

Calvert County Public Schools Resource Management and Energy Conservation Plan

Goals

To increase environmentally sustainable actions and behaviors among students, staff and school community to conserve energy and natural resources, including waste reduction and recycling

To manage natural resources and to conserve energy at Calvert County Public Schools (CCPS) facilities by using education and the implementation of energy saving devices, renewable energy sources, and the exploration of new practices and technologies

To involve all CCPS' students, employees, and facility users to conserve natural resources and achieve maximum energy conservation

Overview

Pursuant to Policy #4550.1, this Resource Management and Energy Conservation Plan (RMECP) will help manage resources and conserve energy costs whenever and wherever possible. The Department of School Facilities will be responsible for monitoring utility usage and implementing the improvements and procedures necessary to produce energy savings. However, energy conservation is the responsibility of every employee of CCPS. There are five utilities that must be monitored and conserved: electric, fuel oil, natural gas, propane, and water/sewerage. Every fiscal year, the budget for these utilities has continued to escalate due to rate increases and, to some degree, increased usage. With increases to rates and the development of new technologies that better support energy conservation and resource management, we will continue to research and explore our options to control our utilities budget.

Additionally, the RMECP will include the establishment of a comprehensive waste reduction and recycling plan. With the increase cost of waste disposal, which is dependent upon contract costs and the increased amount of waste generated, CCPS will continue to research and explore our options to control our waste disposal budget.

Implementation

Installation of energy and resource saving devices and controls will be directed primarily towards the buildings with the most need. Schools that have energy savings incorporated into their design will also be considered for improvement. The Department of School Facilities will be involved directly with energy management improvements and resource management. Changes in daily practice will also become an integral part of energy and resource management for CCPS. These changing practices will guide the system towards decreasing energy and resource consumption. It is our intention to make our buildings as energy efficient as possible without decreasing the integrity of the teaching environment.

Mission

CCPS shall institute guidelines and goals and will disseminate information to staff, students and the public pertaining to energy conservation and resource management. In support of this goal, staff from the Department of School Facilities will visit each school and meet with school staff. Reducing energy and resource consumption shall be a continuing priority for CCPS and this message will be conveyed regularly to all employees. The intent is to reduce energy and resource usage to conserve resources and manage budgetary concerns. This mission shall be reviewed continuously so that school system goals can be attained.

Initiatives

CCPS has implemented the following initiatives:

- Follow EmPOWER MD energy reduction goals
- Educate employees and students on energy conservation and resource management
- Install electrical and HVAC upgrades to reduce energy consumption and save resources
- Apply for grants to support and promote energy conservation and resource management in all school system facilities
- Involve students and staff in the development of energy and resource conservation techniques

Review of Energy Consumption

Reducing energy consumption in our buildings shall include, but not be limited to, all guidelines set forth by CCPS. Energy Control devices that incorporate artificial intelligence shall become an extensive part of this program, so manual adjustments to control settings are not required on a regular basis. Staff in the Department of School Facilities will periodically review and evaluate energy use to determine which buildings may become candidates for future energy conservation projects. Implementation of projects shall be determined according to cost, availability of funds, and estimated return on investment. An analysis will be included with each project to show savings statistics.

Initiatives such as EmPOWER Maryland, will impact our responsibility to conserve energy. CCPS will change their reduction goals to mirror those of EmPOWER Maryland where ever applicable. Emphasis on energy conservation must continue to assure initiatives and goals will be achieved. Present and future rate increases have made it essential to be creative and resourceful to reduce energy consumption and conserve resources.

