

Question / Suggestion: What is the Carroll County Public School System doing to reduce/control **utility costs**?

Response: This is a complex area and there are a number of strategies in use throughout the system. A number of them are discussed below.

**Locking-in Utility Costs:**

The school system has engaged in long-term contracts for electric use for several years to lock-in prices with more competitive electricity suppliers when market conditions are favorable rather than buy electricity from the electric service company. This strategy is believed to have provided a savings of \$880,913 in FY 2009 and is projected to provide a savings of \$848,171 in FY 2010. Although it is believed similar savings will be realized in FY 2011, the savings for FY 2011 will be determined when the regular electric service company provides us with electric rates for the coming year that can be compared to the locked-in cost.

Natural gas is being similarly procured. Although the current contract began late in FY 2009, a savings of \$78,853 is estimated; with a full year in FY 2010 a savings of \$401,200 is estimated, and significant savings are expected to continue in FY 2011.

Futures for heating oil have been purchased which are expected to save at least \$250,000 in FY 2010. Significant savings are expected to continue in FY 2011 as a result of buying fuel oil futures when market prices are favorable.

**Efficient Climate Control (HVAC) Systems:**

When feasible, the school system is installing geothermal HVAC solutions in its schools. Ebb Valley Elementary School (opened fall 2008) was constructed with geothermal features which consume 44% less electricity than a similarly-sized school with a conventional HVAC system. Manchester Valley High School (opened fall 2009) was also constructed with geothermal features and is projected by the system designers to cost \$91,464 less to operate in FY 2010 and FY 2011 than with a conventional HVAC system. Additionally, a replacement HVAC project is underway at Westminster High School will include geothermal systems.

**Energy Management:**

Johnson Controls has been brought in to implement energy management solutions including retrofitting light fixtures and installing intelligent HVAC controls. In the short term, these improvements are partially offset by the cost of procuring the improvements, but we expect similar savings to FY 2008 when savings of \$1,619,756 exceeded the guaranteed savings of \$852,734 by \$767,022. Similar savings were expected in FY 2009 and FY 2010; more significant long-term savings will be realized when the procurements are paid off.

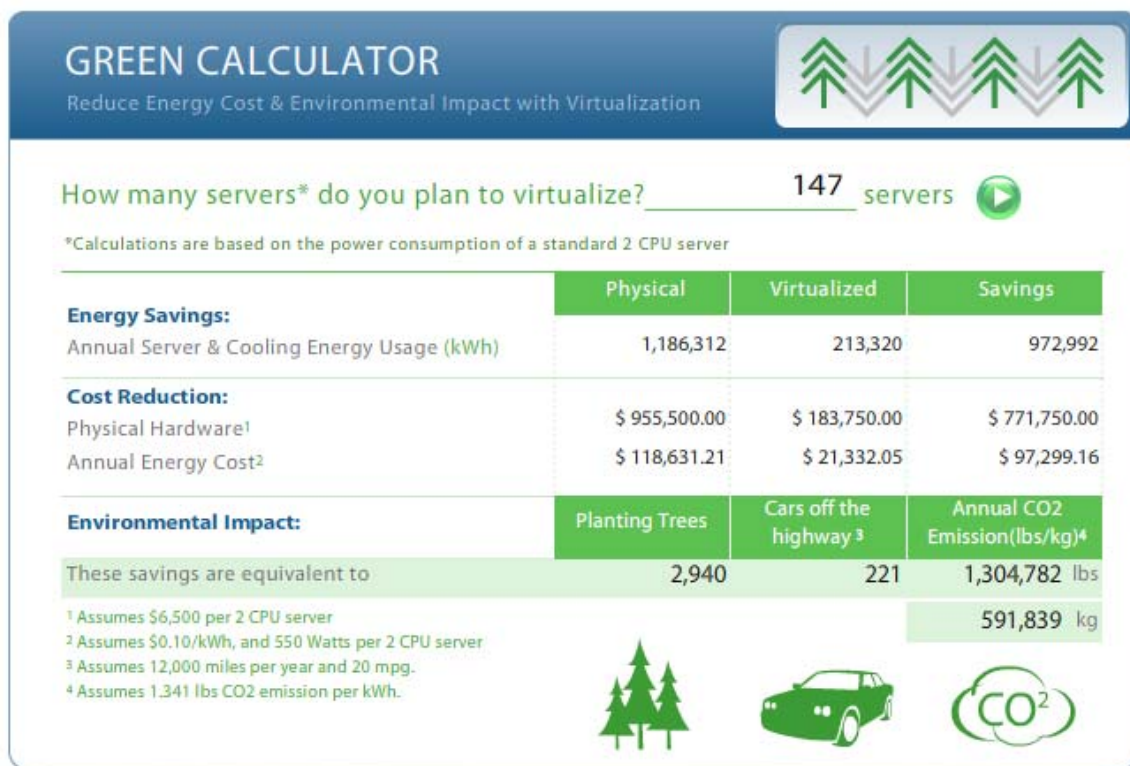
**Technology:**

Telephony: Conversion to VoIP (Voice Over Internet Protocol) phone systems utilizing the fiber-optic Carroll County Public Network capacity allows for reduced telephone charges and increased connectivity between central office and individual school buildings. Central Office and 5 schools are now operating in this new manner, and all school system facilities are expected to be converted by 2013. Annual savings are expected to be \$240,000.

Idle Desktop Computer Up-time: Using the fiber-optic Carroll County Public Network capacity and new network operating framework (software) to manage desktops (including frequent software/security updates) allows for individual desktop computers to be remotely powered up, updated, and powered down again. This functionality will be rolled out to schools as they are connected to the Carroll County Public Network and are converted to the new network operating system.

Monitors: Since the cost and reliability of LCD (liquid crystal display) computer monitors has improved, the system has begun deploying these monitors during its routine computer replacement cycle. An LCD monitor has a longer lifespan than a CRT. LCDs can be used 30-50 thousand hours before it reaches half-brightness, while a CRT will last 10-20 thousand hours. The average LCD monitor uses 57% less electricity than a comparable CRT (traditional) monitor, and there is also 55% less heat given off, which reduces cooling costs.

Servers: One of the major initiatives CCPS has undertaken over the past several years is to “virtualize” servers. Without going into the technical details, it is running multiple servers on one larger piece of hardware. It is similar in concept to “thin clients” on the desktop computer side. There are several advantages to using this technology but cost reductions and energy savings are two of the biggest. Running what has been done over the past several years through a “green calculator” came up with the following results, which are an estimate but still informative.



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**Other / Total Electrical Use Reductions:**

Following a system-wide effort to reduce electric use in FY 2009 by turning off lights, equipment, teaching aids, etc., when not in use, overall electric consumption in schools operating in FY 2008 and FY 2009 was reduced by 3.6% in FY 2009 when compared to FY 2008, and so far in FY 2010 electric consumption has been reduced by 7.1% when compared to the same period in FY 2008, and 2.7% when compared to the same period in FY 2009.