feasibility Study, YES/NO (Year) Milestone #1	Potential Energy Conservation Measures (ECMs) Evaluated or Completed Milestone #2	Energy Performance Contract (EPC) / Energy Management Program Status	EPC Contract Size ($), Term (Years), Funding Method	Annual Energy / Contract Savings (1st Year)	Total Value of Identified CM Needs Funded by EPC
Colorado State University - Pueblo	N/A	Lighting, HVAC Controls, Steam Traps, Irrigation Controls	1997 EPC: Completed July 1997 Guarantee is Completed.	$1,055,005 10 years, Bank Loan	$167,019	$565,251
	YES (2003)	Boiler Plant Decentralization, Chillers, Lighting, Kitchen Retrofit.	2004 EPC: Construction completed June 2006, Measurement and Verification process started.	$6,051,607 12 years, Bank Loan	$427,585	$3,900,000
Fort Lewis College	YES (2003)	Boiler Replacement, Lighting Retrofit, Water efficiency, and HVAC Controls.	EPC signed March 2012, In Construction.	$9,400,000 20 Years, Bank Loan	$330,418	$125,820
University of Colorado - Boulder	YES (2003)	Housing Department implement projects with an EPC - Lighting, Water, Controls, Boilers	Housing Dept Contract Signed September 2004	$6,000,599 12 years	$775,457	N/A
		Main campus, general funded buildings	School has an Energy Management Program that funds many small energy conservation projects and oversees the direct purchase of natural gas. The school has reduced its energy usage at the same time the campus was constructing new facilities or renovating existing facilities.			
University of Colorado - Colorado Springs	YES (2003)	School has an Energy Management Program that funds many small energy conservation projects.				
University of Colorado - Denver	YES (2010)		ESCo selected and the Technical Energy Audit Started.			
University of Northern Colorado	YES (2003)	Phase 1: Lighting, Water, Utility Rate Modification, Resource Conservation Program	EPC signed May 2003, Construction Completed April 2004, Measurement and Verification process started.	$1,495,446 12 years, Bank Loan	$322,294	Both Phases $2,061,968
		Phase 2: Heating Plant upgrades, DDC Controls, HVAC, and Evaporative Cooling.	EPC signed February 2004, Construction Completed, In Construction, Measurement and Verification process started.	$3,172,209 12 years, Bank Loan	$313,691	
Western State Colorado University	YES (2003)	Lighting, Heating Plant, HVAC Controls.	1996 EPC signed December 1996 Guarantee is Completed.	$3,334,399 10 years	$484,117	$477,078
		Lighting, Controls, HVAC, Window, Retro-Commissioning, Water	2009 EPC signed Nov 2009. Measurement and Verification process started.	$2,002,374 15 Years	$157,380	$0

AGENCY	Feasibility Study, YES/NO (Year) Milestone #1	Potential Energy Conservation Measures (ECMs) Evaluated or Completed Milestone #2	Energy Performance Contract (EPC) / Energy Management Program Status	EPC Contract Size ($), Term (Years), Funding Method	Annual Energy / Contract Savings (1st Year)	Total Value of Identified CM Needs Funded by EPC
Arapahoe Community College	YES (2003)	Lights, Heating systems, Cooling Systems. ACC will continue to pursue opportunities to initiate energy conservation work with funded CM and CC projects.				
Colorado Community Colleges @- Lowry	YES (2008)	Lights, Heating systems, Cooling systems, Controls	EPC signed June 2009. Measurement and Verification process started.	$1,545,758 15 Years, Bank Loan, XCEL DSM Rebates, Internal Funds.	$162,188	$509,393
Colorado Northwestern CC	YES (2003)	Lights, Heating, Boiler replacement, Cooling Systems, Utility Management System. New Ground Source Heat Pump for the new Craig Campus.	As part of larger Rangely community group, EPC signed September 2008. Rangely and Craig Campuses. Measurement and Verification process started.	$6,493,084 Total. $1,339,698 Financed 19 Years, Bank Loan, Internal Funds, Grants.	$108,585	$0
Community College of Aurora	YES (2003)	Currently in the process of developing an ESCO Solicitation to upgrade controls and then research other potential measures throughout their facilities.				
Front Range Community College	YES (2003)	Lighting Retrofits, Water Efficiency, HVAC Upgrades.	Contract in final stages of signing.	$1,048,549	$69,593	$0
Lamar Community College	YES (2010)	Lights, Controls, Boiler, HVAC.	Contract Signed June 2011. Measurement and Verification process started.	$3,113,305 19 Years, Bank Loan, Internal Funds	$156,327	$0
Morgan Community College	YES (2003)	Lights, Controls. Many energy projects completed with internal funds and the utility line item budget				
Northeastern Junior College	YES (2003)	Lights, Controls, Boilers, Utility Management System, Commissioning.	EPC signed May 2009. Measurement and Verification process started.	$2,466,631 12 Years. Bank Loan, XCEL DSM Rebates, Internal Funds.	$213,328	$0
Otero Junior College	YES (2003)	Lights, Controls, Boilers, HVAC. Many energy projects completed with internal funds and the utility line item budget.				
Pikes Peak Community College	YES (2003)	Limited potential for EPC. Energy conservation projects completed with CM funds.				
Pueblo Community College	YES (2003)	Limited potential for EPC. Energy conservation projects completed with CM funds.				
Red Rocks Community College	YES (2003)	RFP Issued, EPC Started, Boilers, Chiller, HVAC, Lighting, Water	EPC signed September 2005, Guarantee is Completed	$1,317,560 14.7 Years, Bank Loan, XCEL DSM Rebates, Internal Funds.	$89,408	$745,000

AGENCY	Feasibility Study, YES/NO (Year) Milestone #1	Potential Energy Conservation Measures (ECMs) Evaluated or Completed Milestone #2	Energy Performance Contract (EPC) / Energy Management Program Status	EPC Contract Size ($), Term (Years), Funding Method	Annual Energy / Contract Savings (1st Year)	Total Value of Identified CM Needs Funded by EPC
Trinidad State Junior College	YES (2003)	Lights, Boilers, Controls, Vending Machine Controls, Utility Management Software.	EPC signed May 2009. Measurement and Verification process started.	$1,136,299 13 Years, Bank Loan, Internal Funds.	$60,005	N/A
			TOTALS	**$153,460,232**	**$12,176,173**	**$34,607,726**