Energy Conservation Practices

Energy consumption can be reduced by properly managing the following:

- Electricity
- Heating
- Air Conditioning
- Gas
- Water & Sewerage

Electricity

Employees and facility users are expected to adhere to the following conservation guidelines in order for CCPS to achieve its goal of reducing energy consumption and conserving resources:

- Turn lights off when areas are unoccupied
 - Stadium, gym, and auditorium lights should be managed accordingly, and schedules will be scrutinized
- Turn off SmartBoards, monitors, speakers, and all other accessories when leaving for the day.
- All PC's and laptops will be monitored and operated to maximum energy efficiency by the Department of Information Technology
- Personal appliances shall NOT be brought into schools or offices.¹ These include, but are not limited to:
 - Coffee makers
 - Space heaters
 - Refrigerators
 - Toasters
 - Crock pots
 - Popcorn makers
 - Microwaves
 - Air-fresheners
 - Air-freshener plug-ins

- Floor lamps are prohibited in classrooms and/or offices. Although the intention may be to reduce overhead lighting and potentially save energy, floor lamps are not safe and therefore not permitted in classrooms. Desk lamps are acceptable and can be used as an energy savings measure.
- It is important that all staff know that artificial air fresheners are not permitted in our schools (Vader). Air fresheners contain volatile organic compounds or chemical irritants known to trigger asthma and allergy symptoms
- Please refrain from bringing in any items that emit odor of any kind. If found these items will be removed.
- Turn off radios, televisions, stereos, A.V. equipment and other accessories when not in use
- Turn off copy machines and printers when leaving for the day
- Exhaust fans shall operate Monday thru Friday, during normal occupancy hours, unless scheduled to run additional time for an after school or outside events
- De-energize vending machines from 10:00 p.m. to 6:00 a.m. daily. De-energize extra machines in the buildings over school breaks
- Parking lot lights shall operate Monday through Friday. Exceptions will be made for weekend and evening activities during the school year

¹ Additional appliances that are used in the classrooms can cause circuits to overload. There is the added possibility that items such as space heaters, can become fire hazards and are considered a "high-risk" by our insurance carrier. For this reason, space heaters are prohibited and will be confiscated.

- Parking lot lights will not be operated during summer hours
- Turn off message boards during school breaks
- Large kitchen equipment shall only be in operation when school is in session and when preparing food. Every effort shall be made to conserve energy, including, but not limited to:
 - Energizing hood exhaust systems
 - Using cooking equipment only while preparing food
 - Purchasing only high efficiency kitchen equipment
 - Limiting food storage to only a few walk-in refrigerators and freezers during the summer break so the majority can be de-energized

Heating

Heating season runs from approximately October 15th through April 15th, depending on outside air-temperatures. Every effort shall be made to take advantage of seasonal temperatures before switching over to heat. Indoor air temperatures will be based on the American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) Standard 55. The following are efforts identified to conserve during the heating season:

- Thermostats shall be set for an average of 68 degrees for all offices and secondary schools. Thermostats shall be set for an average of 70 degrees for all elementary schools (Calvert Country School excluded). Boilers shall be operated for maximum efficiency.
- During a building's unoccupied mode, thermostats shall have a night set back temperature of 55 degrees.
- Exterior doors and windows shall remain closed during the heating season, unless directed to do otherwise by the Department of School Facilities.
- Adjustments and calibrations of thermostats shall be done by the Department of School Facilities staff only. Under NO circumstance is anyone permitted to tamper or reset a thermostat. Only facility maintenance staff can make an adjustment to a thermostat or programmable HVAC control device.
- The area around floor mounted unit ventilators (through the wall) shall be clear of items allowing the units to operate properly and efficiently. The unit should not be used as a shelf, as it will block the supply vent. A minimum of 3 feet must be maintained in front of the unit to ensure proper air flow.
- Boiler rooms shall be kept free and clear of any storage. This is necessary to maintain proper combustion air and to comply with all fire codes.
- Heating shall operate during normal occupied hours. In the even the heat is needed to operate for an evening or weekend event, a minimum of 48 hours must be given to the Department of School Facilities in the form of a Heating/AC Request Form. A request that is made with less than 48 hours' notice is not guaranteed to be fulfilled.

Air-Conditioning

- Air-Conditioning season runs from approximately April 15th through October 15th, depending on outside air temperatures. All efforts shall be made to take advantage of seasonal temperatures before switching over to air-conditioning.

