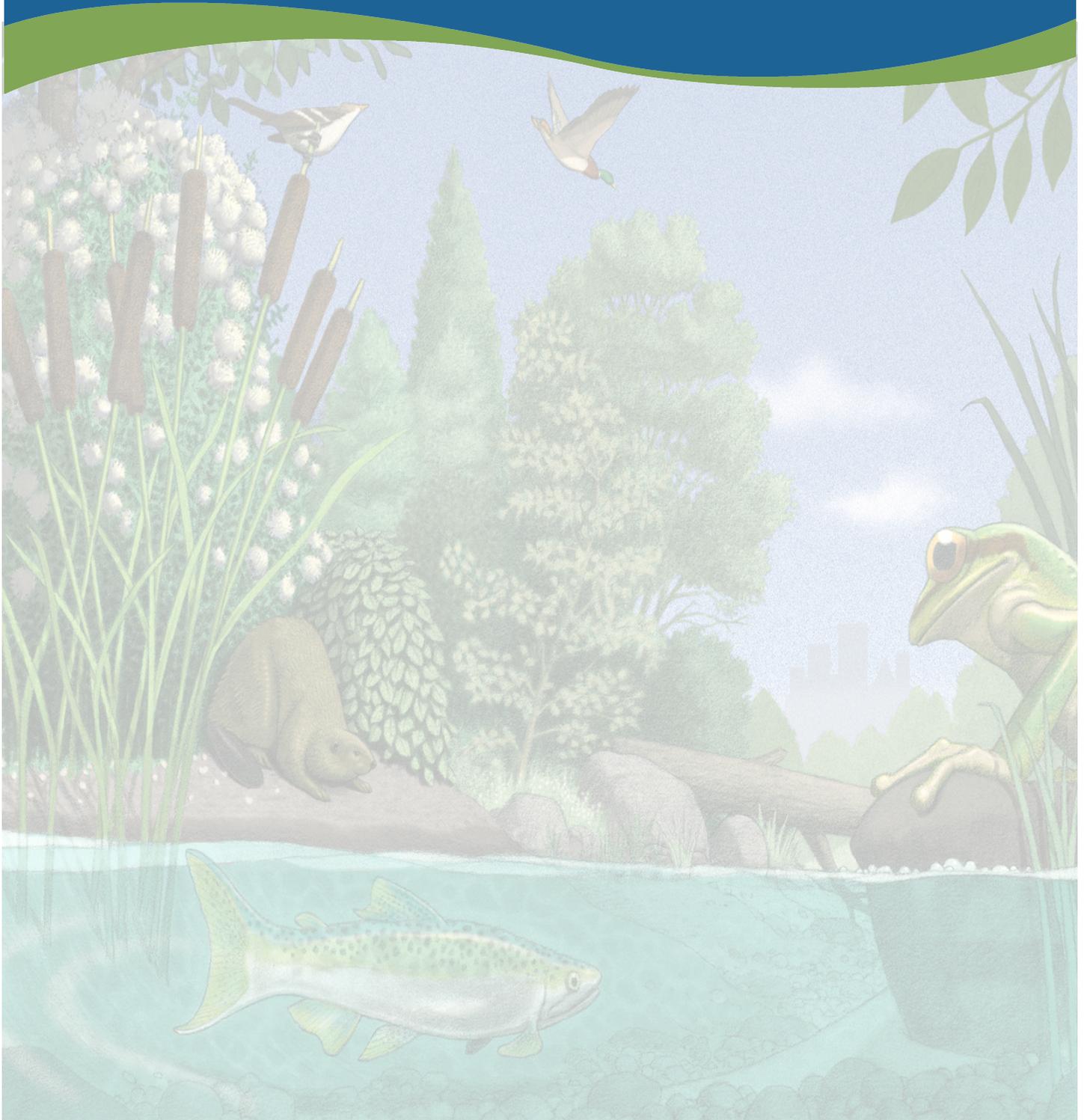


Clark County, Washington

2010 Sustainability Performance Report



Clark County Environmental Services
ISO 14001 Environmental Management System



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2010 Sustainability Performance Report

1

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On October 1, 2007, the Board of Clark County Commissioners adopted the Clark County Sustainability Policy, committed to fostering a safe, secure future that conserves natural resources while meeting basic human needs, including clean water, air and food, along with shelter, education, and employment.

As stated, this commitment to a sustainable future will be a key consideration in making public policy, developing public programs, operating public facilities, and delivering public services.

