

# green BVSD PROJECTS

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## Mission Statement

"The Boulder Valley School District is committed to becoming a leader in environmental sustainability by creating healthy learning environments, while providing students with the skills to address the systemic challenges faced by the world in this new century."

—BVSD Sustainability Management System

# EFFICIENT

XCEL ENERGY  
EFFICIENCY PARTNER 2010

**Xcel Energy  
named BVSD  
as one of four  
2010 Efficiency  
Partner Award  
winners!**

## Questions? Comments?

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## Boulder High School Auxiliary Gym Retrofit

**B**oulder High's Old Gym has been lit by 400 watt Metal Halide High Intensity Discharge (H.I.D.) light fixtures for decades. Metal Halide lighting technology dates from the 1960's. Problems with Metal Halide include uneven light distribution and high heat production. The lamps are also energy intensive and are expensive to replace. One of the biggest complaints staff has with metal halide fixtures is the required warm up period when switched on. Consequently, this type of lighting is rarely turned off during the day—even when not in use!

The existing fixtures were replaced this summer with hi-bay fluorescent fixtures



**H.I.D. fixture**

manufactured by [Williams Lighting, Inc.](#) The lights use approximately half the amount of energy, distribute light evenly, and have instant on-off switching. Each fixture has its own occupancy sensor as an additional energy saving feature, which will turn the lights off automatically when the space is not in use. BVSD should save an estimated \$1,200 per year in energy and maintenance costs with the new lights. The Energy Team hopes to replace H.I.D. light-

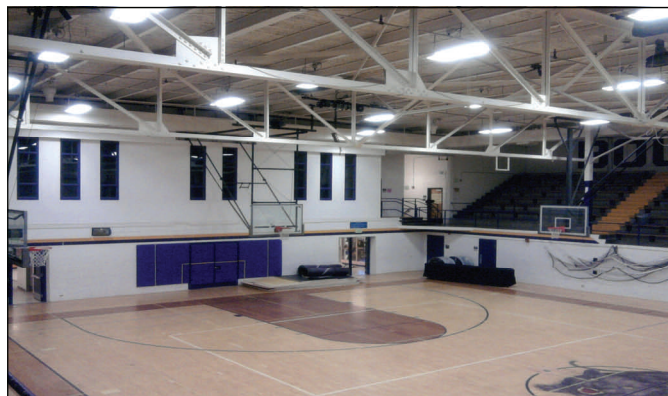


**Hi-Bay Fluorescent**

ing in gyms throughout the district as funding becomes available.

In addition to the lighting retrofit, destratification fans were installed in the gym to regulate temperature during the heating season. Air at the ceiling can be 6 or more degrees warmer than at the floor. By moving the air back to occupants, the temperature will be regulated to about a degree, which will reduce energy use and increase comfort.

The fans are manufactured locally by [Airius](#) in Longmont.



**Boulder High's Auxiliary Gym "after" lighting retrofit**



**Destratification Fan**

## Variable Frequency Drives

Eighteen variable-frequency drives (VFD) were installed in five schools this summer to help save energy on the fans and pumps that heat and cool the buildings. VFD's control the rotational speed of motors by controlling the power supplied to the motor and are used widely with fan and pump motors. VFD's save energy by allowing the volume of air or water that is moved to match the demand that the heating or cooling system needs. Otherwise, motors spin at full speed whether needed or not. Work occurred at Superior Elementary, Eldorado K-8, Monarch K-8, & at Monarch and Centaurus High Schools.



Did you know?

**BVSD has 13 facilities with solar panels and more are on the way this year! To learn more about solar on our schools go to [www.conservationcenter.org/energy/renewourschools](http://www.conservationcenter.org/energy/renewourschools).**

**Operational Services Purchases Utility Software**

"If you can not measure it, you can not improve it."  
—Lord Kelvin

As a means to comply with the District's Sustainability Management System (SMS), the District evaluated leading utility tracking software packages and recently purchased [Utility Manager Pro™](#) software. A grant from the Governor's Energy Office helped fund the purchase.

Utility bill data is important information yet it's how the data is leveraged that maximizes savings opportunities. The software measures monthly utility bill and meter data to report and understand energy cost and consumption, including cost per square foot, cost per student, facility benchmarking, and school comparisons. The software also has the ability to budget and forecast costs, calculate cost avoidance, as well as verify bill accuracy. This will be a powerful tool for the District in cutting costs and conserving energy!

