

GCC At-a-Glance

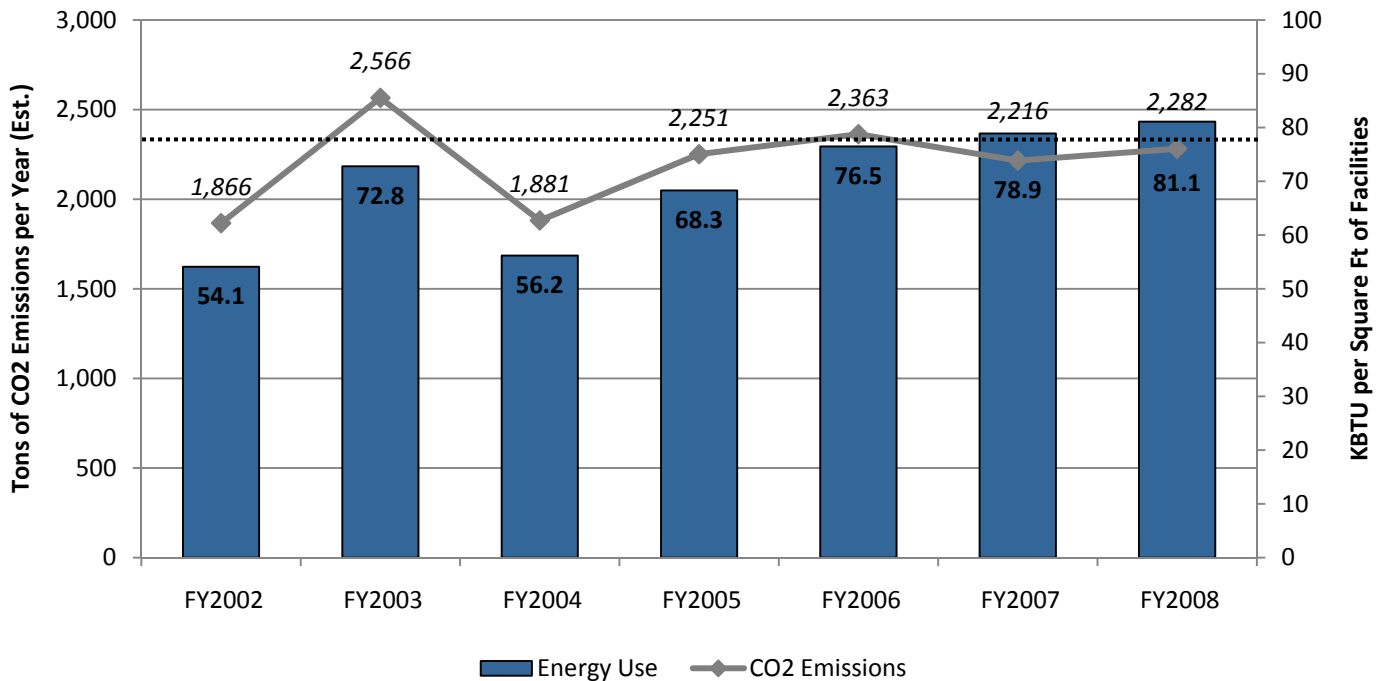
Energy Efficiency

In March 2007, Greenfield Community College joined the American College & University President’s Climate Commitment (ACUPCC)¹. This commitment pledges the college to the pursuit of climate neutrality. GCC’s transition to improved environmental impact practices by increasing individual and college energy conservation and by adopting efficient energy sources is a multi-year endeavor.

Reducing greenhouse gas emissions can help forestall global warming in the long run. Since carbon dioxide emissions are a major component of greenhouse gases, one measure of progress is the reduction in the total carbon dioxide emissions of an organization.

Figure 1 compares the annual energy used per square foot by GCC to an estimate of annual carbon dioxide emissions (CO2) by GCC. Energy use increased from FY02 through FY08. The college’s impact on the environment improved as measured by carbon emissions because of the increased use of lower, carbon-emitting natural gas and decreased use of higher carbon-emitting electricity as a source of heat; this helped off-set the affect of increased energy use.

Figure 1: Emissions (tons CO2) and Energy Use (KBTU/square ft.) for GCC Facilities



Note: BTU (British Thermal Unit) is defined as the amount of heat required to raise the temperature of one pound of liquid water by one degree Fahrenheit. One KBTU is 1,000 BTUs.

The dotted line indicates the 2003 NBCES national average source energy use for buildings intended for educational use² (76 KBTU/square foot). *Note: This average includes all types of educational facilities from very large universities to very small high schools.*

¹ Details can be found at <http://www.presidentsclimatecommitment.org/html/commitment.php>.

² More information can be found at:

http://www.energystar.gov/ia/business/tools_resources/new_bldg_design/2003_CBECSPerformanceTargetsTable.pdf

Table 1 shows details of the college's carbon emissions by energy type since fiscal year 2002. Diesel and gasoline for college vehicles are include; however, faculty, staff and student use of fuel for commuter transportation are not included. GCC has been transitioning to increasing the use of natural gas and decreasing the use of electricity for heat.

CO2 Emissions, FY2002-FY2008

Table 1: Estimated Tons of CO2 Emissions by Energy Type

Fiscal Year	Electricity	Natural Gas	Diesel	Gasoline	Total Emissions	Annual % Change
FY2002	1,760	90	7	10	1,866	~
FY2003	2,414	117	17	17	2,566	37.47%
FY2004	1,696	138	12	35	1,881	-26.68%
FY2005	2,071	138	14	27	2,251	19.64%
FY2006	1,971	333	19	40	2,363	4.98%
FY2007	1,677	505	8	22	2,216	-6.20%
FY2008	1,749	492	12	28	2,282	2.96%

Table 2 shows energy use at GCC measured by KBTU's.

Energy Use for GCC Facilities

Table 2: Energy Use (KBTU) by Source and Usage per Square Ft. of Facilities

Fiscal Year	Electricity (KBTU)	Natural Gas (KBTU)	Diesel (KBTU)	Gasoline (KBTU)	Total KBTU	Sq. Ft. of GCC Facilities	KBTU per Sq. Ft	KBTU per Sq. Ft. % Annual Change
FY2002	14,388,950	1,691,194	69,437	103,279	16,252,860	300,624	54.1	~
FY2003	19,323,603	2,212,369	172,759	172,964	21,881,695	300,624	72.8	34.63%
FY2004	13,821,220	2,606,574	120,820	354,795	16,903,411	300,624	56.2	-22.75%
FY2005	17,363,289	2,606,734	194,146	374,527	20,538,696	300,624	68.3	21.51%
FY2006	16,138,815	6,269,895	193,035	401,877	23,003,621	300,624	76.5	12.00%
FY2007	13,726,732	9,512,816	112,210	309,213	23,725,339	300,624	78.9	3.14%
FY2008	14,537,640	9,275,273	170,676	397,131	24,380,821	300,624	81.1	2.76%