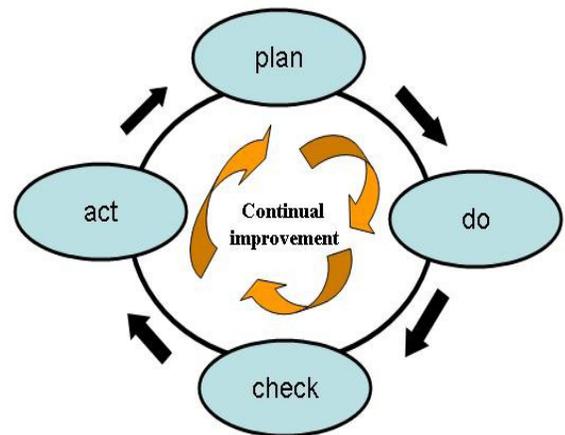
The Sustainability Policy goals include:

- Lead by example;
- Encourage innovation in both public and private pursuits;
- Promote and demonstrate efficient and effective use of renewable and consumable resources;
- Collaborate with public and private partners on projects aimed at sustainability;
- Continuously enhance our perspective and expertise in making sustainable choices on behalf of the citizens and communities of Clark County; and
- Identify and pursue new opportunities that promote sustainable practices.

To implement the policy and monitor its impacts, the County Administrator was charged with convening a sustainability advisory committee to prepare an annual inventory of the county’s sustainability efforts and to report on progress related to the stated policy goals.

The County uses the International Standards Organization (ISO) 14001 to manage sustainability goals.

The EMS Framework



ISO 14001 is an environmental management system based on the concept of continuous improvement and the “Plan, Do, Check, Act” process. The ISO 14001 framework provides a systematic methodology to manage change. The environmental management system helps to identify the causes of environmental problems and eliminate them, saving money in the process.



Environmental Goals Summary

The following report summarizes the County’s progress towards meeting its objectives and targets.

Objective

Target

Greenhouse Gases (Climate Registry Information System)	15% reduction in Greenhouse Gases (GHG) by 2011, measured from a 2008 baseline
Fuel Reduction	20% reduction in fossil fuel usage by county vehicles by 2011 (2007 baseline)
Energy Conservation	10% reduction in energy use in county buildings by 2014 (2006 baseline)
Renewable Energy	Provide 10% of county electricity needs through on-site generation by 2014
Commute Trip Reduction	Reduce single occupant vehicle commute trips by 10% and vehicle miles traveled by 13% (2007 baseline)
Weatherization	Weatherize as many homes as possible given available weatherization resources
Environmentally Responsible Purchasing	100% compliance for Green List purchased products
Ecological Enhancement	Reestablish native vegetation on 100 acres of County land by 2012

Note: The Board of County Commissioners has reviewed these goals as part of the application for Energy Efficiency Community Block Grant dollars (see Appendix B - pg.17 for proposed sustainability targets).

Greenhouse Gases - Climate Registry Information System

Clark County reduced its total greenhouse gas emissions by 17 percent from 2008 to 2010 through a program of facility improvements and fleet reductions. Approximately 4,500 metric tons of carbon dioxide equivalent (CO₂e) were prevented from entering the atmosphere, a reduction equal to taking 900 vehicles off the road.* The most significant reductions from 2008 to 2010 were a result of:

- Shrinking the County fleet by more than 100 pieces of equipment resulting in CO₂e reductions of 1,231 metric tons.
- Recent investments in energy efficiency and renewable solar power at core buildings leading to significant CO₂e reductions - about 1409 metric tons (see pg. 7 for details).
- Improvements at the county-owned Salmon Creek Wastewater Treatment Plant, saving 1,288 metric tons of CO₂e (see pg. 8 for details).

Greenhouse Gases (CRIS)				
15% reduction in Greenhouse Gases (GHG) by 2011, measured from a 2008 baseline				
	2008 (baseline)	2009	2010	% change baseline
SCOPE 1 - DIRECT EMISSIONS CO₂e				
Core Buildings	2,313	2,218	1,696	-27%
Equipment Services (County Fleet)	4,712	3,697	3,481	-26%
Leichner Landfill	4,486	4,621	4,572	2%
Salmon Creek Wastewater Treatment Plant	3,289	1,999	2,042	-38%
SUBTOTAL - SCOPE 1 - Metric Tons	14,800	12,535	11,791	-20%
SCOPE 2 - INDIRECT EMISSIONS CO₂e				
Core Buildings	6,917	6,194	5,508	-20%
Street Lights	117	114	112	-4%
Public Works	591	546	494	-16%
Park Facilities	262	267	283	7%
Traffic Signals	305	296	265	-13%
Salmon Creek Wastewater Treatment Plant	2,520	2,470	2,479	-2%
36th Ave. Pump Station	435	369	437	0.5%
117th St. Pump Station	106	428	190	44%
SUBTOTAL - SCOPE 2 - Metric Tons	11,253	10,684	9,768	-13%
GRAND TOTAL - SCOPE 1+SCOPE 2 - Metric Tons	26,053	23,219	21,559	-17%

