

Gloucester County Public Schools

“Go Green”

Energy & Sustainability Initiatives

Provided below are categorical lists of some of the sustainability efforts that our faculty, staff, students, and parents are engaged in supporting.

Classrooms, Schools, and Offices

- Modeling attitude changes by administrators, teachers, and staff that reflect conservation methods, including turning off lights and closing doors to save energy, saving water, and recycling;
- Maintaining a virtual “green committee” by sharing ideas electronically;
- Discussing alternative energy sources (wind, solar, geothermal, hybrid, etc.);
- Coordinating with Gloucester Clean Community in recycling/cleanup initiatives/building efforts;
- Creating recycling partnerships with community groups to raise funds to benefit the community;
- Teracycling (free waste collection programs for hard to recycle materials) and upcycling (process of converting waste materials or useless products into new materials or products of better quality or a higher environmental value);
- Collecting and recycling of small batteries at all schools and Central Office;
- Recycling of ink jet cartridges;
- Recycling of paper and cardboard at all facilities;
- Recycling expanded to include cans and bottles at many sites (single-stream recycling);
- Recycling further expanded at some sites to include drink pouches and chip packages;
- Recycling of cafeteria food cans and boxes;
- Composting cafeteria waste materials;
- Avoiding use of disposable trays and utensils in school cafeterias;
- Recycling of cans and other drink containers by classes and student clubs in conjunction with teacher coordination and parent group assistance;
- Teaching fuel saving practices in Drivers’ Education, to include: efficiencies with cruise control, manual and automatic transmissions, and starting and stopping at lights and intersections;
- Cleaning up of beaches, waterways, and school sites by student groups, teachers, and volunteers;
- Facilitating student initiated projects, such as aquaculture, food scrap recycling, composting, and home recycling;
- Working with students in planting and maintaining natural habitat and/or water efficient style gardens;
- Working with students in doing water quality and water runoff testing and plotting;
- Facilitating student efforts in energy conservation and efficiency in such programs as STEM;
- Obtaining student and staff recognition for energy conservation efforts (including Peasley’s 12X recognition by [Virginia Naturally Schools](#) and [Project Learning Tree](#));
- Administering SOLs and other assessments online when technology/software/testing permits;
- Implementing Power School data system to create efficiencies;
- Initiating [Safe Routes to School](#) (Abingdon received grant);
- Removing unneeded individual/duplicate electrical appliances/equipment, thus saving energy;
- Printing being done on front and back sides, when possible, and noncritical printing often being done on recycled paper;
- Increasing paperless dispensing and gathering of information in all areas, including classrooms, media centers, guidance, data collection and analysis, surveys, financial tracking and informing, evaluations, and expanding opportunities;
- Implementing online SearchSoft applicant tracking system in HR;
- Providing electronic access to employee paystubs/direct deposit slips, rather than printing and mailing forms;
- Emailing rather than printing/mailing birthday and holiday cards in some offices, eliminating the use/cost of cards/envelopes/postage, and saving paper/trees;
- Using technology (video) to document problems, inform appropriate staff, and provide solutions;
- Consolidating after school activities (times and areas) to reduce energy use;
- Reducing number of instructional days to reduce energy use and fuel consumption;
- Adjusting summertime work hours to reduce energy use and fuel consumption; and,
- Listing sustainability/green initiatives on our webpage.

Community Education Cooperation

- Reducing and/or consolidating community nights at a combination of schools;
- Providing only maintenance heat for gym activities; and,
- Evaluating supplemental heat times in buildings for energy efficiency and effectiveness.

Environmental Awareness Projects (Teachers and Students)

- Promoting the “Go Green Attitude!” and the reading of various eco-oriented materials throughout the year;

- Researching green schools and alternative energy resources, and submitting proposals for the new school;
- Discussing ways to improve green areas, and exploring projects to implement the improvements;
- Researching energy conservation, and methods to combat energy waste;
- Exploring opportunities for savings and grants related to energy, environment, and sustainability;
- Participating in field study experiences to observe and determine how human actions affect the Bay and other ecosystems;
- Participating in labs about farming practices that affect the environment;
- Participating in labs to survey classrooms and other rooms' energy use (lights, computers, HVAC, etc.) and water use;
- Examining and discussing indoor air quality, potential reasons for current status, and ways to improve;
- Evaluating waste and transportation setup;
- Researching Earth Day history, and promoting Earth Day activities;
- Exploring energy and environmental attitudes in other nations;
- Making morning announcements to remind everyone to recycle and to be energy aware; and,
- Programming/broadcasting public service announcements on a local television station regarding plastic pollution and how people can help.