Appendix D: Recycling Tables

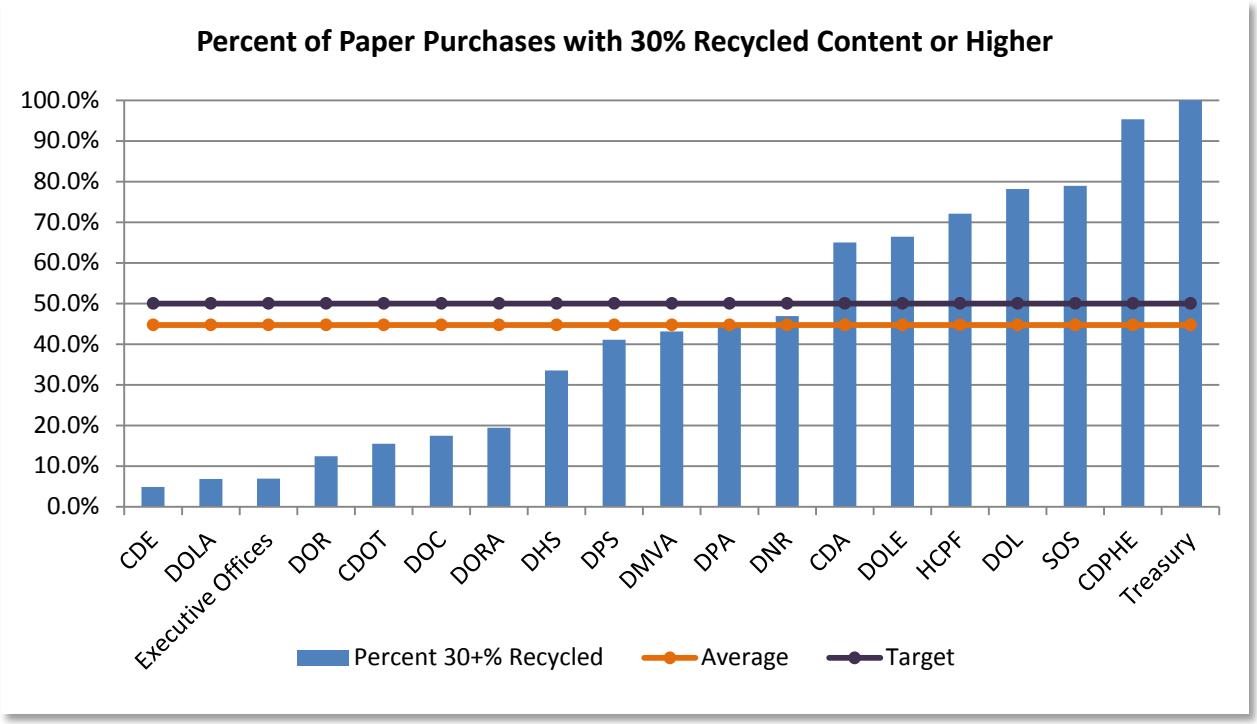
Agency	Address	Solid Waste Plan?	Recycling/ Composting Tons Reported 2012	TerraCycle Pen Recycling	Recycling Stream[1]	Additional Efforts/Comments
CDLE	633 East 17th St.	Yes	N/A		C	
CDOT	2000 S Holly St	Yes	491.00	x	C	Scrap Metal from the sign shop.
CDOT	4201 E Arkansas Ave	Yes	65.10	x	C	Doesn't include single stream recycling numbers. Electronics (5.38 tons), Coated Bookstock (21.05 tons),Mixed Paper (12.92 tons), Office pack (23.51 tons), Corrugated Containers (2.24 tons).
CDOT	Statewide Asphalt Use	Yes	213,028.00	N/A	N/A	Amount of recycled materials used in CDOT's Recycled Asphalt Pavement (RAP) program
CDPHE	4300 Cherry Creek Drive S	Yes	150.60	x	CO, C	97.25 tons Commingled, 3.5 paper shreds, 18.35 compost
CDPHE	8100 Lowry	Yes	37.50		CO, C	Commingled
CEO	1580 Logan St.	No	N/A	x	C	Cell phone and battery recycling provided as well.
DMVA	6848 S. Revere Way	Yes	427.12		C	
DNR	Statewide locations	Yes	N/A		Varies	Established protocols for all recycling operations. Started adding recycling costs into lease agreements.
DOC	Buena Vista Correctional Facility	Yes	See Notes		CO, C	Recycling numbers not available, Composting reported at 1,054 Cubic Yards
DOC	Delta Correctional Facility	Yes	116.00		CO, C	Including plastics in recycling operation
DOC	Fremont Correctional Facility	Yes	63.00		C	Cardboard, Aluminum cans, paper, plastic, Steel can
DOC	Limon Correctional Facility	Yes	35.00		C	LCF has added cardboard, metal cans and cloth to their recyclables. They are also working with a vendor to add recycled food waste to manufacture ethanol fuel.
DOC	Other Facilities	Yes	N/A		Varies	A plan for all facilities has been completed with a list of all of the materials they accept and recycle/compost. No numbers were reported at the time of this report.
DOC	Sterling Correctional Facility	No	844.00		CO, C	

DORA	1560 Broadway	Yes	54.82		CO, C	48.32 tons recycled, 6.5 tons composted
Agency	**Address**	**Solid Waste Plan?**	**Recycling/ Composting Tons Reported 2012**	**TerraCycle Pen Recycling**	**Recycling Stream[1]**	**Additional Efforts/Comments**
DPA	1001 E. 62 Ave.	No	15.35		C	
DPA	200 E. 14th Ave	No	3.36		C	
DPA (CDE)	201 E. Colfax Ave.	No	8.17		C	
DPA (CDLE)	251 E. 12th St.	Yes	16.33		C	
DPA (CGW)	15203 W. 12th Ave.	No	7.82		C	
DPA (DHS)	1575 Sherman St.	No	14.91		C	
DPA (DOL)	1525 Sherman St.	Yes	31.47	x	C	
DPA (DOLA/DNR)	1313 Sherman St.	Yes	19.54		C	
DPA (DOR)	1375 Sherman St.	No	31.55	x	C	Recycled 284 print cartridges
DPA (DOR)	1881 Pierce St.	No	8.71		C	Recycled an additional 35.2 tons of tax forms
DPA (DPS/AG)	700 Kipling St.	No	5.57		C	
DPA (HCPF)	1570 Grant St.	No	5.55		C	
DPA (OIT/DPS)	690 Kipling St.	No	9.03		C	
DPA (State Capitol)	200 E. Colfax Ave.	No	23.39		C	
DPS	710 Kipling St.	No	N/A		N/A	Leased space; DPS members voluntarily bring paper to 690 Kipling and 700 Kipling
TOTAL			**215,513**			

[1] P = Paper only, C= Commingled, CO = Composting

Appendix E: Paper Tracking

The following bar chart shows the percentage of each agency's paper purchases (by weight) that have a minimum PCW (post-consumer waste) content of 30%. The average across all agencies falls around 45%. "Executive Offices" includes Offices of the Governor. The state is falling slightly short of 24-103-207 C.R.S., which states that "recycled paper is required for at least 50% of all paper purchased and must contain a minimum of 30% Post Consumer Waste content."