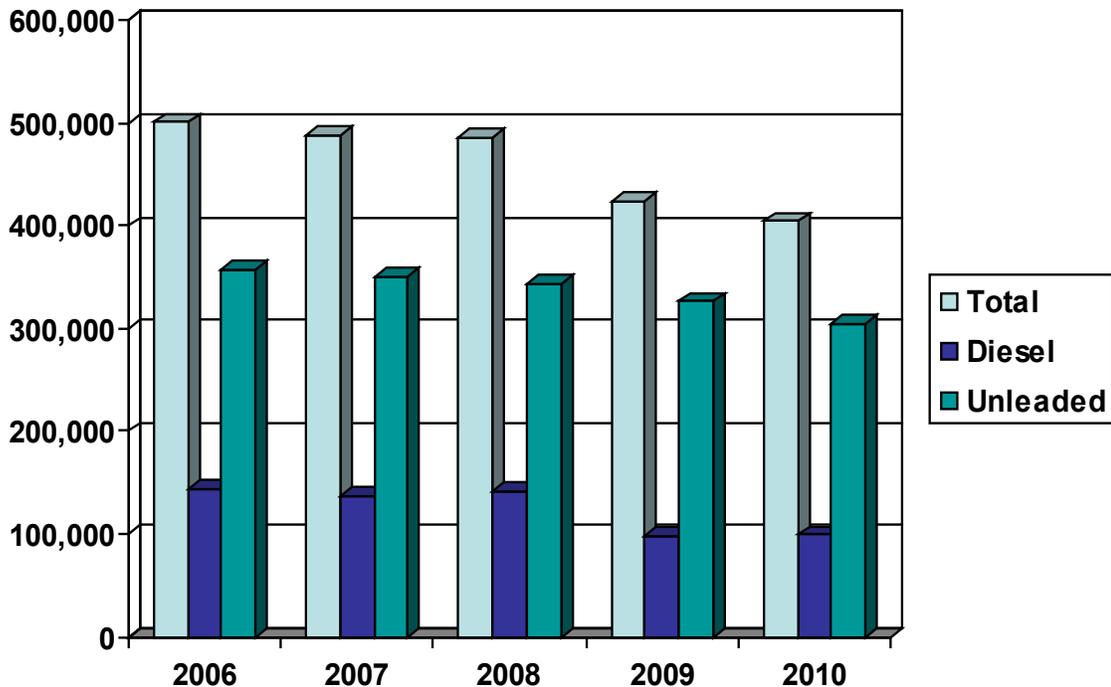
*see EPA's Greenhouse Gas Equivalences Calculator here:
<http://epa.gov/cleanenergy/energy-resources/calculator.html>



Fuel Reduction

Clark County’s vehicle fleet used 96,695 fewer gallons of fuel in 2010, a 19 percent reduction from the 2006 baseline.

Fuel Reduction				
20% reduction in fossil fuel usage by county vehicles by 2011 (2006 baseline)				
Year	Gallons Diesel	Gallons Unleaded	Total Gallons	Pieces of Motorized Equipment
2006 (baseline)	143,802	357,180	500,983	-
2007	137,928	349,635	487,563	-
% change baseline	-4%	-2%	-3%	-
2008	142,135	344,058	486,193	723
% change baseline	-1%	-4%	-3%	-
2009	98,938	326,608	425,546	640
% change baseline	-31%	-9%	-15%	-
2010	99,295	304,993	404,288	616
% change baseline	-31%	15%	19%	-



Energy Conservation

336 sites contribute to County-wide energy usage including: buildings, park properties/rentals, public works, traffic signals, flashing school signals, street lights, railroad crossings, Salmon Creek Wastewater Treatment Plant, 117th St. pump station, and 36th Ave. pump station.

Energy Conservation

10% reduction in energy use in county buildings by 2014 (2007 baseline)

	Natural Gas (Therms)	Electricity (kWh)	Total Energy (Mbtu)
2007 (baseline)	449,095	28,066,974	140,674
2008	500,053	27,466,870	143,654
% change baseline	10%	-2%	2%
2009	466,581	26,130,082	135,814
% change baseline	4%	-7%	-3.5%
2010	336,127	24,940,158	118,709
% change baseline	-25%	-11%	-16%

1 therm=0.1 Mbtu; 1 kWh=0.003412 Mbtu

\$269,309 Estimated Cost Savings (based on \$1.00/therm & \$0.05/kWh)

- Using 2010 data vs. 2007 data we can determine that approximately \$269,309 dollars were **saved** in electricity costs (using \$0.05 as an estimated cost for every kWh purchased)
 $28,066,974 - 24,940,158 = 3,126,816 * \$0.05 = \mathbf{\$156,341}$
- Using 2010 data vs. 2007 data we can determine that an additional \$17,486 dollars were **saved** on natural gas (using \$1.00 as an estimated cost for every therm purchased)
 $449,095 - 336,127 = 112,968 * \$1.00 = \mathbf{\$112,968}$

Total Savings:
 $\$156,341 + \$112,968 = \mathbf{\$269,309}$



Energy Conservation Projects -

Energy Conservation Sites

Beginning in 2008, Clark County invested \$8 million to finance 35 individual energy conservation and renewable projects to reduce the County’s energy use and to lower carbon pollution. The investment will pay for itself in energy savings over a twenty year period.

