

Manchester School District



Update

Earth Day Poster Contest

Manchester's middle school students have taken on the challenge of designing a new mascot to represent sustainability for the City of Manchester. During Earth Week, students will be sharing ideas and tips to reduce energy and spread the word on how everyone can directly affect energy consumption, reduce carbon emissions, and strive to be good environmental stewards.

Many teachers and parents may remember the historical image of 'Ready Kilowatt' the mascot which was used by the electric utilities as a symbol of electric power. Manchester School District is looking for students to create a similar mascot to represent the efforts and motivation of the School District to reduce its energy consumption and improve sustainability on a day-to-basis.

Each middle school will combine art and science programs to inform and provide a stage for a poster contest, with the winner of each school competing toward the final selection of a city-wide winner. Final winning entries from each school will be judged by members of the business community directly related to energy and community planning. Students at each school will be awarded prizes and the final entries will be posted as an art exhibit at City Hall.

Sponsoring and facilitating this contest and program is ARAMARK Engineering Solutions. ARAMARK is currently completing the final stages of a city-wide energy program that involves the installation of energy retrofits, retro-commissioning, and implementing energy awareness activities.

Program Activities

During the late winter and early spring, several energy projects have been completed throughout the Manchester School District. Additionally, the projects completed last summer and fall are reducing energy consumption in all of the retrofitted schools. The energy savings results are shown on the next page and cover the period through the end of December 2011. The next quarterly energy report, covering the period from January 2012 to March 2012, will be available once all the utility bills have arrived and are entered into the report program database. That is projected to be completed by June 2012.

Due to the results of the energy projects and the dedicated efforts of the Manchester School District and the Facilities Team at the Highway Department, several schools have reached the EPA's Energy Star Certification rating level. The schools listed below are now more efficient on an energy consumption basis than 75% of similar school buildings across the country.

- Bakersville Elementary School
- Central High School
- Highland Goffes Falls Elementary School
- Hillside Middle School
- McDonough Elementary School
- Memorial High School
- Manchester School of Technology
- West High School

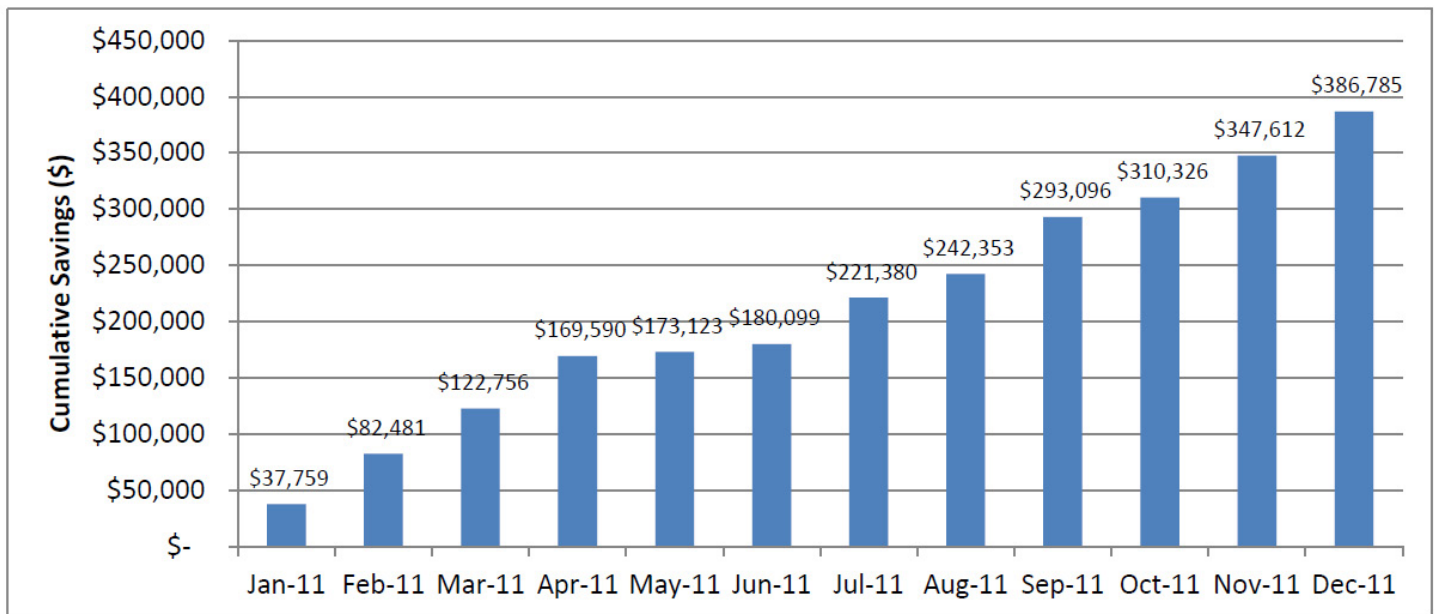
Efforts are also underway to obtain the actual Energy Star Certification for each school.