Appendix F: Greening Government Delegates/Members

Agency	Representatives		
Colorado Energy Office (CEO)	Hillary Dobos		
Department of Agriculture (CDA)	Eric Lane	Kate McRoy	
Department of Corrections (DOC)	Diana Dean Patty Pettus	John Gillogley Jim Ramsey	Richard Markovich
Department of Education (CDE) Colorado Historical Society	Jill Matthews Andy Stine	Ted Hughes	Fran Herbert
Department of Health Care Policy & Financing (HCPF)	Diane Rodriguez	Heather Allen	
Department of Higher Education (DHE)	Maia Blom	Emma Glancy	
Department of Human Services (DHS)	Dave Piatek	Sam Tobin	
Department of Labor and Employment (CDLE)	Ron Arthur		
Department of Law (DOL)	Chris Braun		
Department of Local Affairs (DOLA)	Andy Hill		
Department of Military and Veterans Affairs (DMVA)	Brett Jackson	Michael Jaurrieta	
Department of Natural Resources (DNR)	Tom Browning	Katie Radke	Eric Scholz
Department of Personnel and Administration (DPA) Office of the State Architect Purchasing State Fleet	Richard Lee Rod Vanderwall Jeff Wylde Art Hale	Stan Miller	Michael Moore
Department of Public Health & Environment (CDPHE)	Patrick Hamel	Rachel Wilson-Roussel	Theresa Takushi
Department of Public Safety (DPS)	Jane Crisman		
Department of Regulatory Agencies	Brian Tobias		
Department of Revenue (DOR)	Cindy L. Koke		
Department of Transportation (CDOT)	Joe Mahoney	Sarah Mitchell	
Department of Treasury (CST)	Charles Scheibe		
Office of Information Technology (OIT)	Kate Polesovsky	Susan McMillin	
Secretary of State (SOS)	Cheryl D. Hodges	Michael Hagihara	

Appendix G: Executive Orders

D 2010-006

EXECUTIVE ORDER

Greening of State Government: Earth Day 2010

Pursuant to the authority vested in the Office of the Governor of the State of Colorado, I, Bill Ritter, Jr., Governor of the State of Colorado, hereby issue this Executive Order, on Earth Day 2010, to reduce the negative environmental impact of state government.

I. Background and Purpose

The daily activities of state government have a significant impact on the quality of Colorado's public health, environment and use of its natural resources. The 2009 Greening Government Annual Report Card, prepared by the Greening Government Council (the "Council"), indicated that the existing greening government programs are saving taxpayer dollars by reducing energy bills and hedging against future price spikes in fuel and electricity. Since I signed Executive Order D 0011 07, the State's Greening Government programs have saved taxpayers money in a variety of ways, including the following:

- Seventy-three percent of state agencies are engaged in some stage of Energy Performance Contracting (EPC). Four of these fiscal year 2009 projects will result in $1.6 million of energy bill savings per year.
- Water use reduction projects were started by four agencies that manage large buildings and facilities, resulting in conservation of over 158 million gallons of water. Many agencies across the state are positioned to take similar action.
- State agencies and higher education institutions installed eight solar energy projects, including one for the state capitol. The projects ranged from 5kW to 99kW in size.
- The state introduced the Environmentally Preferable Purchasing policy (EPP) in 2009 to help all agencies reduce their environmental imprint, including use of paper with recycled content.
- The state fleet reduced petroleum consumption by 11.6%, nearing the halfway mark to a 25% reduction goal. Much of this progress was due to the replacement of fleet vehicles with hybrid vehicles and use of alternative fuels.

To achieve our greening government goals and to measure that progress, further reductions in state agency consumption of water, energy, petroleum, and paper are necessary, and systematic collection of reduction data must be implemented. To implement these improvements and to commemorate the 40th Anniversary of Earth Day, this Order directs state agencies to take additional specific greening government actions.

II. Directives

The following are applicable to all state departments, agencies and offices headed by appointees of the Governor. I hereby order state agencies to achieve these actions:

A. Recycling

Each agency must develop and implement a plan for recycling applicable to their agency by June 30, 2011. The plan must include: clear goals; implementation procedures; methods to measure and assess progress;

and define a process for periodic review of results by senior management so that proper system adjustments will be made.

B. Paper

Each agency must develop and implement a plan for paper consumption reduction by December 31, 2010. At a minimum, the plan shall include the following components: double-sided document printing as default settings on printers and copiers; document scanning capabilities; encouragement of fewer print jobs by using on-line forms; and staff reminders to consider printing needs. Each plan shall establish methodologies to reliably measure and report paper consumption reduction achievements.

C. Purchasing

An Environmentally Preferable Purchasing policy was developed and implemented pursuant to Executive Order D 0011 07. This policy is hereby amended as follows to specifically address state purchases of bottled water: "State agencies should avoid purchases of bottled water except in these situations: where water supply is unavailable; bottled water is needed to protect safety and health; and for use in emergencies."

D. Climate Action Plan

1. To match the goals of the 2007 Climate Action Plan, State agencies shall:
    a. Achieve reductions in greenhouse gas emissions of twenty percent below 2005 levels by 2020. By 2050, state agencies must reduce greenhouse gas emissions by eighty percent below 2005 levels.
    b. Achieve waste diversion from landfills of seventy-five percent by 2020.

2. Agencies must provide information needed for annual greenhouse gas emissions reporting to the Greening Government Council on an annual basis. The Colorado Department of Public Health and Environment and the Governor's Energy Office will commence reporting of state agency greenhouse gas emissions to *The Climate Registry* in 2010 for calendar year 2009.