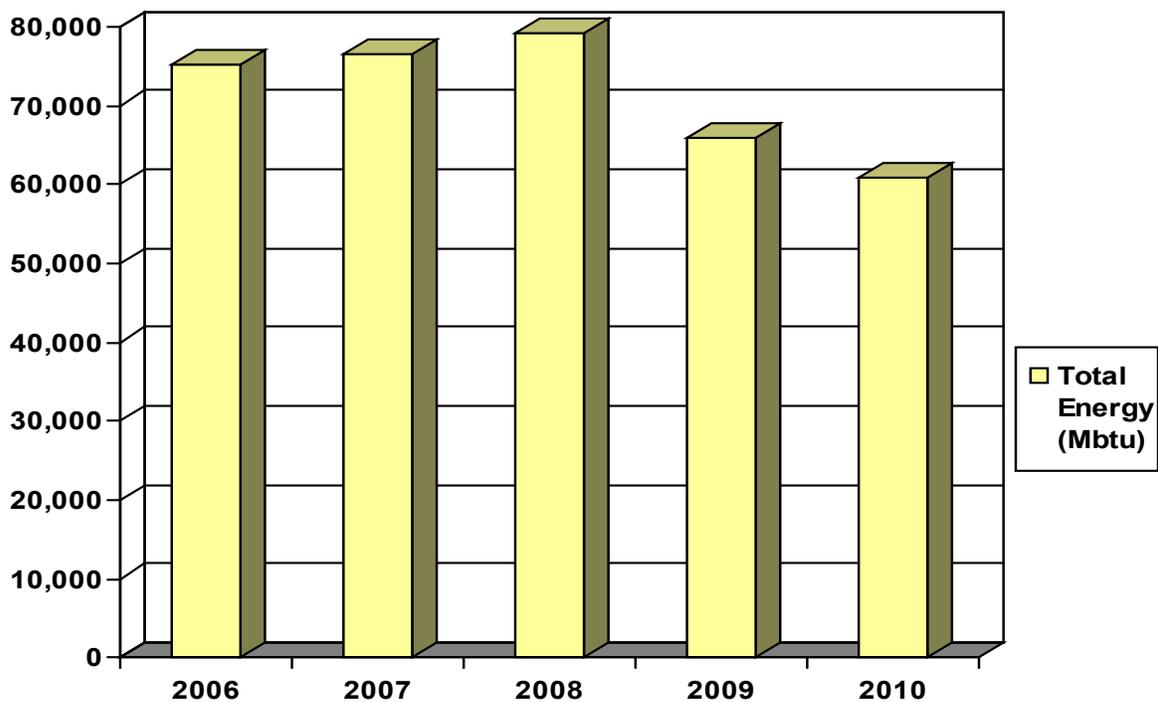
Energy Conservation Sites*

No specific goal for these sites, they are part of the Energy Conservation Objective

	Natural Gas (Therms)	Electricity (kWh)	Total Energy (Mbtu)
2007 (baseline)	277,851	14,291,138	76,547
2008	318,723	13,849,090	79,125
% change baseline	13%	-3%	3%
2009	259,829	11,701,592	65,909
% change baseline	-6.5%	-18%	-14%
2010	232,370	11,042,106	60,913
% change baseline	-16%	-23%	-20%

* 149th St. Building A (Sheriffs), A1 Main, B West, D (Sign Shop), 149th St. Site, 78th St., Building B, B1, C, D, E, F, G, H, I, L, M, Q, Wash Rack, Center for Community Health, Courthouse, Corrections Center, Death Investigations, General Services Building, Jail Work Center, Public Service Center.

Note: Does not include Fairgrounds



Energy Conservation Projects - Salmon Creek Wastewater Treatment Plant

The Treatment Plant installed new technology allowing for more of the methane produced from the anaerobic digestion to be used for heating the plant instead of natural gas. This equates to a 76% reduction from 2006 with annual cost savings of approximately \$40,000. In addition more efficient methane flare burners were installed for the extra methane gas not utilized for heat, significantly reducing greenhouse gas emissions (see page 4 for details).

