

Santa Fe
Public
Schools

ENERGY CONSERVATION PROGRAM

 **be** the
change
Santa Fe



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Saving Money, Saving Resources

BACKGROUND: A SUCCESSFUL FIRST YEAR

In the fall of 2010, Santa Fe Public Schools officially embarked upon a path of energy management and sustainability. With nearly 2.5 million square feet of unique and varied buildings on our 32 sites, 12,500 SFPS students, and 1,705 staff members, we recognize the community benefits of implementing a systematic approach to sustainability and energy efficiency. During our first year of the program, FY 2011, SFPS reduced its natural gas usage (during the coldest winter on record) by 12%, and reduced its electrical use by 8.2%. In combination with facility modifications, PNM retrofit rebates, and behavioral changes, SFPS was able to offset utility costs by \$233,672 in its first year of the program. This is only the beginning.

Why is SFPS focusing on Energy Conservation?

Not only is focusing on energy conservation good for the environment, it is also good for reducing our operational budget to support teachers and kids. In addition, energy conservation promotes student awareness and knowledge about our environment and complements classroom science curriculum, allowing students to understand the importance of conservation and to conceptualize how they can make a difference for the future of our planet. All of us—students, teachers, administrators, parents and our community partners—together play a role in sustaining our school community.

What is the SFPS Energy Conservation Program?

Investment of capital funds from the current 2009 General Obligation Bond Energy Package enables SFPS to realize significant savings in our Operating Budget, which primarily supports teacher pay and benefits. The 2009 General Obligation Bond Energy Package is a commitment by SFPS to our students, our teachers and the community to reduce our energy use through a variety of energy efficiency programs and facility upgrades.

What are the Conservation Program goals?

The initial focus was on site utility usage and gathering data to develop an energy use baseline. Numerous initiatives have been underway in all schools and facilities to;

- Reduce operating/utility costs
- Improve the learning environment
- Further responsible stewardship of resources
- Reduce greenhouse gas emissions
- Enhance environmental curriculum
- Increase energy security and
- Increase support for future construction funding

The Conservation Program focuses on reduction of energy use at every facility, energy efficient mechanical systems, green building materials, grants, rebates, building design, and energy conservation curriculum for the classroom.

What were the 2011 FY utility costs for lights, heating, cooling, cooking, refrigeration, cleaning, bathrooms and water?

SFPS spends a lot of operational budget money on utility bills. If we add up the electrical, natural gas, water, sewer, recycling, and solid waste bills from July 2010 to June of 2011, we spent almost \$3.4 million dollars. We also used 54 million gallons of water. That is \$9,315 a day, or \$65,384 a week, or \$283,333 a month and 147,945 gallons of water a day. Our water rates are also increasing by 8.2 % each January and PNM raised our electrical rate by 9.2% in August 2011.

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What are some of the energy conservation initiatives?

- District wide retrofit of T12 lighting to high efficiency T8s (30% savings per fixture)
- District wide retrofit to Occupancy Sensors in all appropriate spaces
- District wide implementation of HVAC System Automation–Direct Digital Control of thermostats and building climate, pilot-dashboards and kiosks
- Utility Benchmarking–identification of all site accounts, verification of charges/rates and data base development, streamlining accounts and ongoing audits of all 167 utility accounts
- HVAC Inventory–complete listing of every piece of mechanical equipment, its make, model, year made, area served, with specs and pictures
- Energy Audits–beginning with Kearny, Pinon and Ramirez Thomas/ Nye ECC
- ENERGY STAR® Verifications–9 sites assessed so far, with more to come
- Photovoltaic (Solar) Power Purchase Agreement–Two 280 kw at SFH, One 1.1 megawatt at Capital–a potential of 1.6 megawatts of solar power
- Window Film–Pinon pilot, SFH Student Services and Nava Library
- Electrical sub-metering to monitor usage at Chaparral and General Services
- District wide water “Smart” Meters for real-time water use monitoring, leak control & irrigation monitoring
- Design Guidelines Update–embedding energy efficiency
- District Wide aerators installed on hand-washing sinks and spray valves in cafeterias–water usage reduction, hot water natural gas reduction

- High Bay Sodium and Metal Halide light fixtures retrofitted to T5s in Gyms, Cafeterias and Libraries
- LED Wall Paks on exterior walls
- LED Motion Sensitive Parking Lot Lights

Does SFPS recycle district wide?

Proudly yes. The City of Santa Fe and Waste Management pick up recycled materials at each facility. Aluminum, paper, plastic, tin, and some cardboard are all being recycled.

Styrofoam reserves are now depleted, and we use only 100% recycled newsprint disposable trays, which are compostable and biodegradable, and processed without chlorine. While disposable trays are a step in the right direction, reusable trays are our ultimate goal.

Is water conservation being practiced?

Yes. We all know water is a scarce resource and the possibility of a prolonged drought is very real. In FY 2011 SFPS used nearly 54 million gallons of water, or 147,945 gallons a day. By replacing standard faucets with one half gallon per minute aerators we will save an estimated 4,000 gallons annually on each faucet! The six facility retrofits thus far have an annual water savings equal to 2,688,924 gallons and we intend to do this in every site in the district. Smart meters at our facilities will monitor real-time water use, leak control and irrigation demands. These are the first of many water conservation ideas to be put in motion. We are also looking at artificial turf replacement for the multiple grass fields throughout the District.