E. Renewable Energy

Agencies undertaking new construction and substantial renovations shall include in their capital construction request a review of renewable energy systems and related opportunities to optimize savings, including use of third-party power purchase agreements. These third party power purchase agreements can be used by state agencies to access the financial options available.

F. Petroleum Reduction

1. Each agency must strictly adhere to annual vehicle replacement plans proposed by State Fleet Management that call for purchase of low fuel consumption (high miles-per-gallon ratings), hybrid, flex- and alternatively-fueled, all-electric, and emerging technology vehicles.

2. Each agency shall develop a plan to improve the commuting options for its employees by December 31, 2010. The plans shall evaluate opportunities for: encouraging low fuel consumption or electric vehicles; making available electrical sources to recharge electric vehicles; encouraging use of mass transit or car pooling; and implementing or refining flexible work schedule or telecommuting policies.

G. Smart Use of Energy and Water

1. State agencies shall update the Energy Management Plans prepared under Executive Order D 0011 07 by March 31, 2011. These management plans must address water conservation opportunities in addition to energy.

2. All executive state agencies that own facilities are required to use EnergyCAP software to track utility bill information pertaining to the owned facilities. EnergyCAP software licenses have been purchased and are available to all executive agencies. EnergyCAP shall become the state agency standard utility tracking tool for energy and water consumption reduction tracking and to report progress towards reaching the greening government and greenhouse gas reduction goals.

3. Each executive agency that owns facilities must have, at a minimum, utility vendor bill data input into EnergyCAP for calendar year 2009 by June 15, 2010. Data covering the period from the greening government baseline date (fiscal year 2005-2006) forward must be entered into the EnergyCAP database by December 31, 2010. Systems established for entry of future ongoing vendor bills into EnergyCAP must be functional by December 31, 2010.

4. To conserve energy use at workstations, state agencies and employees shall use energy conserving software provided by the Governor's Energy Office.

H. Greening Government Council

1. Agencies shall coordinate and collaborate with the Council on all greening government and sustainability issues. Agencies shall notify the Council as early as practicable about any proposed policies impacting greening government and sustainability issues.

2. At least on an annual basis, each Executive Director shall review its agency's greening government results with its Council appointee to make adjustments needed to achieve the greening government goals.

The Department of Higher Education and Departments headed by statewide elected officials are strongly encouraged to adhere to this order for consistency and to take advantage of the environmental and cost avoidance benefits that result.

This Executive Order modifies, but does not replace, Executive Orders D 0011 07, D 0012 07, or D 005 05. The elements of these Executive Orders remain in place and are to be read in conjunction with this Executive Order.

III. Duration
This Executive Order shall remain in force until further modification or rescission by the Governor.
GIVEN under my hand and the Executive Seal of the State of Colorado, this twenty-second day of April, 2010.
Bill Ritter, Jr.

D 004 08

EXECUTIVE ORDER

Reducing Greenhouse Gas Emissions in Colorado

Pursuant to Article IV, Section 2 of the Colorado Constitution and the authority vested in the Office of the Governor of the State of Colorado, I, Bill Ritter, Jr., Governor of the State of Colorado, hereby issue this Executive Order declaring the state's greenhouse gas reduction goals, directing the Colorado Department of Public Health and Environment ("CDPHE") to develop regulations mandating the reporting of greenhouse gas emissions for major emitters, requesting the Public Utilities Commission to require utilities to submit electric resource plans for meeting greenhouse gas reduction goals, and directing CDPHE to propose, after a full vetting process and within 24 months, regulations requiring reduced greenhouse gas emissions from passenger motor vehicles.

1. Background and Need

Scientists tell us that to head off disruptions to our economy, environment and society by the second half of this century; we must reduce greenhouse gas emissions by at least 80% below 2005 levels by 2050. Many sectors of Colorado's economy, including agriculture, recreation, skiing, and tourism, could experience significant changes and impacts if emissions are not reduced. Because long term planning to address climate change is essential, this Executive Order establishes a goal of achieving an 80% reduction from 2005 levels by 2050. To meet this long term goal, we must first strive toward an interim goal, and this Executive Order establishes a goal of a 20% reduction from 2005 levels by 2020.

To achieve even our interim goal as efficiently as possible, we must have accurate data regarding the sources of greenhouse gas emissions within the state. Colorado, together with 38 other states, seven Canadian provinces, six Mexican states, and three tribal nations, has joined The Climate Registry, a voluntary greenhouse gas emissions reporting system. This voluntary registry provides a mechanism through which businesses, state agencies, local governments, and others can measure and report their greenhouse gas emissions. This voluntary system, however, will not provide the comprehensive data necessary to enable policy makers and business leaders to determine how best to meet our state's emissions reduction goal. This Executive Order directs CDPHE to draft, within 18-24 months, regulations to mandate reporting of greenhouse gas emissions from major sources.

In 2005, emissions from electricity production accounted for 36% of carbon dioxide emissions in Colorado. We must work with utilities, which provide a vital service to the state, to reduce their greenhouse gas emissions. The Public Utilities Commission ("PUC") requires the state's investor-owned utilities to periodically file an electric resource plan ("ERP") that shows how they will meet their customers' energy needs well into the future. This Executive Order requests the PUC to seek from each utility within its jurisdiction an ERP that includes an analysis that shows how the utility could achieve a 20% reduction in its greenhouse gas emissions from 2005 levels by the year 2020. We recognize that large utilities will have to weigh many approaches to achieve a 20% cut in emissions, including significant expansion of renewable energy sources and energy efficiency, investments in new clean coal technologies, retirement of old, inefficient coal-fired generating stations, purchases of carbon credits to offset emissions, and other strategies. The benefits to the state from such reductions include reduced air pollution, new jobs, as well as a more diverse, and therefore less volatile, energy supply portfolio.

To ensure that such plans can be achieved in the most efficient manner, this Executive Order also directs the Governor's Energy Office ("GEO") to work with the Department of Regulatory Agencies and other relevant agencies to identify regulatory and legislative changes that may be needed to provide investor-owned utilities with the appropriate incentives to invest in renewable energy sources, energy efficiency, carbon credits, and clean coal technologies.