Salmon Creek Wastewater Treatment Plant

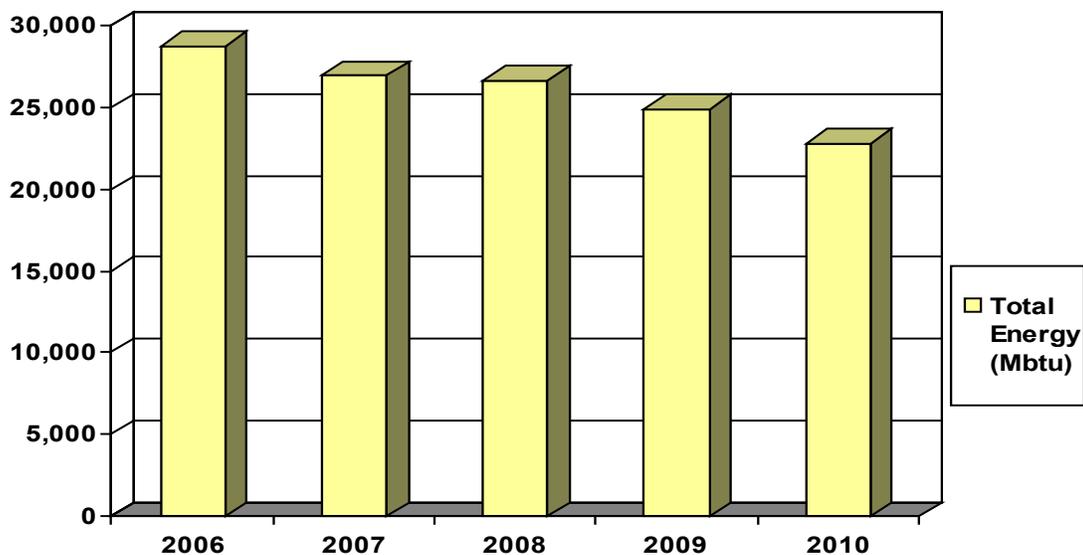
No specific goal for this site, it is part of the Energy Conservation Objective

	Natural Gas (Therms)	Electricity (kWh)	Total Energy (Mbtu)	Average MGD*
2007	54,984	6,302,088	27,001	7.0
2008	57,817	6,124,937	26,680	6.9
2009	44,658	6,002,220	24,945	6.8
2010	13,136	6,331,423	22,825	7.45

*MGD=Million gallons per day

There are seven major components of the current system that work together to keep our neighborhoods livable and protect our environment. They are:

- The Salmon Creek Interceptor
- The 36th Ave. Pump Station
- The 36th Ave. Force Main
- The Salmon Creek Wastewater Treatment Plant
- The Outfall to the Columbia River
- The 117th St. Pump Station
- Force Main from Klineline to 117th St.



Renewable Energy

Today if you walk around the downtown county campus and look up you may see some of the 629 panels installed on five county rooftops producing 135 KW of clean energy including an installation at the Clark County Jail that uses the first “thin-film” panel technology in the county. Note: 1KW = est. 1,100 kw/hr in the Pacific Northwest.

Renewable Energy

Provide 10% of county electricity needs through on-site generation by 2014

	Comm. Health	Juvenile	Facilities	PSC	Jail	TOTAL (kWh)
2009 Totals (kWh)	55,080	23,220	38,900	29,750	14,710	161,660
2010 Totals (kWh)	59,040	24,200	42,380	30,650	15,210	171,480



In addition, thermal solar systems are in place at Public Services, Center for Community Health, Jail and Jail Work Center which offset energy usage (estimated at 123,500 kWh per year).

In 2002 Clark County committed to purchase green power to supply 100% of the electricity needs of the Public Service Center as part of the building’s LEED certification effort. The 120,600 kWh per month (1,447,200 kWh per year) of renewable power from Clark Public Utilities’ Green Lights program made the County the largest participant in the program at the time. This represents approximately a 6% offset of the County’s overall electricity usage.



