



Bexar County 2008 Energy Status Report

**Infrastructure Services Department
Energy Management**

**Golda M. Weir, EIT, CEM, LEED AP
Energy Manager**

February 19, 2009

Overview

- Bexar County's Energy Goal
- Energy Efforts to Date
- FY 2008/2009 Energy Projects
- FY 2007/2008 Utility Expenditure
- Energy Usage & Cost Trend
- Moving Forward

Bexar County's Energy Goal

To maximize available energy-efficient, conservation and renewable technologies while utilizing sustainable materials and approaches in the design, construction, operation and maintenance of all County assets.

Energy Efforts to Date

- Created County's First Energy Management Program - 2004
 - Current Energy Manager - Golda M. Weir
 - B.S in Architectural Engineering
 - MBA from UTSA
 - Engineer-in-Training (EIT)
 - Certified Energy Manager (CEM)
 - LEED Accredited Professional
- Initiated VIA Bus Pass Program - 2006
 - Free Rides for all Employees
 - Employees just show their County IDs

Energy Efforts to Date

- Implemented Green Purchasing Guidelines- 2006
 - Office supplies include recycled content
 - Purchase only EPA Energy Star Equipment
- Completed two 2003 Bond Buildings to include energy-efficient features - 2007/2008
 - New Juvenile Probation Office Building - 70,000 sq. ft.
 - New Adult Probation Office Building - 100,000 sq. ft.

Energy Efforts to Date

- Updated Energy Policy - adopted 2007
 - Creation of the Energy Council
 - Collaborative effort with all County Department/Offices - Meetings held Quarterly
 - Includes an Expanded Recycling Program
 - Includes LEED Requirements for all new County Buildings
- Beginning Construction of 1st County LEED Silver Building - complete in 2010 (195,000 sq. ft.)

Energy Efforts to Date

- Completed Lighting Retrofit of 3 Existing Facilities
 - Parking Garage - 70,000 sq. ft.
 - Annual Estimated Savings
 - Electricity -185,000 kWh
 - Cost Savings - \$12,950 (CPS one-time rebate - \$4,389)
 - Vista Verde Plaza - 73,900 sq. ft.
 - Annual Estimated Savings
 - Electricity -130,000 kWh
 - Cost Savings- \$9,100 (CPS one-time rebate - \$7,348.50)
 - Courthouse Annex - 56,700 sq. ft.
 - Annual Estimated Savings
 - Electricity -70,000 kWh
 - Cost Savings- \$4,900 (CPS one-time rebate - \$1,475.55)

Energy Efforts to Date

- Mechanical System Upgrades/Replacement
 - Scope: replace and/or upgrade existing mechanical equipment with more energy-efficient systems.
 - Jail - 634,500 sq. ft.
 - Upgraded entire existing A/C & Heating Controls
 - Krier Center - 81,000 sq. ft.
 - Replaced two existing Chillers
 - Received CPS one-time rebate of \$20,800
 - Courthouse Annex - 56,700 sq. ft.
 - Replaced existing Chiller
 - Received CPS one-time rebate of \$19,600

FY 2008/2009 Energy Projects

- Lighting Retrofit
 - Phase I (complete)
 - Vista Verde & Courthouse Annex (4,500 lamps replaced)
 - Estimated Savings - \$22,000 annually
 - CPS Rebate - \$8,824 (one time)
 - Phase II
 - Main Jail and Jail Annex (704,560 square feet)
 - Phase III
 - Juvenile Detention (99,200 square feet)
 - Tejada Courts (40,800 square feet)
 - Krier Juvenile Treatment Center (64,330 square feet)

FY 2008/2009 Energy Projects

- A/C & Heating Controls Upgrade
 - Scope: upgrade/replace existing equipment to provide more efficient control of A/C and heating systems.
 - Phase I
 - Vista Verde
 - Courthouse Annex
 - Phase II
 - Jail Annex
 - Phase III
 - Juvenile Detention
 - Tejada Courts