Energy Program Performance Summary

Fourth Quarter Performance (2011)	Contract Year to Date (since January 2011)
Consumption Reduction ¹ : <ul style="list-style-type: none"> Energy Reduction: 12.3% 	Consumption Reduction ¹ : <ul style="list-style-type: none"> Energy Reduction: 10.6%
Financial Savings: \$93,689 <ul style="list-style-type: none"> Electricity: \$67,489 Natural Gas: \$26,199 	Financial Savings: \$386,785 <ul style="list-style-type: none"> Electricity: \$256,856 Natural Gas: \$129,929
Greenhouse Gas Emissions Avoided: <ul style="list-style-type: none"> 629,204 lbs of CO₂ 	Greenhouse Gas Emissions Avoided: <ul style="list-style-type: none"> 2,504,442 lbs of CO₂

¹ Comparisons are made to the Base Year. Base Year periods vary slightly for some meters but all fall between July 2009 and June 2010.

Cumulative Savings



Current Profile (Past 12 months)

- Energy Intensity: 57 kBtu/SqFt

Baseline Profile (July 2009 – June 2010)

- Energy Intensity: 60 kBtu/SqFt

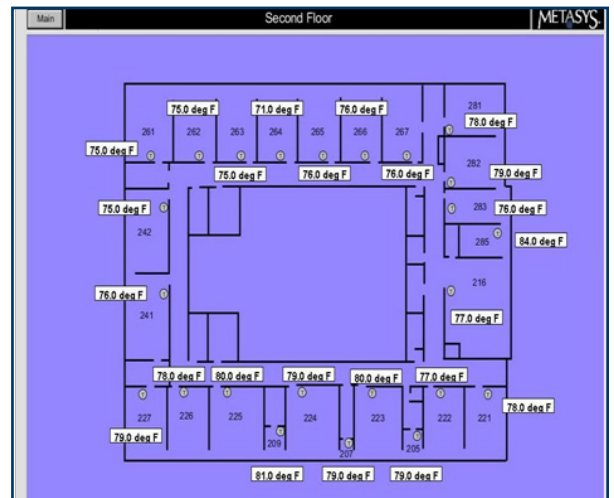
Direct Digital Controls Support Your Comfort

The Manchester School District has 22 school buildings and they all contain energy management systems. This system, which is one of the largest in the state of New Hampshire, monitors, controls, and maintains the climate conditions in the city schools. During the recent Phase II Energy Projects, several of the schools were involved in modifications and additions to the Energy Management System. The photo to the right depicts a recent installation of variable frequency drives to control the hot water pumps installed at Weston Elementary School. These drives will control the speed of the hot water pumps as they react to the actual heating load in the building. By varying the speed of the pump motors, the amount of energy consumed to operate the pump is matched to the actual load. Therefore, if all or some of the heating valves in the classroom are closed, the motor will slow down and decrease the water flow. This type of retrofit not only saves energy, but prevents overheating problems due to system over pressurization.