- Both elementary and secondary schools shall have their thermostats set per ASHRAE Standard 55, with a temperature range of 75-78 degrees (Calvert Country School excluded).
- Air-Conditioning shall operate during normal occupied hours Monday through Friday. In the event the air-conditioning is needed to operate for an evening or weekend activity, a minimum of 48 hours must be given to the Department of School Facilities in the form of a Heating/AC Request Form. A request that is made with less than 48 hours' notice is not guaranteed to be fulfilled.
- Exterior doors and windows shall remain closed during air conditioning, unless directed otherwise by Department of School Facilities.
- Adjustments and calibrations of thermostats shall be done by the Department of School Facilities staff only. Under NO circumstance is anyone permitted to tamper with the thermostat. Only facility maintenance staff can make an adjustment to a thermostat or programmable HVAC control device.
- The area around floor mounted unit ventilators (through the wall) shall be clear of items allowing the units to operate properly and efficiently. The unit should not be used as a shelf, as it will block the supply vent. A minimum of 3 feet must be maintained in front of the unit to ensure proper air flow.

Gas

- Natural Gas is used for both heating and air-conditioning. Due to the current low cost for gas, it is the preferred choice of fuel for school system boilers.
- Propane gas is used for water heaters, generators, boilers, heating, kitchens (cooking or food preparation) and classroom instruction.
- Both utilities should be inspected daily by the building service manager or his/her designee for leaks, supply failure, and any damage or odor that would need immediate attention.

Water and Sewerage

- Any sinks, commodes, or urinals that are continuously running or leaking shall be reported immediately to the Department of School Facilities for repairs.
- Water pooling at ground level should be reported immediately as this may be a water main that has broken underground and the Department of School Facilities will need to respond accordingly.
- The Building Services Manager or his/her designee will visually inspect sewage ejection pumps daily.
- Water from schools will not be used to supply commercial or fire department tanker trucks, unless an emergency dictates otherwise.
- Water shall not be used for car washes at schools
- Water usage shall be limited when irrigating or watering athletic fields. Irrigation systems shall be controlled by the Department of School Facilities. Playing fields will be given only enough water to maintain a healthy turf. Irrigation systems, where possible, will be controlled by rain gauges so as not to over-water. Irrigation systems shall only

operate during night or early morning hours in order to reduce evaporation and conserve water.

In an effort to attain an even greater reduction in energy consumption and the resultant energy cost savings, CCPS will continue with the Energy Savings Incentive Plan (ESIP) as a continued effort to encourage and engage staff and students to conserve energy. This plan will be reviewed and revised as needed to meet CCPS' current resource management and energy conservation goals and to fulfill the EmPOWER Maryland goals.

Additionally the Department of School Facilities will be responsible for ensuring that all facilities are properly informed on all information necessary for a successful program. Each facility will be subject to periodic on-site energy evaluation to monitor effectiveness of RMECP and to provide support when necessary. Evaluation results and recommendations will be provided to each school.

Storm Water Management

Storm Water Management systems shall be maintained by the Department of School Facilities to control erosion and to limit property damage.

Waste Reduction Practices

As a large contributor of waste in Calvert County, we are responsible for diverting at least 20% of all our waste from entering the landfill. The RMECP will set forth the process and guidelines for CCPS staff, students, and facility users for recycling in accordance with Calvert County Government regulation. The Department of School Facilities will be responsible for ensuring that all facilities are properly informed on all information necessary for a successful program. Each facility will be subject to periodic on-site recycling evaluation to monitor effectiveness of RMECP and to provide support when necessary. Evaluation results and recommendations will be provided to each school.