Whether to allow the construction of new, conventional pulverized coal plants is an important decision that requires careful study and outreach to many key stakeholders. This Executive Order directs CDPHE and GEO to

evaluate alternatives for addressing greenhouse gas emissions from new coal-fired power plants in consultation with affected parties and to make a recommendation within 12 months.

Emissions in the transportation sector account for 23% of greenhouse gas emissions in Colorado. In the absence of federal action, state governments are taking direct action to ensure that automakers reduce emissions of both greenhouse gases and pollutants that cause high ozone levels. These standards must be thoughtfully and deliberately examined to determine if they make sense for Colorado. This Executive Order directs CDPHE to propose regulations, after a full vetting process and within the next 24 months, to the Air Quality Control Commission that will achieve maximum feasible and cost effective reductions of greenhouse gas emissions from passenger motor vehicles. This timeframe will allow CDPHE to engage in a stakeholder process to analyze issues associated with consumer choice, vehicle costs, driving performance at high altitude, and other issues that arise during the stakeholder process.

2. Declaration and Directive

A. State of Colorado Greenhouse Reduction Goal

1. I hereby declare that it shall be the goal of the State of Colorado to achieve the following greenhouse gas emissions reduction goals:
    a. By 2020, to reduce greenhouse gas emissions in Colorado to 20% below its 2005 levels
    b. By 2050, to reduce greenhouse gas emissions in Colorado to 80% below 2005 levels

2. State agencies are directed to join in a statewide effort, coordinated by CDPHE, the Department of Natural Resources, the Department of Agriculture, GEO, and the Governor's Office of Policy and Initiatives, to achieve these goals. This effort should consider, and where appropriate coordinate with, greenhouse gas reduction efforts occurring within local governments.

B. Reporting of Greenhouse Gas Emissions and State Inventory

1. I hereby direct CDPHE to develop and propose regulations, by no later than 24 months from the date of this Executive Order, to the Air Quality Control Commission mandating reporting of greenhouse gas emissions for all major sources. The reporting requirements should be phased in as standardized quantification protocols, baseline data, and other tools become available.

2. CDPHE is directed to plan for performing updates to the state's greenhouse gas emissions inventory, with the first update scheduled to be completed no later than 2012 and repeated every five years thereafter.

C. Greenhouse Gas Emissions from the Utility Sector

1. I hereby request that the PUC require from each utility within its jurisdiction an ERP for achieving a 20% reduction in its greenhouse gas emissions from 2005 levels by 2020.

2. I hereby direct GEO and the Department of Regulatory Agencies to identify regulatory and legislative changes that may be needed to provide investor-owned utilities with the appropriate incentives to reduce greenhouse gas emissions, and to reduce financial barriers to investments in renewable energy sources, energy efficiency, carbon credits, and clean coal technologies. The Executive Directors of these agencies will provide their suggestions to my office within 12 months of the date of this Executive Order.

3. I hereby direct CDPHE and GEO to evaluate policy options to address future demand for new coal-fired power plants. This effort shall consider, at a minimum, development of alternate sources of energy and options for reducing or mitigating greenhouse gas emissions from new plants. CDPHE and GEO shall evaluate these options in consultation with affected parties and make a recommendation to my office within 12 months of the date of this Executive Order.

D. Greenhouse Gas Emissions from the Transportation Sector

1. I hereby direct CDPHE to develop and implement a process for identifying and evaluating the benefits as well as potential impediments to measures designed to reduce tailpipe emissions of greenhouse gases from passenger cars and light duty trucks, including protection of consumer choice, vehicle costs, driving performance at high altitude, the utility and availability of alternative-fuel vehicles (including positive and negative effects on air quality), projected reduction in gasoline demand and consumption, and potential short- and long-term cost savings for consumers. As part of this effort, CDPHE shall develop a process for seeking the participation of all affected stakeholders and for periodically briefing the Air Quality Control Commission on these matters.

2. I further direct CDPHE, upon the completion of this process but in no case longer than 24 months from the date of this Executive Order, to propose to the Air Quality Control Commission a comprehensive proposal for reducing net emissions of greenhouse gases from the state's transportation sector, including measures to achieve the maximum feasible and cost-effective reductions of greenhouse gases from passenger cars and light duty trucks. This proposal should reflect the evaluation of costs and benefits achieved through the process outlined in D.1 and be tailored to the specific needs of Colorado.

3. Duration
This Executive Order shall remain in force until modified or rescinded by a subsequent Executive Order.

Given under my hand and
the Executive Seal of the
State of Colorado this 22nd
day of April, 2008.
Bill Ritter, Jr.
Governor

D0012 07
EXECUTIVE ORDER
Greening of State Government: Detailed Implementation

Pursuant to the authority vested in the Office of the Governor of the State of Colorado, I, Bill Ritter, Jr., Governor of the State of Colorado, hereby issue this Executive Order to establish policies and procedures to achieve the goals and objectives articulated in Executive Order D0011 07 and designed to reduce the environmental impact of state government.

1. Purpose
This order provides direction to the Governor's Energy Office ("GEO"), the Greening of State Government Coordinating Council ("Council"), and state departments and agencies regarding the implementation of Executive Order D 011 07, which establishes goals and objectives for the Greening of State Government. In addition, this order directs the GEO to develop sustainability standards for state facility leases.
This Executive Order modifies but does not replace Executive Order D 005 05. The Greening of State Government Coordinating Council ("Greening Council") formed pursuant to Executive Order D 005 05, shall continue under the lead of the Governor's Energy Office (GEO). This order is to be read in conjunction with Executive Orders D 005 05 and D 0011 07.

2. Directive

A. Reduction of State Energy Consumption
Executive Order D011 07 orders the Manager and Council to work with state agencies and departments to reduce overall energy use in all state facilities by 20% or more no later than the end of fiscal year 2011-2012 and to determine feasibility of energy performance contracting. State energy use in fiscal year 2005-2006 will constitute the baseline for all comparisons. To that end, I direct that:

1. The Greening Government Manager will be responsible for ensuring that all agencies and departments that have not yet developed an energy management plan and engaged in energy efficiency upgrades will, by January 2008, have a plan to do so.
2. For all state-owned facilities that have not yet engaged in performance contracting, as defined in Executive Order D 014 03 (Energy Performance Contracting to Improve State Facilities), the Greening Government Manager will facilitate performance of a feasibility study pursuant to the policies established in Executive Order D014 03. Where performance contracting is feasible, viable, and economically sound, those facilities shall engage in such contracts on a recommissioning basis. With assistance from the Office of State Planning and Budgeting (OSPB), the Greening Council shall develop standards defining whether such projects are "feasible, viable, and economically sound." The State's public higher education facilities are expected to follow these requirements to the greatest extent practicable.
3. From time to time, the Greening Government Manager, working with department energy managers, shall repeat these feasibility studies to determine if further efficiency gains are feasible.
4. Where performance contracting is not feasible, state agencies shall strive to reduce energy use by 10% from a fiscal year 2005-2006 baseline. State agencies shall make every effort to meet or exceed this goal no later than the end of fiscal year 2011-2012.
5. I hereby direct each agency and department to designate an energy management liaison. The GEO will assist in the training of all department energy management officers and in the implementation of best energy management practices.