FY 2008/2009 Energy Projects

- Water Conservation
 - Scope: retrofit existing plumbing fixtures with more efficient fixtures to help reduce water consumption
 - Location - Countywide facilities (existing)
 - Proposed Retrofit - Approx. 5,000 fixtures
 - Water Reduction by approx. 20%
 - 32 million gallons in water savings
 - \$160,000 in cost savings
 - SAWS Rebate (\$75 per fixture)
 - Approximately \$375,000 one-time rebate

FY 2008/2009 Energy Projects

- Greenhouse Gas (GHG) Emission Inventory
 - Scope
 1. Calculate County's contribution of CO2 Emissions into atmosphere
 2. Develop strategies to offset/reduce emissions
 3. Develop long-term reduction goal
 4. Create Tracking Tool for ongoing measurement

Fiscal Year 2007/2008 Utility Expenditure

County as a whole	\$ 5,211,248	% of Total
Electricity	\$ 3,590,688	68.9%
Natural Gas	\$ 723,973	13.9%
Water and Sewer	\$ 896,588	17.2%

General Breakdown	Utility Total	% of Total
County Buildings	\$4,775,596	91.6%
Forensic Science Center	\$ 225,025	4.3%
Parks/Civic Centers	\$ 79,379	1.5%
Leased Facilities	\$ 58,000	1.1%
Public Works Service Centers	\$ 46,518	0.9%
Parking Garage	\$ 26,730	0.5%

Fiscal Year 2007/2008 Electricity Cost Comparison

	Building Name	Gross Square Feet	Fiscal Year 2006_2007 Total Cost	Fiscal Year 2007_2008 Total Cost	% Increase/Decrease
1	Adult Detention Center	634,560	\$ 1,355,929	\$ 1,527,851	12.7%
2	Adult Detention Center Annex	70,000	\$ 713,041	\$ 768,976	7.8%
3	Juvenile Detention Center	99,200	\$ 286,571	\$ 305,028	6.4%
4	Krier Juvenile Treatment Center	64,330	\$ 346,899	\$ 363,488	4.78%
5	Tejeda Juvenile Justice Center	40,800	\$ 97,520	\$ 119,651	22.7%
6	Mitchell Building	35,780	\$ 61,833	\$ 72,813	17.8%
7	Cadena-Reeves Justice Center	275,600	\$ 623,006	\$ 715,627	14.9%
8	Courthouse	268,000	\$ 289,412	\$ 324,544	12.1%
9	Courthouse Annex	56,700	\$ 188,876	\$ 260,808	38.1%
10	Vista Verde Plaza	73,900	\$ 179,905	\$ 205,813	14.4%
11	Milagros Treatment Center	16,960	\$ 65,124	\$ 49,614	-23.8%
	TOTAL	1,635,830	\$ 4,208,116	\$ 4,714,213	12.0%