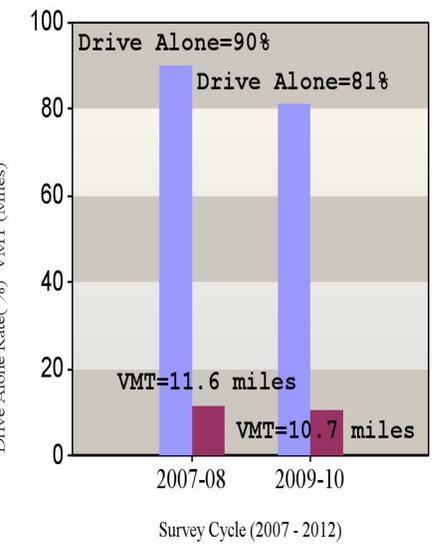
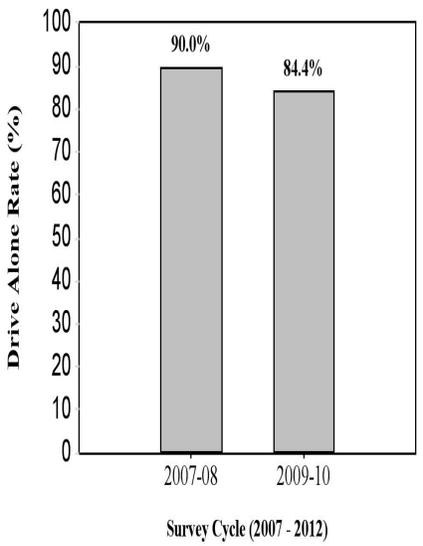
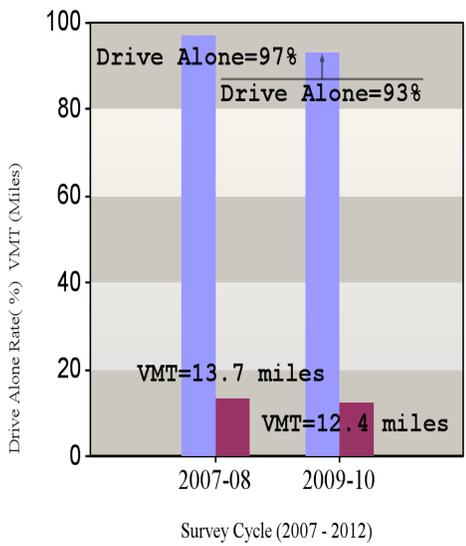
Commute Trip Reduction

Reduce single occupant vehicle commute trips by 10% & vehicle miles traveled by 13%

PW - Operations	Drove Alone	VMT/Employee
2007-2008 (baseline)	97%	13.7
2009-2010	93%	12.4
Goal	86%	11.7
% Change from 2007-2008	-4%	-9%
PSC & Downtown Campus	Drove Alone (CTR Affected)	VMT/Employee - CTR Affected
2007-2008 (baseline)	90%	11.6
2009-2010	81%	10.7
Goal	81%	9.9
% Change from 2007-2008	-10%	-9%
Center for Community Health	Drove Alone (CTR Affected)	VMT/Employee-CTR Affected
2007-2008 (baseline)	91%	11.5
2009-2010	85%	10.9
Goal	82%	10
% Change from 2007-2008	-7%	-5%

Note: Goal is an estimate only, based on an assumed 10% reduction in drive alone rate and a 13% reduction in VMT/employee from the first survey conducted in 2007. However, jurisdictions can set higher goals, and may set different goals for individual worksites. PW: Public Works PSC: Public Service Center VMT: Vehicle Miles Travelled CTR: Commute Trip Reduction

PW - Operations Center Community Health PSC & Downtown Campus



Currently the weatherization program is using CFL's, Energy Star appliances and recycled insulation materials for attics, walls, floors, water heaters and exposed pipes. Items under consideration include LED lighting and hot water recovery systems. Other work consists of weather stripping, heating unit repairs and indoor air quality tests. HOME funded construction will need to meet Evergreen Standards that have been adopted by the Housing Trust Fund.

Weatherization

Weatherize as many homes as possible given available weatherization resources

	Installed Measures	# Units	Average Cost	Total Cost Estimate
1998	423,883	134	3,163	423,883
1999	328,136	103	3,186	328,136
2000	394,216	103	3,827	394,216
2001	681,483	250	2,726	681,483
2002	828,212	251	3,300	828,212
2003	834,252	230	3,627	834,252
2004	850,492	344	2,472	850,492
2005	893,210	228	3,918	893,210
2006	1,008,630	227	4,443	1,008,630
2007	1,008,412	176	5,721	1,008,412
2008	805,346	130	6,195	805,346
2009	1,399,828	258	5,426	1,399,828
2010	1,103,862	189	5,481	1,035,909
TOTAL	9,456,100	2,434	4,114	9,456,100

Primary focus is to install cost effective measures for energy conservation and address health and safety concerns. Through a 2010 SERC grant, the Weatherization program has begun to implement a renewable pilot program focused on solar water heaters, ductless heat pumps and solar panels. Through 2010:

Ductless Heat Pumps	Solar Water Heaters	Solar Panels
0	1	0

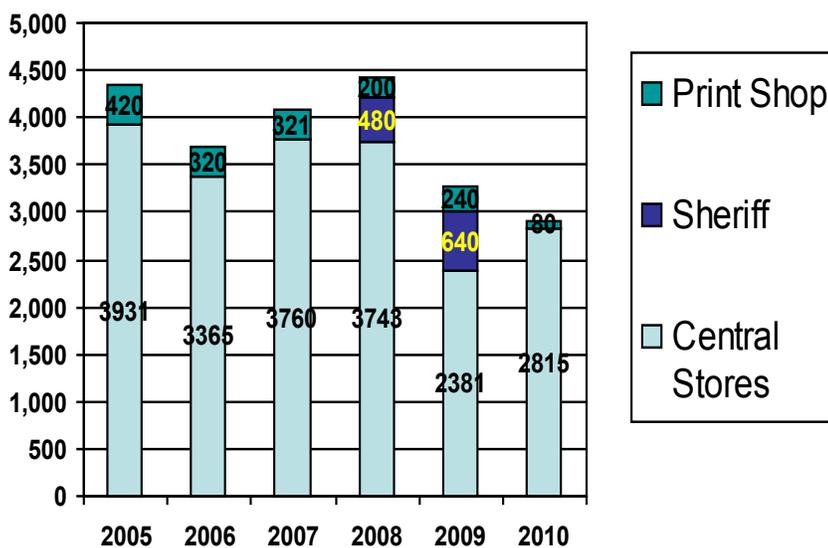


Environmentally Responsible Purchasing

In December of 2004, Clark County adopted an Environmental Purchasing Policy. The purpose of this policy is to reduce negative impacts to human health and the environment through the development of criteria for county purchases.

Environmental Purchasing					
100% Compliance for "Green List" Purchased Products					
Year	Office Products	Janitorial Products	Vehicles	Landscaping/ Vegetation	Compliance % Total
2006	89%	13%	99%	94%	67%
2007	99%	76%	99%	99%	92%
2008	97%	66%	99%	100%	92%
2009	97%	98%	99%	99%	98%
2010	98%	95%	99%	99%	97%

Copy Paper Usage (Cases)



In 2010, Clark County used over 70 tons of recycled copy paper saving 521 trees.

- ✓ 1 case (10 reams) of 100% virgin copier paper uses .6 trees
- ✓ 40 cases weighs 1 ton. Therefore, each ton uses 24 trees
- ✓ 1 ream (500 sheets) uses 6% of a tree (and those add up quickly!) <http://www.conservatree.com/learn/EnviroIssues/TreeStats.shtml>



Environmentally Responsible Purchasing Projects - Turf Removal

The turf removal project around the County Public Service Center eliminated mowing (about 55 times a year) and other lawn maintenance including aerating, thatching, fertilizing, watering and herbicide applications.

Turf Removal Project

No specific goal for this project, it is part of a number of the objectives

Project Size:	Six sections of lawn covering 15,000 square feet or .34 acres, about 20 percent of the 1.7 acres of downtown turf
Environmental Benefits:	Less fertilizer and watering, increased stormwater infiltration, reduced use of mowers and other equipment
Cost:	\$7,250 one-time cost for plants; some trees donated
Savings:	Almost \$20,000 over the next decade

For additional information please see the 2009 Environmentally Responsible Purchasing Report



Before



After

Most of the plants (top right picture) purchased are native, creating a more environmentally friendly landscape.

Ecological Enhancement

In 2010, as part of an effort to restore County owned land, Environmental Services initiated the Growing Green program. Growing Green is enhancing property with native vegetation to maximize the ecological benefits from our properties. The Stormwater Capital Plan ranks the project as a high priority, recognizing the unique habitat values of the project area which is home to threatened and endangered species. Other benefits of the project include:

- Satisfying ecological enhancement needs
- Providing water quality benefits
- Providing stormwater quality control
- Controlling the spread of noxious weeds
- Engaging the community in enhancing their own property

Ecological Enhancement

Restablish native vegetation on 100 acres of County land by 2012

Location	Plants	Acres Planted
Daybreak Park	3,000	5.5
Ford Park	3,942	10.6
Clark County Fairgrounds	5,040	13.1
Durkee Park	2,446	7.22
Greyhawk Park	432	1.04
Veatch Park	300	1.08
Becker Park	4,161	14.68
2010 TOTAL	19,321	53.22



Planted species include big leaf maple, Oregon ash, black cottonwood, Douglas fir, Cascara, Pacific willow, Scouler’s willow, Western red cedar, Western hemlock, red alder, beaked hazelnut, serviceberry, black twinberry, red osier dogwood, Nootka rose, Douglas spirea, bitter cherry, tall Oregon grape, Pacific Ninebark, and Oregon Ash