B. Materials Management, Environmentally Preferable Purchasing, and Resource Management

Executive Order D011 07 establishes specific goals and objectives for reducing the impact of state materials and resource management decisions. In order to further achievement of these goals, I hereby direct all departments and agencies to develop and implement materials management, purchasing, and resource management policies that minimize the impact on public health, the environment and natural resources and reduce state government expenditures. To that end, I order that:

1. All agencies and departments shall work with the Greening Council to adopt a goal of "zero waste" from construction of new buildings and operation and renovation of existing facilities through re-use, reduction, recycling, and composting of waste streams.
2. All agencies and departments shall develop and implement strategies that minimize the public health and environmental impacts associated with agency land use and acquisition, construction, facility management, and employee transportation.
3. DPA, in cooperation with DPHE, shall develop purchasing policies for selecting environmentally preferable products. The policies shall:
    a. Be implemented by all state departments and agencies, and shall give preference to products that minimize environmental impacts over the lifetime of the product. At a minimum, the policy should consider a product's energy profile and recycled material content, toxicity, and impact on air and water resources.
    b. Require that each agency and department purchase equipment certified as Energy Star®-qualified where such equipment is available. Where such equipment is purchased, the energy savings features shall be utilized. DPA is authorized to provide a waiver for this requirement if Energy Star®- certified equipment is not available, appropriate, or cost-effective. DPA shall modify its Request for Bids to specify Energy Star®-compliant equipment.
    c. Policies regarding the purchase of electronic equipment shall require consideration of the life-cycle environmental and energy impacts of that equipment.
    d. The policies developed shall take into account the primary purpose of the products procured, and, for safety-critical products, shall ensure that public safety is not compromised.
4. The Greening Council, working with the Greening Government Manager, shall develop sustainability standards for new leases of state facilities. These standards shall address, at a minimum, energy efficiency, water conservation, recycling, and access to public transportation.

C. Greening of State Fleet Management

I hereby direct all state departments and agencies to take all reasonable actions to achieve, by June 30, 2012, a 25% volumetric reduction in petroleum consumption by state vehicles measured against a fiscal year 2005-2006 baseline. For the purposes of this Executive Order and of Executive Order D 011 07, "state vehicles" include vehicles managed by the Department of Personnel and the Colorado Department of Transportation (CDOT). The baseline should exclude vehicles used for law enforcement, emergency response, road maintenance, and highway construction. To that end, I order that:

1. State departments and agencies shall aggressively pursue achievement of this standard using all necessary strategies and initiatives, including:
    a. Restricting the purchase of four-wheel drive sport utility vehicles, except where necessary for law enforcement, emergency response, highway maintenance and construction or use in difficult terrain.
    b. Giving priority to replacement of pre-1996 light duty vehicles that have a city fuel efficiency rating of less than 25 miles per gallon.
    c. Acquiring hybrid gas/electric high efficiency vehicles, alternative and flex fuel vehicles, and other fuel efficient/low emission vehicles whenever practicable.
2. State agencies and departments shall report back to the Greening Council on an annual basis regarding the progress made towards achieving the goal of reducing petroleum consumption.

3. The Greening Council shall develop an education plan for state employees that includes the labeling of state-owned flexible fuel vehicles and provision of information about the location of flex-fuel stations so that ethanol blended and bio-diesel fuels can be used whenever possible. The Department of Agriculture shall purchase Flex Fuel Vehicles whenever practicable
4. The DPA will explore aggregate purchasing strategies among contiguous western states for future purchases of hybrid gas/electric, alternative fuel and flex-fuel technology vehicles.
5. State agencies shall use, when available, a minimum a 20% bio-diesel blend for diesel burning vehicles.
6. State agencies using flex-fuel vehicles or diesel vehicles shall track the fuel type purchased and report fuel consumption annually to the Greening Council for review. Departments shall adopt a goal of fueling flex fuel and diesel vehicles a minimum of 50% of the time with alternative fuels.
7. The DPA, in conjunction with GEO and DPHE, shall conduct a transportation efficiency audit, to be completed by December 1, 2007, to evaluate current state practices and make recommendations regarding:
    a. Appropriate vehicle utilization rate and size of agency fleets;
    b. Appropriate age and mileage for vehicle turnover to maximize performance and minimize maintenance costs and environmental impact;
    c. Environmental costs and benefits of personal vehicle use and reimbursement policies;
    d. Strategies for improving the overall efficiency of acquiring, using and maintaining all vehicles in the state fleet;
    e. Cost effectiveness of car-sharing services;
    f. Increasing opportunities for employee use of ride-sharing and mass transit on business travel, and
    g. Exploration of support for employee transit options.
    a. As part of this process, the Greening Council shall work with DPA to evaluate the state fleet and develop suggestions regarding how to increase average fuel efficiency and use of alternative fuels in state vehicles. The Council shall present the results of this study to the Governor by December 1, 2007.

8. When traveling on state business, all state employees shall give preference to major airports that are physically closest to the destination, with preference given to airports that are served by a mass transit system unless such option is not cost effective. Employees shall use mass-transit when traveling whenever feasible.

D. Renewable Energy Sources for State Energy Consumption
This section implements Executive Order D011 07's mandate that the Manager and Council work with GEO to support development of state renewable energy projects. To that end, I hereby direct GEO to implement a renewable energy outreach program for state agencies and departments to achieve the following goals:

1. Providing technical support for the use of direct renewable energy applications, such as wind, biomass, geothermal, and solar, on state facilities; and
2. Exploring funding for and feasibility of state-run renewable energy projects to provide energy to state facilities.