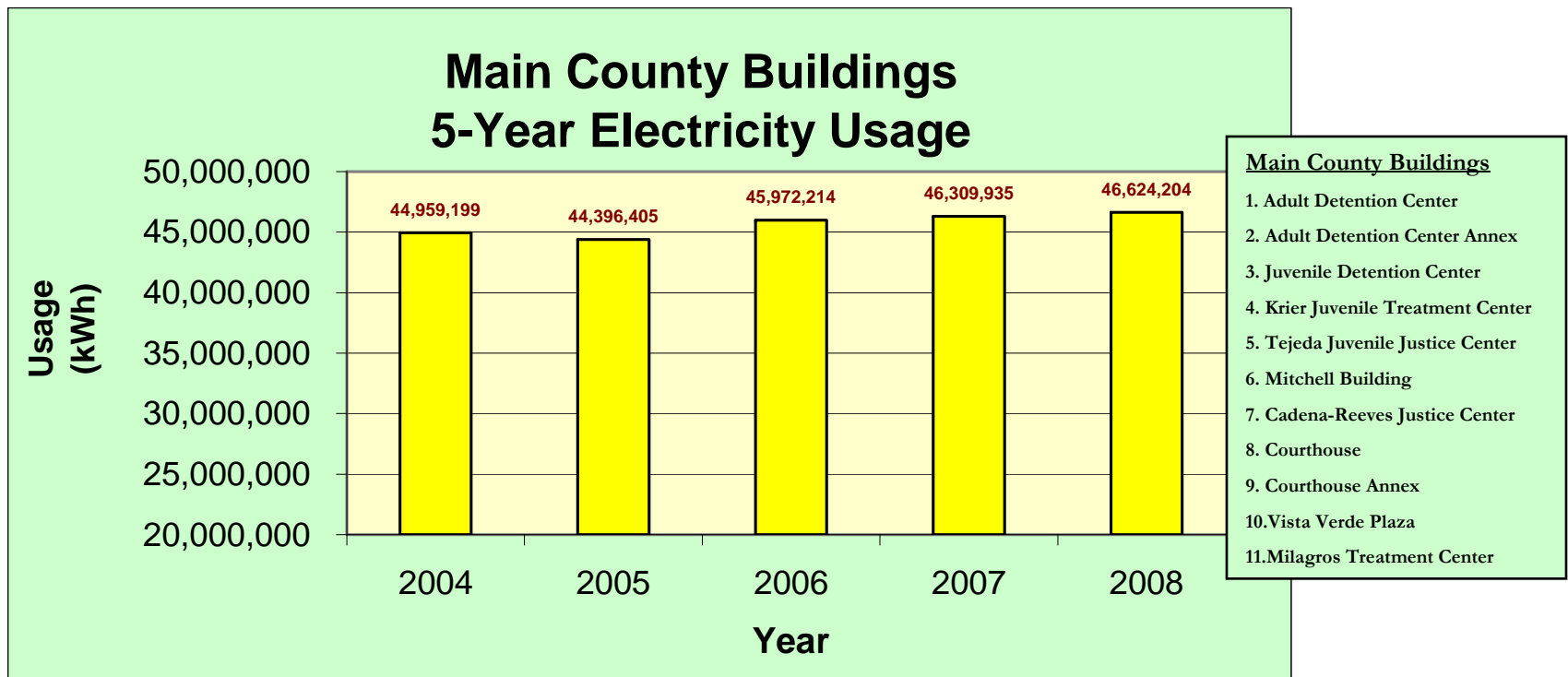
This chart shows total annual electricity cost for (11) eleven county buildings. The 12% cost increase is partly due to the CPS Energy rate increase of 3% plus fuel adjustment charges. In addition, abnormally high temperatures during summer 2008 also contributed to the overall cost increase.

Fiscal Year 2007/2008 Electricity Usage Comparison

	Building Name	Gross Square Feet	FY 06_07 Electricity Usage (kWh)	FY 07_08 Electricity Usage (kWh)	% Increase/Decrease
1	Adult Detention Center	634,560	12,135,780	12,445,920	2.6%
2	Adult Detention Center Annex	70,000	5,904,768	5,730,432	-3.0%
3	Juvenile Detention Center	99,200	4,073,952	4,079,472	0.1%
4	Krier Juvenile Treatment Center	64,330	3,561,600	3,381,000	-5.1%
5	Tejeda Juvenile Justice Center	40,800	1,611,072	1,742,784	8.2%
6	Mitchell Building	35,780	849,408	877,440	3.3%
7	Cadena-Reeves Justice Center	275,600	8,575,200	9,123,840	6.4%
8	Courthouse	268,000	2,891,200	2,955,200	2.2%
9	Courthouse Annex	56,700	2,884,200	3,414,900	18.4%
10	Vista Verde Plaza	73,900	2,914,176	2,904,192	-0.3%
11	Milagros Treatment Center	16,960	511,872	516,480	0.9%
	TOTAL	1,635,830	45,913,228	47,171,660	2.7%