Clark County Sustainability Accomplishments

Dept.	Year	Action/Task	Notes
		Policy	
DCS	On-going	Weatherization -- Evergreen Standard, Energy Star in all Contracts	Replaced 300 refrigerators
BOCC	2010	Sustainable Communities Ordinance	
BOCC	2010	Volunteer Green Building Code Adopted	
HR	2010	Added sustainability to Performance Evaluation Form	
BOCC	2009	Shop Local Resolution	
BOCC	2007	Sustainability Policy	
BOCC	2006	Food Systems Council	
PW	2005	Acquisition of 4 Wheel Drive Vehicle Policy	
BOCC	2004	Environmentally Responsible Purchasing Policy	
PW	2004	Deconstruction Rather Than Demolition/Disposal	15 buildings to date
PW	2003	ISO 14001 Certification	Annual assessment
PW	2000	Hybrid Vehicle Resolution	
		Operating Public Facilities	
DES	On-going	Emergency Ride Home	
DES	On-going	Subsidized Bus Passes	
DES	On-going	Priority Carpool Parking (PSC)	
DES	On-going	Bike Lockers, Clothing Lockers, Showers	
DES	On-going	Alternative Work Schedules/Telecommuting	
IT	2010	Smart Power Strips	
DES	2010	Growing Green Program	50 acres planted with natives
Sheriff	2010	Electric Forklift for Sheriff's Warehouse	
PW	2010	Converted Mowers to Non-Motorized	
GS	2009	E-Pay Setup for 300 Utility Accounts	
PW	2009	Fuel Additive	Increased fuel quality and mileage
DES	2009	Break Room Composting (PSC)	2010 expanded to CCH
DES	2008	Climate Registry Information System	Founding member
GS	2008	Performance Contracting Phase II	\$7.8 million
GS	2008	135 KW of Solar PV Installed on County Building	
GS	2008	Solar Thermal Systems Installed	10,658 Gallons of storage

Clark County Sustainability Accomplishments (continued)

Dept.	Year	Action/Task	Notes
		Operating Public Facilities (continued)	
DES	2005	Utility Manager Software Tracking System	
PW	2005	Mercury Switches Eliminated	
PW	2005	Bulk Purchase of Brake Clean and Transmission Fluid	
PW	2005	Re-refined Universal Tractor Fluid	
PW	2005	Diesel Oxidation Catalysts	
PW	2004	Ultra Low Sulfur Diesel	3 years ahead of phase out
DES	2003	Green Power Purchase	1,200 blocks per month
GS	2003	Performance Contracting Phase 1	\$3.2 million
GS	2003	Public Service Center Built to LEED Standard	
PW	2002	B20 Bio-Diesel Mix	1st shipment to PNW
PW	2001	Hybrid Vehicle Acquisitions	9 purchased to date
PW	2000	LED Traffic Lights & PED Crossing	100% by 2010
PW	1999	Refurbishing of Police Vehicles	
PW	1997	Re-Refined Antifreeze	
PW	1996	Oil Filter Draining and Crushing	
PW	1995	Re-Refined Motor Oil	
GS	1994	Incredible Shrinking Can	\$17,000 annual savings
		Delivering Public Services	
DCS	On-going	Community Development Block Grant (CDBG) and Home Investment Partnership Program (HOME)	Urban County Advisory Board
DCS	On-going	Housing Preservation -- Lead-Based Paint Hazard Control Grant	
DCS	On-going	Neighborhood Stabilization Program	Urban County Advisory Board
DCS	On-going	Homelessness Prevention & Rapid Re-Housing Program	Community Action Advisory Board
DES	On-going	Legacy Lands	3,500 acres
DES	On-going	Household Hazardous Waste Disposal Program	35,902,958 pounds from 1986-2010
DCS	On-going	Weatherization-Evergreen Standard, Energy Star in All Contracts	Replaced 300 refrigerators
DCS	On-going	Community Services Block Grant (CSBG)	Community Action Advisory Board

Clark County Sustainability Accomplishments (continued)

Dept.	Year	Action/Task	Notes
		Delivering Public Services (continued)	
DES	On-going	WA Green Schools	23 participating schools
PW	2010	NE 113th Ave & NE 96th St Curb Extension Project	
CD	2010	Free Home-Heating Duct Inspection Program	150 houses tested (80% failure rate)
DV	2010	First Solar Water Heater Installed in WA State for Low-Income Weatherization Project	Grant to install 50 more
PW	2009	99th/Lakeshore rain garden	
DES	2009	Upper Whipple Creek Habitat Protection	
DES	2009	¼ acre Permaculture Food Forest @ Heritage Farm	
GS	2009	Pesticide Free Community Gardens @ Heritage Farm	Expanded from 30 plots to 80
GS	2009	Food Bank garden	Expanded from 2 to 4 acres
DES	2009	Roll Cart Roll Out	45,000 households; 6,500 MF
PW	2008	West Mill Creek - A Large Public LID Project on a Large, Regional Scale	
DES	2005	Save Organic Scraps Food Waste Composting Program	81 schools to date, 56,000 students participating
DES	2003	Medications Disposal Program	
DES	2001	Curbside Yard Debris Collection Program	
DES	1996	School Recycling Program	

Proposed Sustainability Targets
Reduce waste from county facilities by 20% by 2014
Develop and construct six (6) sustainable community projects
Reduce the cost of biosolids hauling and land application by 20% by 2015
Capture all waste gas from flare by 2020
Design and construct a pilot project to the Greenroads rating system
Achieve average residential density 8-6-4 units
Reduce water usage by 15% by 2015
Monitor employee charitable giving
Establish employee volunteerism tracking system