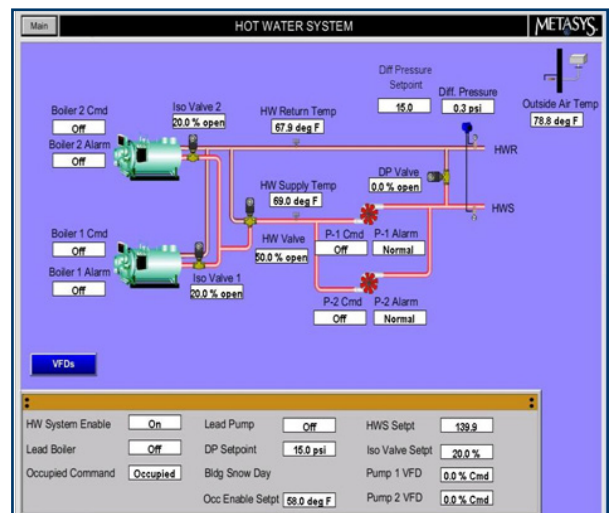
Verifying Operation and Comfort

As mentioned in the last issue of this newsletter, one of the energy projects taking place was retro-commissioning. This project was undertaken on all of the schools hot water and zone control systems and was completed in February. The operation of each school's boiler, hot water pumps, and zone controls were carefully inspected and tested to verify the correct sequence of operation. The results of that effort were documented and reports were issued with full functional testing information. Since that time, the City Facilities staff has been completing calibration and corrective actions on non-compliance items. The goal of this program was to improve the efficiency of the existing systems and report on any required repairs.



The school district energy policy states the temperature conditions for the occupied periods of the school day. In the unoccupied periods the temperature is allowed to be reduced to save energy, but not drop too low. Typical unoccupied temperature set back is 8 degrees Fahrenheit. Before the start of each school day, the Energy Management System will raise the occupied temperature set point to normal conditions. The Energy Management System screen shot to the top right depicts the actual temperature sensors on the second floor of McDonough Elementary School.

The screenshot to the bottom right shows an example of the graphics for the hot water heating system at Bakersville Elementary School.



ENERGY SAVINGS IDEAS

It is important to remember that more than 1/3 of all the energy consumed is by people at home. Purchasing new appliances for your home? Look for the EnergyGuide label and compare the annual energy costs between your choices.

You can also reduce your household energy consumption by following the simple tips below:

Laundry Tips

- Wash your clothes in cold water, using cold-water detergents whenever possible.
- Wash and dry full loads. If you are washing a small load, use the appropriate water-level setting.
- Dry towels and heavier cottons in a separate load from lighter-weight clothes.
- Don't over-dry your clothes. If your dryer has a moisture sensor, use it.
- Clean the lint filter in the dryer after every load to improve air circulation.

Water Heating Tips

- Install aerating, low-flow faucets and showerheads.
- Repair leaky faucets promptly; a leaky faucet wastes gallons of water in a short period of time.
- Lower the thermostat on your water heater; water heaters sometimes come from the factory with high temperature settings, but a setting of 115°F provides comfortable hot water for most uses.
- Insulate your electric hot-water storage tank, but be careful not to cover the thermostat. Follow the manufacturer's recommendations.
- Insulate your natural gas or oil hot-water storage tank, but be careful not to cover the water heater's top, bottom, thermostat, or burner compartment. Follow the manufacturer's recommendations; when in doubt, get professional help.
- Insulate the first 6 feet of the hot and cold water pipes connected to the water heater.

Superintendent
Thomas J. Brennan

Assistant Superintendent
Karen Burkush

Assistant Superintendent
Michael Tursi

Business Administrator
Karen DeFrancis

Check out Manchester's Sustainability Website

Want to learn more about the City of Manchester's sustainability efforts? Then visit www.manchesternh.gov/energy. Since this site went public last year many changes have been made, below is a brief summary of some of the changes made:



Under Action by Individuals - Cool Resources

- Includes a 'Just for Kids' Section with links to other sites related to student activities and information.

Under Action by Individuals - Ask the Professionals

- You can ask the City a question on an issue related to sustainability – check out the previous questions and the answers as well.

Under Action in School Buildings - Teacher Resources

- There are several helpful websites for educators.

Under Action in School Buildings - Energy Savings Data

- You can download and read the most recent Manchester Schools Energy Savings Report.

Under the Action Showcase - By Map

- This new map of Manchester feature allows you to find your school and see what projects have been completed and the resulting reductions in energy consumption.

Under the Action Showcase - Featured Project

- Check out the details on the recent Hallway Lighting Project that took place at several of the City's schools.