Only clear bags are to be used for recycling. The following items without food contamination can be deposited in the provided recycling receptacles:

- All paper
- Shredded paper (in a clear bag)
- Magazines
- Cardboard (broken down)
- Aluminum cans
- Bi-metal cans
- Glass bottles and jars
- Plastic containers with NO lids

Each department is responsible for organizing and collecting items that are specific to their daily operations. Items that will be collected for recycling include, but are not limited to:

- Electronics
- Scrap metal

- Lamps
- Toner and ink cartridges
- Re-Chargeable batteries

New Construction

Shall adhere to current regulatory requirements such as Maryland Energy Codes

Education and Evaluation

The Department of School Facilities and/or instruction will:

- Produce monthly energy consumption reports for each school
- Produce quarterly recycling reports for each school
- Give regular reports on energy consumption and resource management to the Board of Education in public session
- Publish information on energy consumption, energy conservation, and resource management in each school system newsletters
- Collaborate to maintain and update a webpage on the school system's website
- Provide instructional opportunities that are aligned with the existing curricular framework that will support student and staff awareness and understanding of human impacts on the use of natural resources
- Chespx will continue with their instructional contribution as an effort to educate the students

Appendix A

Summary of the utility type at each CCPS facility.

School Facilities Utility Information							
Utilities	Electric	Water	Sewage	Natural Gas	Propane Gas	Heating Oil	Geothermal System
Elementary Schools							
Appeal Elementary School	Smeco	Well	Public	No	Yes	#2 fuel oil	No
Barstow Elementary School	Smeco	Public	Public	No	No	No	Yes
Beach Elementary School	B.G.E.	Public	Public	No	No	#2 fuel oil	No
Calvert Elementary School	Smeco	Well	Public	Yes	Yes	No	No
Dowell Elementary School	Smeco	Public	Public	Yes	No	No	No
Huntingtown Elementary School	Smeco	Well	Septic	No	No	#2 fuel oil	No
Mt. Harmony Elementary School	Smeco	Well	Septic	No	No	#2 fuel oil	No
Mutual Elementary School	Smeco	Well	Septic	No	No	#2 fuel oil	No
Patuxent Elementary School	Smeco	Well	Public	No	No	#2 fuel oil	No
Plum Point Elementary School	Smeco	Well	Septic	No	No	#2 fuel oil	No
St. Leonard Elementary School	Smeco	Public	Septic	No	No	#2 fuel oil	No
Sunderland Elementary School	Smeco	Well	Septic	No	No	#2 fuel oil	No
Windy Hill Elementary School	B.G.E.	Public	Septic	No	No	#2 fuel oil	No
Middle Schools							
Calvert Middle School	Smeco	Public	Public	No	No	No	Yes
Mill Creek Middle School	Smeco	Public	Public	No	Yes	No	Yes
Northern Middle School	Smeco	Well	Plant	No	No	#2 fuel oil	No
Plum Point Middle School	Smeco	Well	Septic	No	No	#2 fuel oil	No
Southern Middle School	Smeco	Well	Septic	Yes	No	No	No
Windy Hill Middle School	B.G.E.	Public	Public	No	No	#2 fuel oil	No
High Schools							
Calvert High School	Smeco	Public	Public	Yes	No	No	No
CHS-Art Building	Smeco	Well	Public	Yes	No	No	No
CHS-Planetarium	Smeco	Well	Public	Yes	No	No	No
CHS-Field House	Smeco	Well	Public	Yes	No	No	No
Huntingtown High School	Smeco	Well	Septic	No	No	#2 fuel oil	No
Northern High School	Smeco	Well	Plant	No	No	#2 fuel oil	No

NHS-Mary D. Harrison Center	Smeco	Well	Plant	No	No	No	No
Patuxent High School	Smeco	Public	Public	Yes	No	No	No
Vocational School							
Calvert Career Center	Smeco	Well	Public	Yes	No	No	No
Special Ed School							
Calvert Country School	Smeco	Well	Public	Yes	No	No	No
Central Office							
Brooks Administration Center	Smeco	Well	Public	No	No	#2 fuel oil	No
Adult Education							
Hunting Creek Annex	Smeco	Well	Septic	No	No	#2 fuel oil	No

Works Cited

Vader, C. D. (n.d.). Fragrance in the workplace: what managers need to know. *Journal of Management and Marketing Research*, 17.