3. Duration
This Executive Order shall remain in force until further modification or rescission by the Governor. GIVEN under my hand and the Executive Seal of the State of Colorado, this 16th day of
April 2007.

Bill Ritter, Jr.
Governor

D 011 07
Executive Order
Greening of State Government: Goals and Objectives

Pursuant to the authority vested in the Office of the Governor of the State of Colorado, I, Bill Ritter, Jr., Governor of the State of Colorado, hereby issue this Executive Order to establish goals and objectives, designed to reduce the environmental impact of state government.

1. Background and Purpose
The daily activities of State government have a significant impact on the quality of Colorado's public health, environment and use of its natural resources. This order charges State departments, agencies and offices to take a position of leadership in the new energy economy by reducing state energy consumption, increasing state use of renewable energy sources, increasing the energy efficiency and decreasing the environmental impact of the state vehicle fleet, implementing environmental purchasing standards and requiring attention to energy and environmental impacts of purchasing and materials decisions.

The purpose of this order is to provide clear guidance and directive to all state agencies and offices in the greening of state government in the State of Colorado. This Executive Order applies to all state departments, agencies and offices that report to the Governor. This Executive Order also establishes Greening Government Manager ("Manager") within the Governor's Energy Office ("GEO") to facilitate the goals and objectives within this order.

This Executive Order modifies but does not replace Executive Order D 005 05. The Greening of State Government Coordinating Council ("Council") formed pursuant to Executive Order D 005 05, shall continue under the lead of the GEO. The elements of Executive Order D 005 05 will remain in place and are to be read in conjunction with this Executive Order.

2. Directive

A. Greening Government Manager
I hereby order the creation of a Greening Government Manager within the GEO. The manager shall facilitate reduction of environmental impacts through implementation of departmental energy plans and will assist state departments and agencies in achieving the goals and objectives of this order and as established by the Council. Working closely with state departments, agencies, and the Council, I direct the Manager to implement a sustainability management system to track energy efficiency, water conservation, recycling, fleet operations, and environmentally preferable purchasing. Working closely with the Department of Personnel and Administration ("DPA") and Department of Public Health and Environment ("DPHE"), the Manager shall also undertake primary coordinating responsibilities for the Council.

B. Greening Government Council
Each Executive Director shall appoint a department or agency representative for participation in the Council as created in Executive Order D 005 05. The Council shall develop the appropriate policies and procedures to implement the goals and objectives of this order, including any exemptions or exceptions to the standards that the Council deems appropriate.

C. The Council shall prepare an Annual Report Card on the achievements under this order for review and to inform recommendations for additional action by the Governor. The Council shall develop educational materials for state employees on sustainability, stewardship, climate change, and other environmental issues, so that employees better understand the reason for this Executive Order. All agencies and departments shall educate employees regularly using these materials. DPHE shall maintain an environmental outcomes database to track environmental measurements for Greening Government efforts. All state departments shall report to DPHE the measures required for the database.

D. Specific Goals and Objectives

I direct the Manager and Council to work with all state agencies and offices to achieve the goals described below. :

i. **For Energy Management**

- By fiscal year 2011-2012, achieve at least a 20% reduction in energy consumption of state facilities below fiscal year 2005-2006 levels;
- By January of 2008 develop or update an energy management plan and ensure development of a study determining feasibility of energy performance contracting for all state owned facilities;
- On an ongoing basis, assess and implement where effective, the development of state renewable energy projects with the support of GEO.

ii. **For materials and resource management:**

- By fiscal year 2008-2009, develop purchasing policies to reduce the state's environmental impact as a consumer of products and services;
- Adopt a goal of "zero waste" from construction of new buildings and operation and renovation of existing facilities;
- Achieve a paper use reduction goal of 20% by fiscal year 2011-2012 using fiscal year 2005-2006 as a baseline; Achieve a reduction of water consumption goal of 10% by fiscal year 2011-2012, using fiscal year 2005-2006 as a baseline; DPA, in cooperation with DPHE, shall develop purchasing policies for selecting environmentally preferable products.

iii. **For vehicle petroleum consumption**

- By June 30, 2012, achieve a 25% volumetric reduction in petroleum consumption by state vehicles measured against a fiscal year 2005-2006 baseline, while increasing energy efficiency of the fleet (excluding vehicles used for law enforcement, emergency response, road maintenance, and highway construction).
- By December 1, 2007, complete a transportation efficiency audit addressing methods for improving the environmental efficiency of the state fleet.

3. Duration

This Executive Order shall remain in force until further modification or rescission by the Governor.
GIVEN under my hand and the Executive Seal of the State of Colorado, this 16th day of April 2007.
Bill Ritter, Jr.
Governor

D 005 05
EXECUTIVE ORDER
GREENING OF STATE GOVERNMENT

Pursuant to the authority vested in the Office of the Governor of the State of Colorado, I, Bill Owens, Governor of the State of Colorado, hereby issue this Executive Order concerning enhancing the efficiency and greening of state government.

1. Background and Need
State government needs to operate as efficiently as possible, but at the same time it is important to set an example through efforts to reduce the use of limited resources, increase the cost effectiveness of state government, and improve Colorado's environment and the health of our children and future generations. Accordingly, the State of Colorado is committed to business practices that contribute to the mutually compatible goals of economic vitality, a healthy environment and strong communities.

The State has already taken significant steps in this direction, particularly under Executive Order D 014 03, Energy Performance Contracting to Improve State Facilities. The Department of Corrections through its Energy Management Program avoids $1.8 million in annual costs (10 percent of its utility budget) and is planning additional facility improvements that could result in avoided annual costs exceeding $1 million. The Department of Human Services through its aggressive program to manage its $5.3 million annual utility budget achieved a 10 percent level of cost avoidance and is implementing projects through performance contracts that will avoid an additional $1,000,000 in annual utility costs. The Department of Personnel and Administration, with the Judicial Department and the Department of Labor & Employment, is using performance contracting for a large-scale, comprehensive effort that captures $800,000 in annual reductions to pay for $14 million in facility upgrades. Other state agencies including the Department of Military Affairs, Colorado School for the Deaf and the Blind, Department of Public Health and Environment, and Department of Natural Resources are implementing similar projects. Within state government, such sustainable practices require decisions based on a systematic evaluation of the costs and long-term impacts of an activity or product on health and safety, communities, and the environment and economy of the State of Colorado. State agencies, through changes in daily operations, ongoing programs, and long-range planning, are able to simultaneously have a significant positive impact on the environment, economic efficiency of state government, and the character of our communities. Government can also foster markets for emerging environmental technologies and products. Finally, state government can be a model for environmental leadership by implementing pollution prevention and resource conservation programs that not only enhance environmental protection, but also save taxpayers' money through reduced costs, including reduced material costs, waste disposal costs and utility bills.