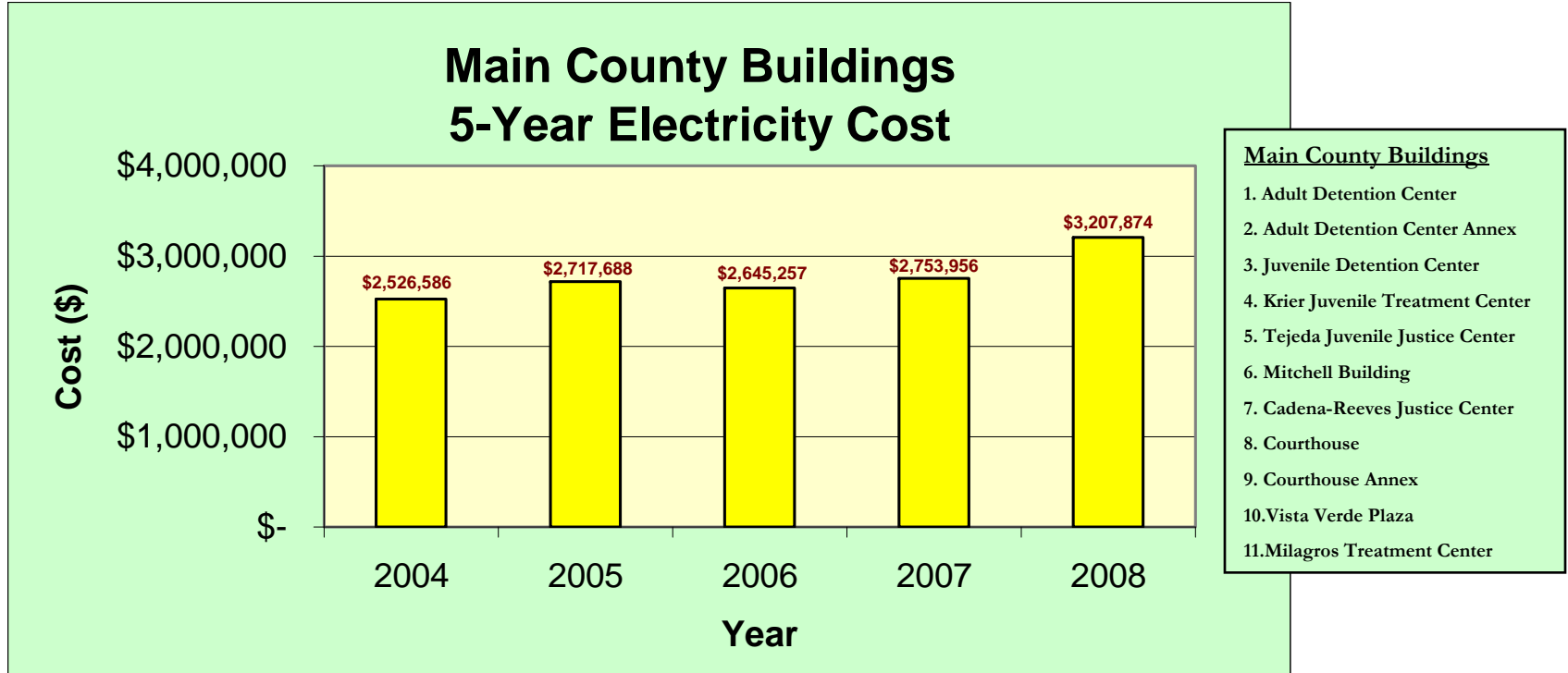
This chart shows total annual electricity usage for (11) eleven county buildings. The 2.7% increase in consumption is partly due to abnormally high temperatures during summer 2008. This requires more air-conditioning by mechanical equipment, thereby increasing electricity consumption.

Energy Usage Trend



This graph shows a 5-year electricity usage analysis for (11) eleven county buildings. Overall consumption shows a normal trend increase. Average electricity use per square feet for year 2004-2008 were 27.6, 27.2, 28.2, 28.4 and 28.6, respectively.

Energy Cost (\$) Trend



This graph shows a 5-year electricity cost analysis for (11) eleven county buildings. Overall cost is increasing at a rate of approximately 10-15%. Average cost per usage for year 2004-2008 were \$0.056, \$0.061, \$0.058, \$0.059 and \$0.069, respectively.

Moving Forward

- Continue to implement energy reduction projects throughout county buildings
- Continue employee awareness & education
- Continue to deliver the most enlightened stewardship of our energy resources to the citizens of Bexar County.