**New Vista first to pilot "Green Team"**

The Earth Task Force (ETF) at New Vista High School in Boulder is a group designed to give students an opportunity to take the lead in addressing local environmental issues at their school and in the local community. With the support of the Cottonwood Institute Earth Task Force Mentor, New Vista High School teacher sponsors, and the Boulder Valley School District, students and staff meet twice a week during lunch to come up with fun, creative, and accessible solutions that the school community can take to help reduce their school's environmental footprint. The Earth Task Force is focusing their efforts in the following areas: Education, Energy, Waste, Water, and Transportation.

**Accomplishments**

✦ The Boulder Valley School District agreed to sponsor the ETF at New Vista High School to be the first pilot "Green Team" and hopes to sponsor similar sustainability initiatives at other district schools. BVSD gave ETF \$500 to get started for materials, coffee mugs, copies, etc.



✦ ETF helped write a grant to The Earth Day Network and won a \$32,000 solar panel system for New Vista High School, which was installed just before Earth Day 2010.

✦ They received a \$2,000 grant from the Alliance for Climate Education to install low flow toilets in their school to help reduce water use at their school and Boulder Valley School District matched this grant with an additional \$2,000.

✦ ETF received a \$500 grant from the Alliance for Climate Education to host Boulder Valley School District's first Environmental Summit to bring together BVSD school environmental clubs to share ideas, resources, challenges, and to gain inspiration from one another.

✦ The task force created a Green Pledge for students to reduce their environmental footprint. 127 students signed the pledge and Boulder Valley School District donated \$381 (\$3 per pledge) to purchase vending machine misers to help lower their vending machine energy use.

✦ ETF successfully organized "Lights out Lunch," "Local Lunch," "Bring Your Own Coffee Mug," "Alternative Transportation" events and 2 all school assemblies to raise awareness about local environmental issues and encourage

their school community to take action to reduce their environmental footprint.

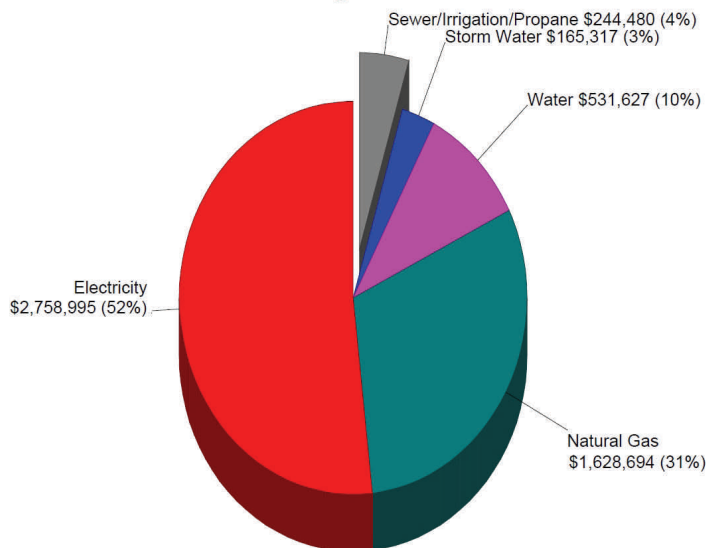
✦ A pollinator/local food garden was started at school to use for educational purposes and to help build community. They also started and are running a compost system for food scraps from their school, which will help create soil for the garden.

✦ They have received positive media attention for their efforts, including: an article by Vanessa Miller from the Boulder Daily Camera, an interview by Nikki Kayser on the Dot Org show on 88.5FM in Boulder, and an article by Marisa McNatt posted to Earth911.com.

✦ The group was awarded for all of their hard work and accomplishments. Two ETF members, Zander Deetz and Aaron Fox, won the 2010 Outstanding Youth Volunteer Award by the City of Boulder Youth Opportunities Board and each member was recognized by the Boulder Valley School District by receiving Superintendent's Honor Roll certificate. They launched a website to promote their activities, events, and initiatives: [www.earthtaskforce.com/](http://www.earthtaskforce.com/).

*Ford Church from the Cottonwood Institute contributed to this article.*

**Total Utility Cost for Boulder Valley School District Year Ending 12/2009**



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