The most effective manner for state government to implement such programs is through the establishment of systems and procedures to evaluate costs and manage environmental impacts. This system should be developed and implemented consistently across state government with the assistance of the Governor's Office of Energy Management and Conservation, Department of Public Health and Environment and Department of Personnel and Administration.

2. Directive

A. I hereby direct the Executive Directors of all state agencies and departments to evaluate their current business operations in accordance with the goals of this Order and develop and implement policies and procedures to promote environmentally sustainable and economically efficient practices, including, but not limited to:

> i. Adopting the United States Green Buildings Council's Leadership in Energy and Environmental Design Green Building Rating System for Existing Buildings (LEED-EB) in operating, maintaining and managing existing buildings, to the extent applicable and practicable.

ii. Incorporating LEED for New Construction (LEED-NC) practices to design energy and resource efficient new buildings, to the extent that this is deemed cost-effective.

iii. Initiating an energy management program to monitor and manage utility usage and costs, as resources become available.

B. I hereby direct the Executive Directors of the Governor's Office of Energy Management and Conservation, Department of Public Health and Environment, and Department of Personnel and Administration, to establish a Colorado Greening Government Coordinating Council (Council) to include representatives from each state agency and department.

C. I hereby direct the Council to develop, implement, and augment programs, plans and policies that save money, prevent pollution and conserve natural resources throughout state government management and operations, including but not limited to source and waste reduction, energy efficiency, water conservation, recycling, fleet operations, environmental preferable purchasing, and establishing state-wide goals to save taxpayers' money and reduce environmental impacts.

D. I hereby direct State agencies and departments to provide all reasonable assistance and cooperation requested by the Council for the purpose of carrying out this order.

E. I hereby direct each State agency or department to annually submit to the Council a list of all projects implemented in accordance with this Executive Order in the previous calendar year and the resultant environmental benefits and cost savings.

To assist agencies in this effort, the Governor's Office of Energy Management and Conservation offers technical services to all State departments and agencies.

3. Duration
This Executive Order shall remain in force until further modification or rescission by the Governor.

GIVEN under my hand and the
Executive Seal of the State
of Colorado, this 15th
day of July, 2005.
Bill Owens
Governor

D 014 03

EXECUTIVE ORDER

Energy Performance Contracting to Improve State Facilities

Pursuant to the authority vested in the Office of the Governor of the State of Colorado, I, Bill Owens, Governor of the State of Colorado, hereby issue this Executive Order concerning energy performance contracting.

1. Background and Purpose

Energy performance contracting enables state governments to invest in energy-saving equipment, using future utility cost savings (or avoided costs) to pay for the improvements. A lease-purchase agreement is paid through annually guaranteed cost savings that are realized in utility and operating budgets. Substantial facility improvements can be accomplished in this way while reducing future utility and maintenance costs, mitigating the future risk of volatile utility prices and modernizing state facilities. A number of state agencies and institutions have tested and proven this approach. The potential exists for substantial improvements in the use of utility and operating budgets.

Legislation to govern energy performance contracts was adopted in House Bill 1381 in 2001, C.R.S. §§ 24-30-2001 through 24-30-2004 and C.R.S. §§ 24-75-108 and 29-4-729.The Governor's Office of Energy Management and Conservation and the Department of Personnel & Administration's State Buildings and Real Estate Programs developed procurement and contracting documents, project guidelines, and reporting and tracking procedures for performance contracting projects.

I direct all agencies of state government to initiate energy performance contracts where opportunity exists to better utilize utility and operating budgets and to make capital improvements in facilities. To assist agencies in this effort, the Governor's Office of Energy Management and Conservation, in partnership with the Department of Personnel & Administration's State Buildings and Real Estate Programs, offers substantial technical services including project development, engineering review, and project implementation guidance.

2. Directive

Each state agency responsible for state-owned facilities shall:

a. Investigate the feasibility for an energy performance contract and submit a final feasibility study to the Department of Personnel & Administration's State Buildings and Real Estate Programs by July 1, 2004. The feasibility study will be for a performance contract that is comprehensive in scope to implement a wide range of cost-effective energy-saving projects in all buildings, considering a financing term of 12 years or more to capture substantial avoided costs. Guidelines for the feasibility study are available from the Department of Personnel & Administration's State Buildings and Real Estate Programs. Professional engineering services to complete the study are available at no cost through the Governor's Office of Energy Management and Conservation.

b. Issue a Request For Proposal for services by February 2005 and follow through with implementation through an energy performance contract for all buildings or a manageable portion of buildings, where it is determined that performance contract is feasible, viable and economically sound Assistance in developing an RFP is available through the Governor's Office of Energy Management and Conservation, in cooperation with the Department of Personnel &Administration's State Buildings and Real Estate Programs.

c. Follow established procedures and requirements as set by the Department of Personnel & Administration's State Buildings and Real Estate Programs, utilizing approved procurement and contracting documents and following construction project guidelines and documenting and reporting procedures.

State Institutions of Higher Education are encouraged to comply with subsections a-c of this section 2.

Except in the case of emergency or extenuating circumstances as determined by the Office of State Planning and Budgeting, no Fiscal Year 2005/2006 or future requests for Controlled Maintenance shall be approved by the Office of State Planning and Budgeting (including approvals from the State Buildings and Real Estate Programs and the Colorado Commission of Higher Education) for any department, agency, or institution of the state that has not submitted an energy performance contract feasibility study approved by the Department of Personnel & Administration's State Buildings and Real Estate Programs.

3. Implementation
All departmental and institutional changes necessary to implement this Executive Order shall be made within existing budgetary appropriations. It is the intent of this Executive Order that future utility and operational budgets will be structured so that the annual cost to support a performance contract will be supported by the utility appropriation that would otherwise be granted.

4. Duration
This Executive Order shall remain in force until modified or terminated by further executive order of the Governor.

GIVEN under my hand and
the Executive Seal of the
State of Colorado, this 16th
day of July, 2003.
Bill Owens
Governor