Is SFPS using specific energy conservation guidelines?

Yes. SFPS is using numerous guidelines and protocols to ensure the most efficient approach to energy conservation, including the New Mexico Public School Energy Management Program Guide, the Department of Energy and Environmental Protection Agency Guidelines for Energy Management, Collaborative for High Performance Schools, PNM’s KEMA program and New Mexico Gas Company’s SCORE program. We have also partnered with numerous programs to ensure best-practice initiatives, including Earth Care, Keep Santa Fe Beautiful, AmeriCorps, ENERGY STAR, City and County of Santa Fe conservation programs, and EarthWorks, to name just a few.

Is SFPS considering using solar power as an alternative energy source?

Yes. To support our sustainability efforts, SFPS intends to purchase clean renewable energy and reduce energy costs. We are in the process of finalizing approval for a 1.6 megawatt Solar Power Purchase Agreement for both Capital and Santa Fe High Schools. There will be no upfront costs to SFPS. A solar supplier will finance, build, own, and maintain the solar system. SFPS will buy the power produced at an ensured and reduced rate, resulting in on-going utility savings for 20 years and providing a hedge against future utility rate increases. The solar system will also provide opportunities for science based energy curriculum for our students. To support the LEED GOLD initiative at Amy Biehl Community School, SFPS recently purchased Renewable Energy Certificates to offset 70% of its electrical carbon emissions for the next 2 years. Santa Fe High has had a 4KW solar demonstration installation in operation for over a year now, and both Gonzales and El Dorado will have PV arrays when construction is complete, adding to Gonzales’ current PV demonstration unit.



 **We are the change**



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2,688,924 gallons—and we intend to do this to all 32 sites**

How are students being involved in the classroom?

As our energy conservation initiatives get off the ground, we have been getting information, energy kits and curriculum connections to teachers for use in the classroom. While our first year focused more on reducing systems energy use, we intend to look at more ways to bring energy awareness curriculum to the classroom. Awareness materials, including signs, posters, interactive writings and reminders are the first step in the process.

EarthCare's Youth Allies, AmeriCorps Volunteers, and Food Cadre formed an EcoSchools Student Coalition. The Coalition works within their school sites to design and lead an EcoSchools campaign and work closely with the Sustainability Task Force and SFPS District to move our schools toward a more sustainable future. In partnership with SFPS, EarthCare placed volunteers at Salazar Elementary, Amy Biehl Community School, Aspen Community School, Capital High School, Acequia Madre Elementary, Tesuque Elementary, Santa Fe High School, SFHS Teen Parent Center, Agua Fria, and Nava Elementary. Students are engaged in food and nutrition education, advocacy, community organizing, service learning, urban agriculture, and environmental awareness.

Santa Fe High has many sustainable activities, including a greenhouse, a 4 KW solar panel installation for electrical generation and student demonstration, and many teachers and classes focused on environmental stewardship.

De Vargas Middle School physical science classes have had 120 students conducting Leadership in Energy and Environmental Design (LEED) assessment of their school.

Capital High School's Capital Green Project includes a wide-variety of greenhouse, landscaping and beautification projects for science, art, history and Spanish classes.

Wood Gormley has included curriculum on resource use and sustainability. These are just a few of the many site based sustainability efforts underway in our schools.

Are design and construction of school renovations and new construction energy efficient?

Yes, we are getting there. SFPS has become an ENERGY STAR Partner, and we have 5 schools designated with ENERGY STAR status, with many more to come. Energy efficiency has become a priority in construction and design, as well as in day to day operations, and while we have much room for growth and improvement, we are well on our way to becoming a leaner and greener public school district. We are hopeful our community will continue to support these efforts for our future—the children of Santa Fe.

What does SFPS hope to accomplish in Fiscal Year 2012?

Our goal is to reduce our energy and water use by ten percent (10%) in FY 2012. We are in the process of conducting energy audits on many of our facilities to identify additional areas and programs for energy conservation and sustainability. Water rates from the City have increased 8.2% for the last four years and will increase again 8.2% in January 2013. PNM electrical rates increased 9.2% in August 2011. Finalizing the solar power agreement for Santa Fe High and Capital off will help offset PNM electrical rate increases.

SFPS will continue on-going successful program initiatives, including energy curriculum, retrofits, evaluations, recycling, waste audits, solar and ENERGY STAR opportunities.



What was the total cost of the GO Bond Energy Package which made the Conservation Program possible?

The total project cost was \$4,500,000.00.

If SFPS develops an energy plan for the next Facilities Master Plan and General Obligation Bond, what would the energy plan most likely address?

While it is too soon to tell, we do know there are several ideas teachers would like to see us address. A staff survey of energy conservation issues was conducted and ideas of special interest include the continued use and pursuit of alternative energy, recycling, energy efficient facility design, curriculum/ education, water management and continued upgrades and retrofits.

Together we can reduce our use and become a more sustainable school district. We hope you'll join us and "Be the Change" Santa Fe.