Facilities

- Installed new efficient sewer pumps and control panels that use less energy and can be monitored from a central station;
- Installing low flow faucets and flush valves with auto flush devices;
- Tested waterless urinals, and rejected because use of chemicals and manpower proved less efficient;
- Installing high efficiency hand dryers in several school and administrative office restrooms;
- Installing high efficiency low wattage lights in gymnasiums (resulting in a 66% reduction in energy with an increase in lumens);
- Upgraded GHS commons/cafeteria area ceilings and lighting (resulting in a 50% reduction in energy with an increase in lumens);
- Installed high efficiency LED lighting in the high school auditorium (resulting in a 95% reduction in energy);
- Installed high efficiency low wattage lights in band rooms and choral rooms;
- Replacing incandescent lamps with compact fluorescent lamps (CFL) as part of regular maintenance;
- Installing Alto (Philips) or ECO (GE) lighting, greatly reducing the mercury content when disposing of lamps;
- Continuing to explore high efficiency lighting and self light dimming technology;
- Installing LED lighting fixtures for exterior applications;
- Installing electronic ballasts in both interior and exterior lighting fixtures as part of regular maintenance;
- Installing lighting sensors to save energy when halls and restrooms are empty;
- Installed vending machine misers to turn off lighting and compressors when machines are not being used;
- Disconnected cooling compressors in drinking fountains;
- Removed unauthorized electrical devices;
- Removed traditional water heaters, and installed on-demand tank-less water heaters in some schools, resulting in significant energy savings over traditional equipment;
- Evaluating circulating pumps on water heaters for the use of timing devices to save energy;
- Monitoring HVAC systems constantly by computer to provide the highest efficiencies and most effective comfort levels;
- Monitoring the type of electrical consumption by the buildings, which allows for the annual renegotiation of certain rate schedules with Dominion Power;
- Installed highly reflective roof coating (over black epdm roofing) at several schools and administrative sites to provide energy savings, and a cost effective alternative to traditional roof replacement;
- Replacing roof membranes (in white) to save energy as need arises;
- Exploring use of photo voltaic electrical panels with Dominion Power;
- Installed new insulated glass window systems at several schools, resulting in significant energy savings and greatly increased aesthetics (will continue as budget permits);
- Implemented Integrated Pest Management Program, using "green chemicals" only when necessary, and non-chemical means whenever possible;
- Transitioning from the conventional floor finishes to environmentally friendly finishes, eliminating the heavy metals normally associated with the polymers in the finish (Bet, Pea, & TCW completed);
- Revamping floor maintenance processes, eliminating the need to completely remove wax from floors annually, resulting in increased personnel safety and reduced residual waste impact on the environment, while saving approximately 25% on products;
- Transitioning from oil base to water base finishes on the gym floors, drastically reducing exposure to the harmful volatile organic compounds (VOCs) found in the oil base finishes;
- Using paper products that are "green by design" manufactured from recycled paper;
- Using biodegradable cleaning products metered through dispensing units located at each school, increasing safety at a savings;
- Replacing kitchen ovens/fryers with high efficiency digitally controlled steamer and convection ovens;
- Recycling of 85% of building materials (brick, copper, steel, metal from HVAC equipment, and concrete) from the Page Middle School demolition; and,
- Ongoing preventive maintenance to include:

- Domestic water systems and waste water systems to monitor drinking water quality, to monitor water usage, and to check for potential problems or breakdowns (water fixtures, lines, heaters, pumps, and tanks);
- Kitchen equipment to maintain serviceability and maximum efficiency, and to insure safety;
- HVAC equipment to include filter changes, belt and bearing changes, as well as exhaust fans;
- Emergency generators to insure immediate service, when needed; and,
- Roofs seals and window/door seals and functions to reduce energy loss.

Grounds

- Recycling grass clippings and returning them into the soil from which they come. This practice returns the nutrients trapped in the spent blades of grass to feed our campus lawns as they decompose. It also minimizes the waste going to our landfills and storm water;
- Recycling our shrub and tree trimmings into the woods. This provides habitats for small animals and birds. This practice will return the nutrients trapped in the spent branches into the forests as they decompose. It also minimizes the waste going into our landfills;
- Installed new irrigation systems for the sports fields that have rain sensors that automatically shut the systems down when it rains to avoid wasted water;
- Monitoring the irrigation systems to ensure the most efficient operation/water coverage;
- Utilizing low maintenance sustainable plants (slow growing, drought tolerant plants require less trimming and less water);
- Incorporating a “Natural Bayscape Area” in which we do minimal mowing;
- Increasing our athletic fields sustainability, and minimizing the need for fertilizer using a “Nutrient Management Program”. (This program is facilitated by acquiring soil samples from each athletic field and a soil analysis from a certified laboratory. An in-depth report indicates everything the turf and soil requires, thus minimizing unnecessary fertilizers leaching into the Chesapeake Bay Watershed);
- Cleaning all organic materials on non-permeable surfaces (this prevents any decomposable medium from entering the storm water system; all organics (i.e. grass clippings and leaves) produce nitrogen as they decompose);
- Maintaining flowerbeds by manually removing all unwanted plants in lieu of using chemicals (when manpower availability allows);
- Performing regular maintenance on all mowing equipment to increase productivity, longevity, and fuel efficiency;
- Recycling all used motor oil by taking it to designated recycling centers;
- Starting a Virginia branch of the Professional Grounds Management Society (PGMS). This network will provide a platform for local grounds professionals to gather and discuss Best Management Practices in the field; and,
- Pooling resources/knowledge with nearby grounds managers/agencies to enhance resources and the sustainability and care of our school campuses, athletic fields, landscapes, sidewalks, and parking lots.

Technology

- Utilizing computer management software that turns off all non-essential computers at night (estimated annual savings may exceed \$150,000);
- Replaced CRT monitors with LCD monitors which use approximately ½ the energy (over 1,000 replaced computers result in approximately \$32,000 annual savings; 750 scheduled for exchange over the next 3 years);
- Consolidating, reducing, and replacing servers (approximately \$10,000 in energy savings);
- Utilizing of IP applications to reduce the number of analog telephone lines needed;
- Expanding use of handheld electronic devices; and,
- Recycling of dead computers and electronics through Puller Center (provides local jobs and saves the environment).

Transportation

- Maintaining active membership in Virginia Clean Cities in conjunction with Dragon Run Organization;
- Using bio-diesel for 6 years, which reduced the release of exhaust pollutants into the atmosphere;
- Installed diesel oxidation converters (purchased with a clean air grant) into our older busses to produce cleaner exhaust;
- Introducing propane as a fuel source, and replacing old busses with propane busses;
- Reducing idle time to save fuel;
- Reducing vehicle oil changes with extended life synthetic oils (approximately 25,000 miles);
- Reviewing routes and stops constantly for efficiency, safety, and fuel savings; and,
- Performing preventive maintenance and vehicle inspections semi-annually and annually.